PUBLIC REVIEW DRAFT



Initial Study / Mitigated Negative Declaration

Kennefick Road Flood Control Project

San Joaquin County

October 2020

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Kennefick Road Flood Control Project

San Joaquin County

Initial Study / Mitigated Negative Declaration

Prepared for:

San Joaquin County

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SAN JOAQUIN COUNTY
Greatness grows here.

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MITIGATED NEGATIVE DECLARATION

The San Joaquin County (County), a municipal corporation, does hereby prepare, declare, and publish this Mitigated Negative Declaration for the following described project:

The Kennefick Road Flood Control Project. The project proposes to reconstruct a 285-foot segment of Kennefick Road with enhanced flood capacity. The proposed project would reconstruct Kennefick Road while replacing temporary emergency repairs with permanent flood control improvements. Three reinforced concrete box culverts would be installed underneath the reconstructed roadway, consisting of six modular sections, a cutoff wall and headwall at both ends, and four wingwalls. All three culverts would be placed at streambed depth of the unnamed drainage on other side in order to convey similar flow amount of the disaster event in 2017 (5 year/7 day event) with minimal impact to the water surface elevation level.

The County proposes to:

- Adopt the Mitigated Negative Declaration
- Approve the Kennefick Road Flood Control Project

The County has reviewed the proposed project and, on the basis of the whole record before it, has determined that there is no substantial evidence that the project, with mitigation measures as identified in the attached Initial Study, will have a significant effect on the environment. This Mitigated Negative Declaration reflects the lead agency's independent judgment and analysis. An Environmental Impact Report is not required pursuant to the Environmental Quality Act of 1970 (Sections 21000, et seq., Public Resources Code of the State of California).

This Mitigated Negative Declaration has been prepared pursuant to Title 14, Section 15070 of the California Code of Regulations; the Local Environmental Regulations adopted by San Joaquin County; and the San Joaquin County Municipal Code.

Copies are also available for review at San Joaquin County Department of Public Works, 1810 East Hazelton Avenue, Stockton, California 95205 (Copies are available for a fee at this location) and also online at http://www.sjgov.org/pubworks/

Department of Public Works
San Joaquin County, a municipal corporation

Dated: October 28, 2020

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Table of Contents

Executive Summary i

List of Abbreviations v

Section 1 Project Information 1

Section 2 Introduction 3
2.1 Focus of the Environmental Review 3
2.2 Summary of Findings 3
2.3 Required Permits and Additional Approvals 4
2.4 Lead Agency Determination 5

Section 3 Project Description 6
3.1 Project Location 6
3.2 Background 6
3.3 Project Purpose, Need, and Objectives 9
3.4 Existing Conditions 9
3.5 Project Features 10
3.6 Construction Controls 15

Section 4 Environmental Evaluation 18
4.1 Aesthetics 19
4.2 Agricultural and Forestry Resources 23
4.3 Air Quality 26
4.4 Biological Resources 33
4.5 Cultural Resources 40
4.6 Energy 43
4.7 Geology and Soils 45
4.8 Greenhouse Gas Emissions 50
4.9 Hazards and Hazardous Materials 53
4.10 Hydrology and Water Quality 56
4.11 Land Use and Planning 62
4.12 Mineral Resources 64
4.13 Noise 66
4.14 Population and Housing 69
4.15 Public Services 70
4.16 Recreation 72
4.17 Transportation 74
4.18 Tribal Cultural Resources 77
4.19 Utilities and Service Systems 81
4.20 Wildfire 84
4.21 Mandatory Findings of Significance 86

Section 5 Mitigation Monitoring and Reporting Plan 88

Section 6 References 96

List of Figures

Figure 1 Project Vicinity Map 7
Figure 2 Project Location Map 8
Figure 3. 2017 Storm Damage 11
Figure 4. Emergency repair work - Railroad wing wall in right side of picture 11
Figure 5. Current Temporary Improvements 12
Figure 6: Site Plan 14

List of Tables

Table 1. SJVAPCD Air Quality Thresholds of Significance 27
Table 2. Estimated Average Daily Emissions - Construction 30
Table 3. Estimated Total Project Emissions - Construction 30
Table 4. Recommended GHG Threshold - Construction 51
Table 5. Mitigation and Monitoring Plan 89

List of Appendices

Appendix A
RoadMOD Emissions Calculations
Appendix B
Biological Resources Assessment
Appendix C
Cultural Resources Technical Report
Appendix D
Aquatic Resources Delineation
Appendix E
Geotechnical Report

Executive Summary

The County of San Joaquin (County) proposes to implement the Kennefick Road Flood Control Project (project) to reconstruct a segment of Kennefick Road with enhanced flood capacity. The project is needed in response to a heavy rain event in February of 2017 that caused flooding that washed away a series of culverts and destroyed over 100 feet of Kennefick Road, and eliminated the only access to residences, farms, and businesses in the area.

The storm event was declared a disaster by the Federal Emergency Management Agency (FEMA), and as such, the County received funding from the Hazard Mitigation Grant Program as part of FEMA Disaster #4308 for California (FEMA-4308-DR-California) covering the event for Severe Winter Storms, Flooding, and Mudslides.

Emergency measures were taken to repair the road and restore access following the storm; however, the County is proposing to construct permanent repairs that enhance the drainage design capacity and reduce future flooding risks. The work includes raising the roadway, new pavement, and culvert reconstruction.

The project is intended to meet the following objectives:

- Design and construct conveyance facilities for the drainage passing under Kennefick Road to convey the 5-year/7-day regional precipitation event (approximately 500 cubic feet per second [cfs])
- Protect residents and businesses from disruption and risks due to flooding from the 5-year/7-day regional precipitation event
- Reconstruct the damaged roadway

POTENTIAL IMPACTS

Based on the environmental evaluation performed for this Initial Study, the proposed project would have:

- ***No Impact*** on Mineral Resources, Population & Housing, Public Services and Recreation.
- ***Less Than Significant Impact*** on Aesthetics, Agricultural and Forestry Resources, Air Quality, Cultural Resources, Energy, Geology & Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology & Water Quality, Land Use & Planning, Noise, Transportation, and Utilities & Service Systems.
- ***Less Than Significant Impact with Mitigation Incorporated*** on Biological Resources, and Tribal Cultural Resources. The project will

implement mitigation measures as described herein to reduce potential impacts to a less than significant level.

MITIGATION MEASURES

The County has agreed to implement the following mitigation measures to reduce project impacts to a "Less than Significant" level:

- ***Mitigation Measure BIO-1:*** If any construction activities (e.g., clearing, grubbing, or grading) are scheduled during the bird nesting season (typically defined by CDFW as February 1 to September 1), the County or approved construction contractor shall retain a qualified biologist to conduct a pre-construction survey of the project area, including a 100-foot buffer, as access is available, to locate active bird nests, identify measures to protect the nests, and locate any other special status species.

  The pre-construction survey shall be conducted no more than 14 days prior to the implementation of construction activities (including staging and equipment storage). Any active nest should not be disturbed until the young have fledged or under the direction provided by a qualified biologist. Any special status species shall not be disturbed without the direction of a qualified biologist. If an active nest is found during construction, disturbance shall not occur without direction from a qualified biologist.

- ***Mitigation Measure BIO-2:*** Prior to construction activities, the County or County's selected Contractor shall conduct worker awareness training for species of special concern with potential to occur onsite.

  During excavation and installation of culverts, biological monitors shall be present onsite to ensure potential CTS and CRLF individuals are not harmed during construction. If any project personnel encounter any species of special concern during project activities, work shall be suspended, CDFW notified, and conservation measures shall be developed in agreement with CDFW prior to re-initiating the activity. If during the conduct of project activities, Permittee encounters any species listed as Threatened or Endangered pursuant to the CESA, work shall be suspended, and CDFW notified. Work may not re-initiate until the Permittee has consulted with CDFW and can demonstrate compliance with CESA.

- ***Mitigation Measure TCR-1:*** To minimize the potential for destruction of or damage to existing or previously undiscovered burials, archaeological and tribal cultural resources and to identify any such resources at the earliest possible time during project-related earthmoving activities, the County and its construction contractor(s) shall implement the following measures:

a. Paid Native American monitors from culturally affiliated Native American Tribes shall be invited to monitor the vegetation grubbing, stripping, grading or other ground-disturbing activities in the project area to determine the presence or absence of any cultural resources. Native American representatives from cultural affiliated Native American Tribes act as a representative of their Tribal government and shall be consulted before any cultural studies or ground-disturbing activities begin.

b. Native American representatives and Native American monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted or slowed if such sites or objects are identified within the direct impact area. Only a Native American representative can recommend appropriate treatment of such sites or objects.

c. If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until an archaeologist who meets the Secretary of the Interior's qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the Caltrans, SHPO, and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or other actions determined during consultation.

d. A consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation shall be developed in coordination with interested Native American Tribes. The brochure shall be distributed and the training would be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and would outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program shall also underscore the

requirement for confidentiality and culturally appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values.

- ***Mitigation Measure TCR-2***: In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities, the construction contractor or the County, or both, shall immediately halt potentially damaging excavation in the area of the burial and notify the County coroner and a qualified professional archaeologist to determine the nature of the remains. The coroner shall examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands, in accordance with Section 7050(b) of the Health and Safety Code. If the coroner determines that the remains are those of a Native American, he or she shall contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). After the coroner's findings are presented, the County, the archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed.

List of Abbreviations

AB	Assembly Bill
ADI	area of direct impact
ADL	aerially deposited lead
AG-40	general agriculture
AII	area of indirect impact
APCD	Air Pollution Control District
APE	Area of Potential Effect
ASR	Archaeological Survey Report
BMP	best management practice
BRA	Biological Resource Assessment
CAL FIRE	California Department of Forestry and Fire Protection
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCIC	Central California Information Center
CCR	California Code of Regulations
CDFG	California Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalency Levels
CO2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
County	San Joaquin County
CWA	Clean Water Act
dbh	diameter at breast height
DTSC	Department of Toxic Substances Control
DDT	dichlorodiphenyltrichloroethane
EIR	Environmental Impact Report
EO	Executive Order
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
GHG	Greenhouse Gas
GIS	geographic information system
HPSR	Historic Property Survey Report
IPaC	Information Planning and Conservation

IS	Initial Study
lbs	pounds
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MLD	most likely descendent
MND	Mitigated Negative Declaration
MUTCD	Manual on Uniform Traffic Control Devices
mph	miles per hour
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NOx	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPPA	Native Plant Protection Act
OPR	Office of Planning and Research
PCB	polychlorinated biphenlys
PG&E	Pacific Gas and Electricity
PM	particulate matter
PRC	Public Resource Code
project	Kennefick Road Flood Control Project
RCBC	reinforced concrete box culverts
RCEM	Roadway Construction Emissions Model
ROG	reactive organic gases
ROW	right-of-way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SFHA	Special Flood hazard area
SJAQMD	San Joaquin Valley Air Pollution Control District
SWRCB	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
TMP	Traffic Management Plan
µg/m3	micrograms per cubic meter
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zones
VMT	vehicle miles travelled
VOC	volatile organic compounds

WOUS	waters of the United States
WSEL	water surface elevation level

Section 1 Project Information

1. Project title:	Kennefick Road Flood Control Project
2. Lead agency name and address:	San Joaquin County 1810 E. Hazelton Avenue Stockton, CA 95205
3. Contact person and phone number:	Najee Zarif San Joaquin County Department of Public Works (209)-468-3053 nzarif@sjgov.org
4. Project location:	San Joaquin County
5. Project sponsor's name and address:	San Joaquin County 1810 E. Hazelton Avenue Stockton, CA 95205
6. General Plan designations:	General Agriculture
7. Zoning:	AG-40 General Agriculture
8. Description of project:	The project proposes to reconstruct a segment of Kennefick Road with enhanced drainage and flood capacity features. The work includes raising the roadway, new pavement, and culvert reconstruction.
9. Surrounding land uses and setting:	AG-40 General Agriculture
10. Other public agencies whose approval is required:	California Department of Fish and Wildlife Federal Emergency Management Agency
11. Have California Native American tribes traditionally	The tribes were initially contacted regarding the project site on March 24,

and culturally affiliated with the project area requested consultation pursuant to Public Resources Code Section 21080.3.1? 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.?

2020. A response was received by the Wilton Rancheria tribe recommending mitigation measures be added for the proposed project. No requests for consultation have been received. The requested Sacred Lands Search reported no known resources in the area.

Section 2 Introduction

2.1 FOCUS OF THE ENVIRONMENTAL REVIEW

2.1.1 California Environmental Quality Act

San Joaquin County (County), as the project sponsor and Lead Agency, has prepared this Draft Initial Study (IS) pursuant to the California Environmental Quality Act (CEQA) for the proposed Kennefick Road Flood Control Project (project). This IS is an informational document provided to help the public and decision-makers understand the potential effects the project may have on the environment, and how potential adverse effects may be mitigated. Whereas this document has identified potentially significant impacts that can be reduced to less than significant with the adoption of mitigation measures, a Mitigated Negative Declaration (MND) has been prepared.

The Notice of Intent to Adopt a Mitigated Negative Declaration provides notice to interested agencies and the public that it is the County's intent to adopt an MND and, pending public review, expects to determine from this IS that the proposed project would not have a significant effect on the environment as mitigated. This Public Review Draft IS/MND is subject to modification based on comments received by interested agencies and the public.

2.2 SUMMARY OF FINDINGS

Based on the environmental evaluation performed for this IS (Section 4), the proposed project would have:

- ***No Impact*** on Mineral Resources, Population & Housing, Public Services and Recreation.
- ***Less Than Significant Impact*** on Aesthetics, Agricultural and Forestry Resources, Air Quality, Cultural Resources, Energy, Geology & Soils, Greenhouse Gas Emissions, Hazards and Hazardous Materials, Hydrology & Water Quality, Land Use & Planning, Noise, Transportation, and Utilities & Service Systems.
- ***Less Than Significant Impact with Mitigation Incorporated*** on Biological Resources, and Tribal Cultural Resources. The project will implement mitigation measures as described herein to reduce potential impacts to a less than significant level.

2.3 REQUIRED PERMITS AND ADDITIONAL APPROVALS

2.3.1 Permits

The project would obtain or comply with the following permits:

- Clean Water Act Section 404 Permit
- Clean Water Act Section 401 Water Quality Certification
- California Department of Fish and Game Code Section 1600
- Potential local or county permits, as applicable

2.3.2 Responsible Agencies

- California Department of Fish and Wildlife
- Federal Emergency Management Agency
- California State Water Resources Control Board

2.4 LEAD AGENCY DETERMINATION

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.

X 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 (EIR) 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 EIR 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.

Awni Taha _____ 10/26/20

Signature Date

Awni Taha _____ Engineer V-Senior Engineer

Name Title

Section 3 Project Description

The County proposes to reconstruct a segment of Kennefick Road with enhanced flood capacity. The project is needed in response to a heavy rain event in February of 2017 that caused flooding that washed away a series of culverts and destroyed over 100 feet of Kennefick Road, and eliminated the only access to residences, farms, and businesses to the north. The proposed project would reconstruct Kennefick Road while replacing temporary emergency repairs with permanent flood control improvements.

3.1 PROJECT LOCATION

The project is located in an unincorporated area of the County southeast of the City of Galt, California (Figure 1). The project area encompasses improvements within the roadway, county right-of-way (ROW), and adjacent privately-owned parcels. The project involves approximately 285 feet of Kennefick Road as seen on Figure 2.

The project area covers approximately 0.9 acres. This includes the 0.48-acre area for proposed improvements and installation of a temporary bypass road west of Kennefick and 0.42 acres for three staging areas. The temporary bypass road would maintain access to residents and property owners during construction. The staging areas include a 0.04-acre area partially overlapping the Kennefick Road ROW and extending onto private property, and two 0.19-acre areas north of the proposed improvements area within the Kennefick Road ROW shoulder.

3.2 BACKGROUND

In February of 2017, heavy rains in the area caused flooding to wash away a series of culverts in Kennefick Road and destroy over 100 feet of roadway north of Liberty Road, eliminating the only access to residences, farms, and businesses in this area. Emergency measures were taken to repair the road and restore access.

Since there is no alternative route to access the residences, farms, and businesses located on this section of Kennefick Road, simply returning the project to pre disaster design capacity would likely result in future failures and further disruption of access for residents, property owners, and emergency services. Additionally, over the last 25 years and as recently as 2005, new homes have been built in this area, increasing the affected population. Therefore, the County is seeking to construct repairs that enhance the drainage design capacity to convey the 5-year/7-day regional precipitation event.

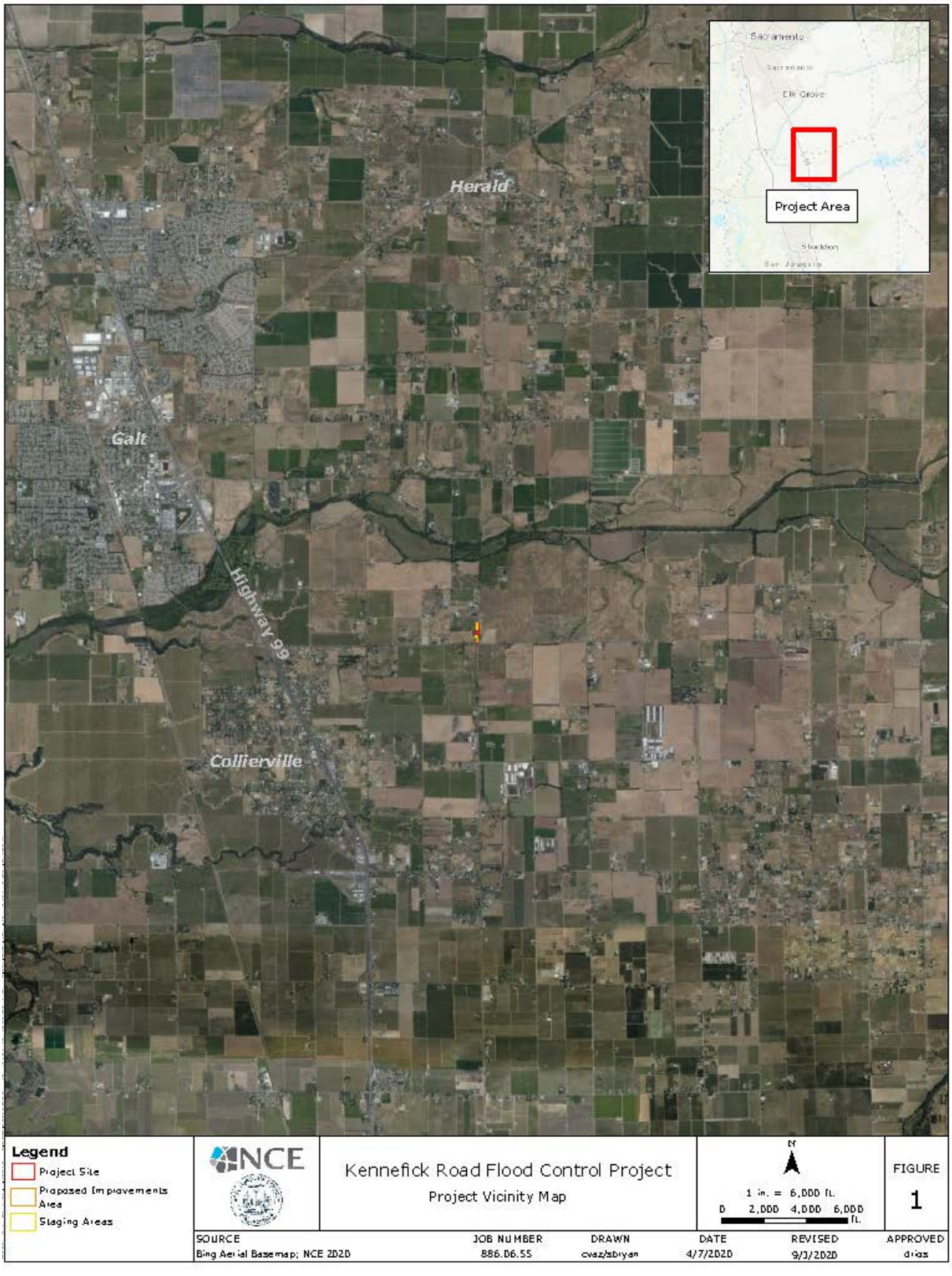

Figure 1 Project Vicinity Map

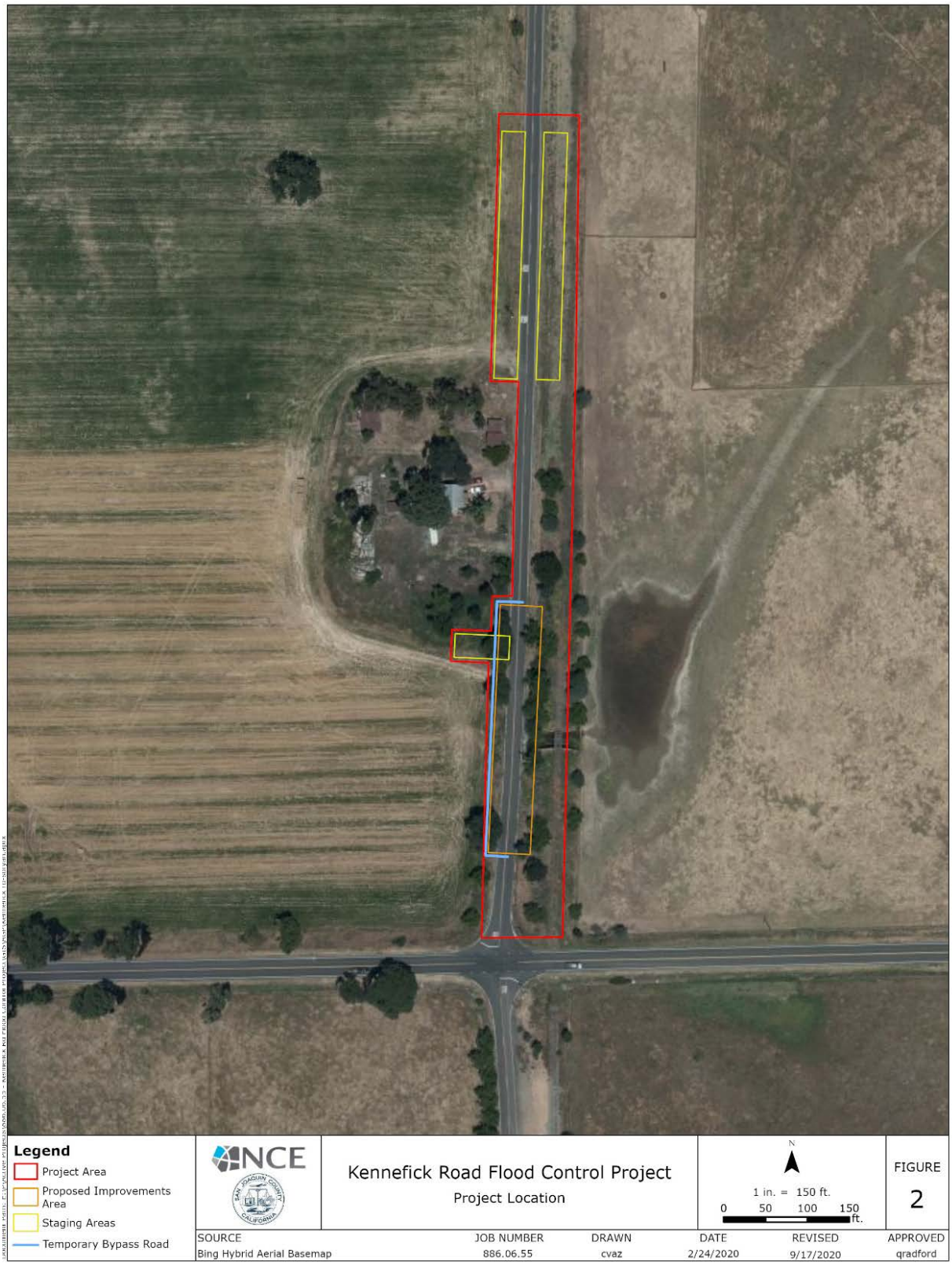

Figure 2 Project Location Map

During the rain event in 2017, San Joaquin County applied for Hazard Mitigation Grant Program funding from FEMA as part of the FEMA Disaster #4308 for California (FEMA-4308-DR-California) covering the event of Severe Winter Storms, Flooding, and Mudslides. The County was successful in obtaining funds, which are being used to construct the project.

3.3 PROJECT PURPOSE, NEED, AND OBJECTIVES

The purpose of the project is to provide improved access and drainage for Kennefick Road that would ensure access to properties north of Liberty Road during 5-year/7-day regional precipitation events. The proposed project is needed to redesign and replace the roadway and culverts that were quickly placed as emergency response following the 2017 event, in a way that provides long term safe and stable access for residents, property owners, and emergency services during major storms.

The project is intended to meet the following objectives:

- Design and construct conveyance facilities for the Unnamed Tributary passing under Kennefick Road to convey the 5-year/7-day regional precipitation event (approximately 500 cubic feet per second [cfs])
- Protect residents and businesses from disruption and risks due to flooding from the 5-year/7-day regional precipitation event
- Reconstruct the damaged roadway

3.4 EXISTING CONDITIONS

Kennefick Road is a two-lane, 20-foot wide north-south roadway serving an agricultural area of San Joaquin County, located east of State Highway 99 and southeast of the City of Galt. Kennefick Road provides the only access to residences, farms, and businesses located north of its intersection with Liberty Road. Liberty Road is a two-lane, east-west designated local roadway that provides access to Highway 99.

Kennefick Road is bordered by a raised railroad on the east, and the western right-of-way slopes gently to the west. Fifty feet upstream of Kennefick, the unnamed tributary crosses beneath a Central California Traction Company Railroad track via a railroad bridge with a 20-foot by 13-foot opening with a one-foot wide pier. Flared headwalls downstream of the railroad bridge create a 30-foot wide channel between the railroad and roadway crossing. The FEMA AE Zone floodplain suggests that the crossings create backwater flooding; the floodplain is about 140 feet wide. To the west, survey data did not pick up any defined channel. Survey data suggests that the 2017 disaster event and/or activities since that date have deposited a

significant amount of sediment downstream of the road, resulting in the downstream slope being adverse or flat for approximately 2,000 feet downstream before sloping westward. Trees, shrubs, and grasses are located within the ROW on both sides of the road.

Erosion

Soil erosion is present near the mouth of the railroad bridge abutment located adjacent to the project area. Soil erosion appears to have been caused by the emergency culvert replacement being placed 1.5 feet higher than the original flowline of the unnamed tributary, according to a review of survey data compared to data from a 2014 FEMA flood insurance study (California Department of Water Resources and HDR 2014) .

Drainage

The unnamed tributary crosses Kennefick Road just north of Liberty Road flowing east to west. It is an ephemeral tributary that primarily conveys overflow from Dry Creek, located north of the project area, across agricultural land. During a large flood event, flow from the drainage was intended to flow over the road without destroying it.

After the 2017 storm event washed the existing culverts and road section away, emergency repairs were performed on the road (Figure 3, Figure 4, and Figure 5). New culverts, two 18-inch equivalent arch corrugated metal pipes (CMPs) and a 12-inch circular CMP asphalt pipe were laid over in a similar position to the previously existing roadway alignment. The installed culverts function, but do not provide any additional protection from similar or more severe storm events like the storm experienced in 2017 (MGE 2020). In clearer terms, the current culverts convey less than 30 cubic feet per section (cfs), while the storm event and therefore project goals require nearly 500 cfs conveyance.

3.5 PROJECT FEATURES

Project improvements are proposed on a 285-foot segment of Kennefick Road. Improvements would consist of:

- Drainage improvements
- Roadway reconstruction
- Reconstruction of travel lanes
- Temporary construction easements
- Temporary bypass road
- Utility pole relocation



Figure 3. 2017 Storm Damage

Source: MGE 2020. Kennefick Road Culvert Repair Geotechnical Report.



Figure 4. Emergency repair work - Railroad wing wall in right side of picture

Source: MGE 2020. Kennefick Road Culvert Repair Geotechnical Report.



Source: MGE 2020. Kennefick Road Culvert Repair Geotechnical Report.

Figure 5. Current Temporary Improvements

Travel Lanes

Kennefick Road would be reconstructed with one 10 to 12-foot travel lane in each direction with a narrow gravel shoulder. The pavement would generally be sloped at a minimum 2% cross-slope and 8% for the shoulders. The roadway along the corridor over proposed culverts would be constructed using a 5.5" reinforced concrete pavement layered over a geotextile bond breaker. The rest of the roadway along the corridor would be constructed using a 6" thick aggregate road base, overlaid by approximately 3" in asphalt-concrete road surface, resulting in an approximately 9" thick roadway. The lanes would be signed and striped according to the Caltrans and Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) standards (Figure 6).

Culvert Improvements

Kennefick Road currently has several underground culverts. As part of the proposed project, a portion of the existing infrastructure would be reconstructed, and new culverts installed. Three reinforced concrete box culverts would be installed underneath the reconstructed roadway, consisting of six modular sections, a cutoff

wall and headwall at both ends, and four wingwalls. All three culverts would be placed at streambed depth of the unnamed drainage to convey similar flow amount of the disaster event in 2017 (5 year/7 day event) with minimal impact to the water surface elevation level (Figure 6).

Riprap would be utilized at both the upstream and downstream ends of the culvert system for flow control to minimize scouring.

Easements and Acquisition

Temporary construction easements may be needed along the Kennefick Road alignment for benched excavation, temporary bypass road construction, and staging of equipment during construction.

Temporary Bypass Road

Since no alternative access exists to the north of the project area, maintaining public access on Kennefick Road during construction would require the construction of a temporary 10-foot-wide gravel road to the west of Kennefick Road. Components of the temporary bypass road includes grading, placement of twelve inches of aggregate, and restoration after project construction (see previous Figure 2).

Road Reconstruction

Elevation of the reconstructed roadway would be raised one to two feet to accommodate increased flood control capabilities, address pre-disaster depressional ponding issues, and accommodate placement of new culverts. Fill may be required on the shoulders to stabilize the raised roadway. The road would be reconstructed as-near to the pre-disaster alignment as possible.

Construction Access and Staging

Within the project area, two alternatives are available for construction staging, as illustrated on previous Figure 2.

- Alternative 1 is north of project area on the east side of the roadway. The County ROW has an approximate width of ten (10) feet with the addition of an extra ten (10) feet with the approval of Central California Traction Company (CCTC).
- Alternative 2 is also north of project area but on the west side of the roadway on private property.

Staging area would not be guaranteed and would be the contractor's responsibility in obtaining permission from the appropriate property owner.

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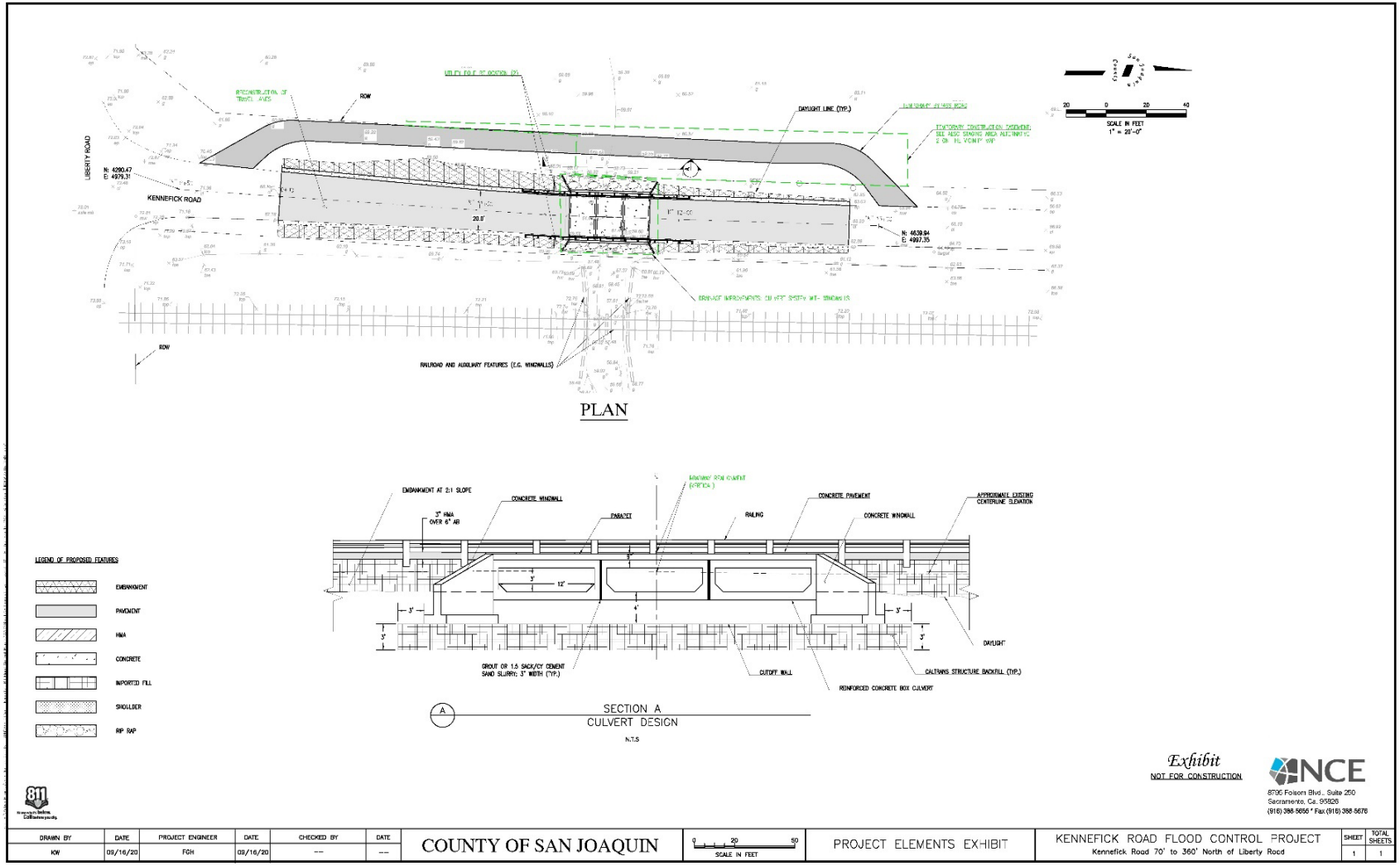

Figure 6: Site Plan

3.5.1 Construction Schedule

Construction is scheduled to occur in the Fall of 2020 or the Spring of 2021. It is anticipated that construction, including mobilization and demobilization, would last for a duration of 8 weeks (40 days).

Grubbing would occur on Kennefick Road and include the removal of minor vegetation over a 4 day period.

3.5.2 Equipment and Labor Force

Various types of equipment would be needed for the construction of the various project elements along the corridor.

Construction equipment may include, but is not limited to, a reclaimer to pulverize the pavement material in place, a grader, water truck, skip loader, excavator, backhoe, paving machine, drum roller, wheeled roller, truck crane, and up to seven (7) haul trucks. Water trucks with a tank size of 2,000 to 4,000 gallons may be utilized for dust suppression during construction

A skilled labor force would be required to complete this project, including equipment operators, asphalt paving crews, truck drivers, and laborers. The number of workers at the construction site would vary based on the phase and complexity of construction. Construction of concrete flatwork, grading and paving would result in the highest count of workers on site. It is assumed during construction up to 10 workers would be on site.

3.5.3 Hauling Quantities

Anticipated hauling quantities are related to off-haul of grubbed and demolished materials and subgrade materials (250 cubic yards) and asphalt surfacing and aggregate base (658 square yards at approximately 8” depth). The elevation of the deepest point of excavation is 51 feet, 3 feet below the cutoff wall that lies underneath the culvert and 7 feet below the proposed invert, which is the interior floor of the culvert.

3.6 CONSTRUCTION CONTROLS

The project is required to comply with local, state, and federal regulations pertaining to protection of human health, safety, and environment.

The following required local and state construction controls are incorporated into the project design and are considered a part of the proposed project.

3.6.1 Air Quality and Emissions

The San Joaquin Valley Air Pollution Control District (SJVAPCD) requires the following controls be implemented at all construction sites regardless of whether construction-related emissions exceed applicable thresholds of significance (SJVAPCD 2015):

1. All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
2. All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using water or chemical stabilizer/suppressant.
3. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.
4. With the demolition of buildings up to six stories in height, all exterior surfaces of the building shall be wetted during demolition.
5. When materials are transported off-site, all material shall be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container shall be maintained.
6. All operations shall limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. (The use of dry rotary brushes is expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions.) (Use of blower devices is expressly forbidden.)
7. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing sufficient water or chemical stabilizer/suppressant.
8. Within urban areas, trackout shall be immediately removed when it extends 50 or more feet from the site and at the end of each workday.
9. An owner/operator of any site with 150 or more vehicle trips per day, or 20 or more vehicle trips per day by vehicles with three or more axles shall implement measures to prevent carryout and trackout.

3.6.2 Geology and Soils

The Hydrology and Water Quality controls section below outlines erosion and sediment BMPs that would minimize impacts to geology and soils during construction.

3.6.3 Hydrology and Water Quality

Construction activities that disturb one acre or more of land, and construction on smaller sites that are part of a larger project, must comply with a California State Water Resources Control Board (SWRCB) Construction General Permit (Order 2009-0009-DWQ) that regulates stormwater leaving construction sites. Site owners must notify the state, prepare, and implement a Stormwater Pollution Prevention Plan (SWPPP), and monitor the effectiveness of the plan. The SWPPP must outline measures that would protect hydrology and water quality resources, including groundwater, from negative impacts during construction.

Construction site stormwater BMPs would follow the Caltrans Construction Site Best Management Practices Manual (Caltrans 2017) to control and minimize the impacts of construction related activities. The following BMPs, at a minimum, would be implemented at the site during construction:

1. Temporary erosion and sediment control BMPs to prevent the transport of earthen materials and other construction waste materials from disturbed land areas, stockpiles, and staging areas during periods of precipitation or runoff (such as silt fence, erosion control fabric, fiber rolls).
2. Tracking controls (such as designated ingress and egress areas) and designated staging areas outside of drainage areas.
3. Revegetation of all disturbed areas, including staging with native species only.
4. Temporary BMPs to prevent wind erosion and sediment transport of disturbed areas, such as use of water for dust control and covering of stockpiles.
5. Construction boundary fencing to limit land disturbance to areas not planned for construction.

3.6.4 Traffic During Construction

For activities within a county right-of-way, a California Manual on Uniform Traffic Control Devices Traffic/Pedestrian Control Plan must be prepared and submitted for review and approval by the County.

Section 4 Environmental Evaluation

The following sections evaluate the potential adverse impacts of the project in compliance with CEQA. Appendix G of the CEQA Guidelines (California Natural Resources Agency 2019) provides a sample checklist with a series of questions designed to enable the lead agency, to identify project impacts with respect to 20 environmental topics; this IS generally follows this checklist.

Except where a specific threshold has been adopted by a public agency and is specified in the sections below, such as an air quality threshold, Appendix G of the CEQA Guidelines are used as thresholds of significance for the CEQA checklist questions.

Potential environmental impacts are described as follows:

- **Potentially Significant Impact**: An environmental impact that could be significant and for which no feasible mitigation is known. If any potentially significant impacts are identified in this Checklist, an EIR must be prepared.
- **Less than Significant Impact with Mitigation Incorporated**: An environmental impact that requires the implementation of mitigation measures to reduce that impact to a less than significant level.
- **Less than Significant Impact**: An environmental impact may occur; however, the impact would not exceed significance thresholds.
- **No Impact**: No environmental impacts would result from implementation of the project.

4.1 AESTHETICS

This section addresses the potential effects of the proposed project on visual resources. This section describes the visual resources setting of the project and the appearance of the roadways after construction and analyzes the potential effects of the proposed project on visual resources in terms of changes to the viewshed. This analysis considers the existing visual setting and its visual character and scenic quality, the potential sensitivity of likely project viewers to changes in the viewshed, and the visibility or dominance of the project after construction.

4.1.1 Environmental Setting

The project is in Central California's agricultural San Joaquin Valley, surrounded by the foothills of the Diablo Range to the southwest and the Sierra Nevada foothills to the east. The project area does not contain, nor is it within the viewshed of, any designated open space area that can be used for recreation or the production of resources as defined in the Community Development Element of the San Joaquin General Plan 2035 (General Plan; San Joaquin County 2016).

The project area is in an agricultural setting, characterized by rich agricultural soils and farming activities. The project area and the surrounding vicinity is zoned as general agriculture (AG-40).

The Natural and Cultural Resources Element of the San Joaquin County General Plan (page 3.4-11) indicates the County's primary scenic attributes include the natural, rural, and agriculture aspects of the County (General Plan; San Joaquin County 2016). Most scenic views are limited to near- and medium- range as provided by viewpoints such a public recreation areas and roadways. Liberty Road, located adjacent to the project area, is identified by the General Plan as a local scenic roadway.

Viewers

Sensitive viewers include residential viewers. Commuters are not considered sensitive viewers, although travelers to recreational sites are considered sensitive viewers.

The nearest residence is adjacent to the proposed project area, with an average setback of approximately 50 feet from the edge of the roadway. The proposed project would be seen in the foreground and against the backdrop of the agriculture fields. The residences in the project vicinity north of the project area are partially screened by the existing vegetation adjacent to the roadway, resulting in limited site distance.

Potential Project Corridor Visibility

Identification of the project's viewshed was based on review of project engineering drawings, visual anticipation of the project's appearance from representative viewpoints, study of topographic maps and air photos, and field observations. The viewshed indicates two categories of view areas: (1) those in which the roadway is likely to be generally visible; and (2) those in which views toward the project site are likely to be blocked for the most part, but may be visible from certain specific locations. As a practical matter, the boundaries of the viewshed were set to the north and south sides of the project area where views were not otherwise blocked by trees or other obstructions.

4.1.2 CEQA Checklist Summary

Except as provided in Public Resources Code Section 21099, would the project:

CEQA Question	Impact Determination
a) Have a substantial adverse effect on a scenic vista?	Less Than Significant Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway?	No Impact
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?	Less Than Significant Impact
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	No Impact

4.1.3 Answers to CEQA Checklist Questions

Except as provided in Public Resources Code Section 21099:

a) Would the project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact

As discussed in the Environmental Setting, the project area contains an existing roadway corridor in an area zoned for agriculture. The surrounding land use is zoned for grazing and agriculture use. This project area is not identified for open space and is not identified as a scenic vista in the San Joaquin County General Plan. Adjacent to the project area is a local scenic roadway (Liberty Road); however, construction of the project would not affect the scenic roadway.

Goal NCR-7 of the County's Natural and Cultural Resources Element of the General Plan is "to protect and enhance the unique scenic features of San Joaquin County." Under this goal, policies and implementation measures describe ways that the new development shall consider and preserve scenic views.

Since the proposed project includes roadway improvements to the existing roadway, the project would not have an impact on scenic vistas or scenic qualities identified in General Plan Goal NCR-7. The project would not include extreme topographic modification nor significantly impact natural resources. Therefore, implementing the proposed project would result in a less-than-significant impact on a scenic vista.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact

Highway 99 is the nearest state highway to the project site, located approximately 1.5 miles west of the project. Highway 99 is not currently listed on the on the California Department of Transportation (Caltrans) list of Scenic Highways (Caltrans 2020). Roadway improvements would not result in the significant removal or damage to trees. Because Highway 99 is not listed as a Scenic Highway and because the project would not damage scenic resources within a state scenic highway, there would be no impact.

c) In non-urbanized areas, would the project 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?

Less Than Significant Impact

The project is in a non-urbanized area that is being used for agriculture and farming uses. Development beyond the immediate roadway corridor of Kennefick Road is blocked by existing vegetation adjacent to the roadway. Views of the project site beyond the immediate corridor would be completely blocked by topography and vegetation.

Repair of the roadway and culverts would not substantially degrade the existing visual character and public views of the site and the surrounding area. Once constructed, the project would improve the visual character and public view of the existing damaged roadway; therefore, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.

d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

No Impact

No new lighting such as streetlights, or sources of glare such as road signs, are proposed as part of the project; therefore, there would be no impact on day or nighttime view in the area.

4.2 AGRICULTURAL AND FORESTRY RESOURCES

4.2.1 Environmental Setting

The project area and the vicinity surrounding the project is zoned for AG-40: General Agriculture. This designation provides for large-scale agricultural production and associated processing, sales, and support uses (San Joaquin County 2016).

According to the California Department of Conservation California Important Farmland Finder, the project is designated as grazing land. Grazing land is land on which the existing vegetation is suited to the grazing of livestock. Adjacent to the project area is grazing land and farmland of local importance. Farmland of local importance is determined by the County's Board of Supervisors to be land that is important to the local agricultural economy (California Department of Conservation 2016).

4.2.2 Regulatory Setting

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value (California Department of Conservation 2019). In 2015, there were a total of 499,654 acres of Williamson Contracts throughout the County. Adjacent to the perimeter of the project are several Williamson Contracts to the east, north, southwest, and to the southeast.

4.2.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
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?	Less Than Significant Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	Less Than Significant Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) § 12220(g)), timberland (as defined by PRC § 4526), or timberland zoned	No Impact

Timberland Production (as defined by Government Code § 51104(g))?	
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
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?	No Impact

4.2.4 Answers to CEQA Checklist Questions

a) Would the project 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?

Less Than Significant Impact

As discussed in the Environmental Setting section, the project is in an area of local farmland importance. Project activities would encroach into designated local farmland adjacent to the Kennefick Road corridor.

There is no 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. Additionally, the project does not propose features that would result in a change in land use and would be constructed in the already existing roadway, except for the temporary bypass road that will be restored to grazing land at the end of construction. Therefore, the project would have a less than significant impact on farmland conversion.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Less Than Significant Impact

As discussed in the Environmental Setting, there are Williamson Act contracts located in the vicinity of the project area. The proposed project would improve the damaged roadway and replace the temporary culverts. The roadway improvements would not be constructed on Williamson Act contracted land, except for the temporary bypass road that will be restored to grazing land at the end of construction. Whereas this use is temporary, and the land will be restored, it would not cause removal of the land from the Williamson Act contract.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code (PRC) § 12220(g)), timberland (as

defined by PRC § 4526), or timberland zoned Timberland Production (as defined by Government Code § 51104(g))?

No Impact

The project area is not zoned for forestland or timberland land uses. Therefore, the project does not have potential to conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact

As discussed in CEQA item c) above, there are no forestland or timberland land uses, or zoning associated with the project. Because the project is to be constructed in an existing road corridor, the nature of the project has no impact on land development or conversion of land use. Therefore, the project does not have potential to conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

e) Would the project 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?

No Impact

Refer to responses a-d. There is no potential for the project to result in a permanent conversion of farmland to non-agricultural use as the project would be constructed in the existing road corridor, and there is no forestland associated with the project.

4.3 AIR QUALITY

4.3.1 Environmental Setting

The project is located within the San Joaquin Valley Air Basin (SJVAB), which includes Fresno, Kern, Kings, Madera, Merced, Napa, San Joaquin, Stanislaus, and Tulare. Air Quality regulation in the SJVAB is administered by the San Joaquin Valley Air Pollution Control District (SJVAPCD).

Air pollution within the County is among the poorest in the State. The SJAB is currently in severe non-attainment for the State one-hour ozone and extreme non-attainment for the federal eight-hour ozone standard, along with non-attainment status of particulates (PM_{10} and $PM_{2.5}$). Air pollution comes from the agricultural industry, trucking centers, gasoline dispensing, and construction (San Joaquin County 2016). The bowl-shaped Valley collects and holds emissions caused by the activities of the Valley's three million residents and their two million vehicles, as well as vehicles from other areas traveling on Highway 99 and Interstate 5. In addition, pollutants are also transported into the Valley from the Bay Area and the Sacramento Valley (SJVAPCD 2016).

The Valley's weather conditions include frequent temperature inversions, long, hot summers, and stagnant and foggy winters. These characteristics cause the San Joaquin Valley to be unusually susceptible to the formation and retention of significant air pollution problems (SJVAPCD 2016).

4.3.2 Regulatory Setting

Air Quality Standards

Air quality within the SJVAB is regulated by several agencies, the United States Environmental Protection Agency (EPA), the California Air Resources Board (CARB), and the County. These agencies develop rules, regulations, policies, and/or plans to achieve the goals and directives imposed through legislation.

The EPA is responsible for implementing the federal Clean Air Act (1970), including establishing health-based National Ambient Air Quality Standards (NAAQS) for air pollutants. NAAQS established for criteria pollutants under the Clean Air Act are ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, $PM_{10,}$ and $PM_{2.5}$, and lead. The standards set for criteria pollutants are periodically reviewed and revised as applicable.

In California, CARB is responsible for implementing the California Clean Air Act (1988) and has established California Ambient Air Quality Standards, which are to date more restrictive than the national standards. In general, the CARB works with local agencies to develop policies, guidance, and regulations related to state and federal ambient air quality standards; coordinates with local agencies on

transportation plans and strategies; and provides assistance to local districts and transportation agencies to meet air quality standards established under both the federal and California clean air acts.

Local - SJVAPCD

The SJVAPCD is the regional agency tasked with managing air quality in the region. The SJVAPCD has adopted air quality attainment plans for particulate matter, ozone, and carbon monoxide to significantly reduce emissions to obtain EPA's increasingly stringent NAAQS. The SJVAPCD has published their CEQA Guidance for Assessing and Mitigation Air Quality Impacts (SJVAPCD 2016) that are used in this analysis. The Guidance provides SJVAPCD-recommended procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements. The control measures identified in the plans and the Guidance are identified as recommendations and/or mitigation measures.

Thresholds of Significance

In March 2015, SJVAPCD adopted thresholds of significance to assist in the review of projects under CEQA that meet or exceed federal and State standards. These thresholds were designed to establish the level at which SJVAPCD believe air pollution emissions would cause significant environmental impacts under CEQA.

Table 1 presents the significance thresholds used in this analysis, including annual emissions for operational emissions and short-term construction-related emissions. A project with annual emission rates below these thresholds is considered to have a less than significant effect on air quality (SJVAPCD 2016).

Table 1. SJVAPCD Air Quality Thresholds of Significance

Criteria Air Pollutant	Construction Thresholds	Operational Thresholds	
	Annual Emissions (tons/year)	Annual Average Emissions (tons/year)	Annual Average Emissions (tons/year)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM_{10}	15	15	15
$PM_{2.5}$	15	15	15

Source: San Joaquin Valley Air Pollution Control District. 2015. CEQA Guidance. March.

Cumulative Impacts

In developing thresholds of significance for air pollutants, SJVAPCD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary.

Health Effects

Ozone, PM_{10} and $PM_{2.5}$ emissions can cause adverse health impacts. High concentrations of ozone have the potential to irritate lungs, and long-term exposure may cause lung tissue damage and cancer. Typical sources of low-altitude ozone are almost entirely formed from ROG/volatile organic compounds (VOC) and NOx in the presence of sunlight and heat. Common precursor emitters include motor vehicles and other internal combustion engines, solvent evaporation, boilers, furnaces, and industrial processes (CARB 2019).

Particulate matter PM_{10} (respirable particulate matter) and $PM_{2.5}$ (fine particulate matter) can irritate the eyes and respiratory tract and decrease lung capacity. Both are associated with increased cancer and mortality and contribute to haze and reduced visibility (CARB 2019).

If emissions generated from project construction do not exceed the applicable SJVAPCD thresholds for ozone, PM_{10} and $PM_{2.5}$, the emission of criteria pollutants for which the area is non-attainment would not be associated with adverse health impacts.

4.3.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Conflict with or obstruct implementation of the applicable air quality plan?	Less Than Significant Impact
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?	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact

d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less Than Significant Impact

4.3.4 Answers to CEQA Checklist Questions

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact

Projects that could generate emissions above the SJVAQMD recommended significance thresholds would be considered to potentially conflict with or obstruct implementation of the applicable air quality plan.

The proposed project is a roadway infrastructure repair project that involves only temporary construction activities and no operational effects to air quality. As identified by SJVAQMD, construction-related activities result in the generation of criteria air pollutants including carbon monoxide, sulfur dioxide, particulate matter (PM_{10} and $PM_{2.5}$), precursor emissions such as ROG and NO_X, and greenhouse gas (GHG) emissions from exhaust, fugitive dust, and off-gas emissions.

During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include carbon monoxide, NOx, ROG, directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants such as diesel exhaust particulate matter. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Screening

Because the project proposes demolition and restoration of a culvert and a portion of Kennefick Road as well as other construction activities, the project exceeds the screening criteria requirements for a less than significant determination without conducting additional analysis.

Emission Quantification

The SJVAQMD recommends the use of Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RoadMod) to analyze construction emissions for transportation projects.

The project schedule and equipment usage assumptions used within the model assumed the project would be constructed over a period of approximately 2 months beginning in fall of 2020 or the spring of 2021, or an estimated 40 construction workdays (based on an average of 22 workdays per month). Average daily

emissions were computed by dividing the total construction emissions by the number of construction days.

Roadway Activities

Inputs to the model included the construction year, total expected duration, proposed equipment usage, and road length. Other model inputs such as soil import and export, concrete truck trips, and asphalt truck trips were input to the model. The model predicts emissions of ozone precursor pollutants (i.e., ROG and NOx) and particulate matter (i.e., PM_{10} and $PM_{2.5}$) and emissions of CO2e (see Section 4.8, Greenhouse Gas Emissions).

Table 2 displays a summary of the average daily emissions estimates from work associated with the proposed project. The results of the RoadMod emission calculations are included in **Appendix A**. The emissions presented are based on the best information available at the time of calculations.

As seen in Table 3, the estimated total project emissions are far below the SJVAQMD recommended thresholds of significance. Therefore, impacts would be less than significant. Projects that are determined to be less than significant would not have potential to conflict with or obstruct implementation of the SJVAQMD Clean Air Plan.

Table 2. Estimated Average Daily Emissions - Construction

Scenario	ROG	NOx	Total PM_{10} (Exhaust)	Total $PM_{2.5}$ (Exhaust)	CO_2e
Maximum daily emissions (pounds per day)	3.66 lbs/day	11.44 lbs/day	20.58 lbs/day	4.65 lbs/day	12,714 lbs/day

Note: [1]Assumes 40 workdays

Table 3. Estimated Total Project Emissions - Construction

Criteria Air Pollutant and threshold of significance	ROG	NOx	Total PM_{10} (Exhaust + Dust) (82 lbs/day – exhaust only)	Total $PM_{2.5}$ (Exhaust + Dust) (82 lbs/day – exhaust only)	CO_2e (1,100 metric tons/yr)
Total Project Emissions (tons/construction project)	0.03 tons	0.09 tons	0.19 tons	0.04 tons	90.96 (MT)
Exceedance	No	No	No	No	No

b) Would the project 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?

No Impact

The project region is non-attainment for the State one-hour and federal eight-hour ozone standards, along with non-attainment status of PM_{10} and $PM_{2.5}$.

The SJVAPCD has established that if a project exceeds the identified significance thresholds, its emissions would be considered cumulatively considerable and additional analysis to determine cumulative impacts would be necessary.

As evaluated in a) above, the project does not result in an exceedance for any criteria air pollutant for which the region is in non-attainment; therefore, there would be no cumulatively considerable net increase in criteria pollutants that would adversely impact human health.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact

The SJVAPCD defines sensitive receptors to include residential dwellings, including apartments, houses, and condominiums; schools, colleges, and universities; daycare centers and hospitals, and senior-care facilities. Most of the surrounding area is undeveloped except one residential home adjacent to the project area.

Project impacts related to increased community risk can occur either by introducing a new sensitive receptor, such as a residential use, in proximity to an existing source of toxic air contaminants, or by introducing a new source of contaminants with the potential to adversely affect existing sensitive receptors in the project vicinity. The project would not introduce new sensitive receptors, nor would it introduce a new toxic air contaminant source. However, construction activity would generate dust and equipment exhaust on a temporary basis that could affect nearby sensitive receptors. Nearby sensitive receptors include the one residential home adjacent to the project area.

Although the project emissions are well below the SJVAQMD thresholds and a health risk assessment was not required for this project, the County would implement the SJVAQMD recommended *Basic Construction Mitigation Measures* as discussed in Section 3.6. Because emissions are below applicable thresholds, and measures would be implemented to minimize temporary construction impacts, impacts would remain less than significant and additional mitigation is not required.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact

Temporary construction activities associated with the project would involve the use of a variety of gasoline or diesel-powered equipment and pavement coatings emitting temporary exhaust fumes and odors. However, construction related emissions would be temporary in nature and would dissipate rapidly with increasing distance from the project site. As a result, short-term construction activities would not expose a substantial number of people to objectionable odors. Additionally, as shown in Table 1, there is no Threshold of Significance for construction-related odors impacts. Because no significant odor impacts from construction-related projects have been identified, and due to their temporary nature, the impact would be less than significant, and mitigation would not be necessary.

4.4 BIOLOGICAL RESOURCES

Evaluations of potential impacts for this section are based on a review of biological and aquatic resource studies that have been completed for the proposed project. A Biological Resources Assessment (BRA) was prepared for the project to present the biological resources present within the area and discuss the potential for impacts to those biological resources that must be considered under CEQA and other local laws and regulations.

Information in this section is based on findings of the BRA (Appendix B).

4.4.1 Environmental Setting

Botanical Resources

The project area is composed of ruderal/developed land with landscaped almond trees, a native walnut tree, and non-native grasses. Habitats adjacent to the proposed project include cultivated farmland.

Four special status plant species have the potential to occur within the project area: bristly sedge, hoary navarretia, Parry's rough tar plant, and valley brodiaea. These plant species are uncommon in San Joaquin County. The potential for these special status plant species to occur on site prior to construction activities is very low and none were observed during the March 2020 survey.

Wildlife

The habitats within and surrounding the project site support a varied assemblage of wildlife, which may move through the region or migrate seasonally. Croplands make up the land adjacent to the project area. Native wildlife utilizes croplands for many purposes depending on the crop and the time of year.

Several special status or sensitive animal species have the potential to occur at the site (Table 2, Appendix B). These include nesting birds, foraging birds, the California tiger salamander (CTS), and the California red-legged frog (CRLF). These species may use this site as home range or for migratory movements using the site infrequently. They may also forage on the site year-round or during migration.

Invasive Species

There are eight non-native plants on and adjacent to the project site as identified by the California Invasive Plant Council (Cal-IPC). Cal-IPC categorizes plants as High, Moderate, or Limited, reflecting the level of each species' negative ecological impact in California. The following species have a moderate Cal-IPC rating: ripgut brome, poison hemlock, wild oat, and soft chess. Moderate rated species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure (Cal-IPC 2020).

Aquatic Resources (including wetlands)

The project area contains an unnamed tributary flowing west through a series of three culverts under Kennefick Road. The unnamed tributary functions as an overflow channel for Dry Creek, located north of the project area. An aquatic resources delineation report, completed by NCE in March of 2020, determined this tributary is a potentially jurisdictional waters of the U.S. under Section 404 of the Clean Water Act. There are no wetlands associated with the project.

4.4.2 Regulatory Setting

Clean Water Act

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into Waters of the United States (WOUS), which includes wetlands under Sections 401 and 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act.

Section 401 requires that an applicant proposing to conduct any activity that may result in a discharge to a WOUS must apply for and secure a Water Quality Certification prior to construction activities. The Lahontan Regional Water Quality Control Board would administer the Section 401 Water Quality Certification for this project.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game (CDFG) Code (Section 3500) also prohibits the destruction of any nest, egg, or nestling.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and Section 2081 of the CDFG Code, an Incidental Take Permit from the CDFW is required for projects that could result in the “take” of a State listed threatened or endangered species. Under the CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species proposed for listing (called “candidates” by the state). Section 2080 of the CDFG Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (CDFG Code Sections 1900-1913) was created to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. CESA provided further protection for rare and endangered plant species, but the NPPA remains part of the CDFG Code.

Local – Tree Removal

San Joaquin County Municipal Code

The project would require compliance with the County of San Joaquin Code of Ordinances (San Joaquin County 2020). Specific ordinance(s) include:

- Section 10-5100 - DESTRUCTION OF PLANTS; PENALTY

  Every person except any employee of the State or of any political subdivision of the State engaged in work on any county or public road or highway while performing work under the supervision of the State or of any political subdivision of the State, who without a written permit from the Board of Supervisors willfully or negligently cuts, destroys, mutilates, or removes any tree, shrub, fern, herb, bulb, cactus, flower, or huckleberry or redwood greens, or part of any of them, growing on any county highway right-of-way, or who removes leaf mold therefrom, shall be punished by a fine of not more than two hundred dollars ($200) or by imprisonment in the County Jail for not more than six (6) months or by both.

San Joaquin County General Plan

The County's General Plan presents relevant local requirements including a discussion of street and park trees, native plant use in landscaping, and the stated goal to protect local and regional ecological resources (San Joaquin County 2016).

4.4.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
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 & Wildlife (CDFW) or U.S. Fish & Wildlife Service (USFWS)?	Less Than Significant Impact with Mitigation Incorporated

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?	No Impact
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?	No Impact
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?	Less Than Significant Impact with Mitigation Incorporated
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less Than Significant Impact
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?	No Impact

4.4.4 Answers to CEQA Checklist Questions

a) Would the project 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 & Wildlife (CDFW) or U.S. Fish & Wildlife Service (USFWS)?

Less Than Significant Impact with Mitigation Incorporated

Based on the assessment conducted for the BRA, special status species have potential to occur in the project area and be impacted by construction activities. These include nesting birds, foraging birds, the California tiger salamander (CTS), and the California red-legged frog (CRLF). The CTS is of particular concern due to nearby sighting documentation and because they are very attracted to cracks under culverts (NCE 2020a).

Although no stick nests were observed in trees on the site, it is possible that nesting habitat could be disturbed during construction, noise, and vibrations from construction equipment. This would be a potentially significant impact on migratory birds and/or birds of prey. Additionally, during excavation and installation of culverts, should CTS and CRLF be present in the drainage, significant impacts may occur.

Implementation of **Mitigation Measure BIO-1** would reduce potentially significant impacts to migratory birds and/or birds of prey to less than significant, and

Mitigation Measure BIO-2 would reduce potentially significant impacts to CTS and CRLF.

- ***Mitigation Measure BIO-1***: If any construction activities (e.g., clearing, grubbing, or grading) are scheduled during the bird nesting season (typically defined by CDFW as February 1 to September 1), the County or approved construction contractor shall retain a qualified biologist to conduct a pre-construction survey of the project area, including a 100-foot buffer, as access is available, to locate active bird nests, identify measures to protect the nests, and locate any other special status species.

  The pre-construction survey shall be conducted no more than 14 days prior to the implementation of construction activities (including staging and equipment storage). Any active nest should not be disturbed until the young have fledged or under the direction provided by a qualified biologist. Any special status species shall not be disturbed without the direction of a qualified biologist. If an active nest is found during construction, disturbance shall not occur without direction from a qualified biologist.

- ***Mitigation Measure BIO-2***: Worker Awareness Training and Biological Monitoring

  Prior to construction activities, the County or County's selected Contractor shall conduct worker awareness training for species of special concern with potential to occur onsite.

  During excavation and installation of culverts, biological monitors shall be present onsite to ensure potential CTS and CRLF individuals are not harmed during construction. If any project personnel encounter any species of special concern during project activities, work shall be suspended, CDFW notified, and conservation measures shall be developed in agreement with CDFW prior to re-initiating the activity. If during the conduct of project activities, Permittee encounters any species listed as Threatened or Endangered pursuant to the CESA, work shall be suspended, and CDFW notified. Work may not re-initiate until the Permittee has consulted with CDFW and can demonstrate compliance with CESA.

Finding: Implementation of **Mitigation Measure BIO-1** would reduce potentially significant impacts to migratory birds and birds of prey to less than significant, and **Mitigation Measure BIO-2** requiring biological monitoring during culvert replacement would avoid impacts to potential CTS and CRLF.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?

No Impact

Sensitive natural communities are those that are listed in the CDFW's California Natural Diversity Database due to the rarity of the community in the state or throughout its entire range. During the March 23 survey, no sensitive natural communities or riparian habitats were identified within or adjacent to the project area. Thus, the proposed project should have no impact on any riparian habitats or sensitive natural communities.

c) Would the project 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?

No Impact

During the aquatic resources delineation, one irrigation ditch was identified within the project area. The survey also revealed a potential wetland on the south side of the road near the culverts. It was noted that the area contained all non-native plants and that there were no signs of hydrology, hydrophytic vegetation, nor hydric soils. Based on reconnaissance-level surveys, it was determined that the project does not contain indicators of potentially jurisdictional wetlands. Thus, the project should not have a significant impact on state or federally protected wetlands.

d) Would the project 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?

Less Than Significant Impact with Mitigation Incorporated

There are no established migratory corridors associated with the project. Construction could temporarily interrupt movement of native resident or migratory wildlife species through the project site, but not significantly as it is already a roadway corridor.

As discussed above, the project area may contain migratory bird and bird of prey nesting habitat. With implementation of Mitigation Measure BIO-1, migratory species utilizing the project area for nesting would be protected against significant impacts.

Finding: Implementation of **Mitigation Measure BIO-1** would provide sufficient species protection during construction to mitigate potential adverse effects on resident or migratory species to less than significant.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less Than Significant Impact

The construction of the proposed project would avoid tree and shrub removal within the ROW and protect special status species habitat disturbance during construction. Therefore, the proposed project would not conflict with local policies and ordinances protecting biological resources.

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact

There are no known Habitat Conservation Plans or Natural Community Conservation plans associated with the project area. No impacts are anticipated, and no mitigation measures are required.

4.5 CULTURAL RESOURCES

4.5.1 Environmental Setting

A 0.9-acre area of potential effect (APE) was established for the project. It was determined the boundaries of the Area of Direct Impact (ADI) and Area of Indirect Impact (AII) are the same for this project; therefore, together they are referenced as the APE. Specifically, ground disturbing activities would directly occur within the APE's proposed improvements area, staging areas would be temporary, and there would be no vertical elements (e.g., streetlights and road signs) installed that could indirectly impact nearby historic properties.

Site Investigation

A cultural resources investigation was conducted by NCE in February 2020 to locate, describe, and evaluate cultural resources present within the APE. Results of the investigation indicate much of the APE is used for agriculture and has experienced some level of previous disturbance (e.g., cut and fill activities).

A records search was conducted at the Central California Information Center (CCIC) for resources within and in the vicinity around the APE (archival study area). The search results indicated that one historic resource and no archaeological sites were previously recorded within the APE. The historic resource is a segment of Liberty Road that was determined ineligible for the National Register. The record search referenced the Central California Traction Railroad as an associated resource of Liberty Road. However, the record does not describe the railroad further and did not record any other associated cultural resources.

Pedestrian surveys of the APE were conducted on February 28, 2020. Fieldwork was performed in accordance with federal and State of California standards.

One isolated artifact was identified during the survey. The isolated artifact is a historic salt-glazed ceramic sherd. No additional potential historic architectural resources were identified during site visits. A full accounting of the methods and findings can be found in **Appendix C, Cultural Resources Technical Report.**

4.5.2 Regulatory Setting

Federal

The National Historic Preservation Act (NHPA; 1966) defined the role and responsibilities of the federal government in historic preservation and established the National Register of Historic Places. The NHPA directs agencies to identify and manage historic properties under their control, to undertake actions that would advance the Act's provisions and avoid actions contrary to its purposes, to consult

with others while carrying out historic preservation activities, and to consider the effects of their actions on historic properties.

State

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The CRHR helps government agencies identify and evaluate California's historical resources and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC §5024.1(a)). Any resource listed in, or eligible for listing in, the CRHR must be considered during the CEQA process.

Local

The Natural and Cultural Resources Element of the General Plan sets goals and policies within the County to protect its natural and cultural resources.

4.5.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5?	Less Than Significant Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?	Less Than Significant Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	Less Than Significant Impact

4.5.4 Answers to CEQA Checklist Questions

a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines §15064.5?

Less Than Significant Impact

There are no historic resources within the APE identified as eligible for listing in the NRHP. It is noted that two architectural resources were identified in the records search as present adjacent to the APE. They include the Central California Traction Railroad and a building in the location of the Cummings house. Project construction and staging would occur only within the road ROW. Neither the railroad grade nor

the Cummings building would be directly impacted. No vertical elements (e.g. streetlights and road signs) would be installed as a part of the project. Consequently, neither the railroad grade nor the Cummings building would experience any level of indirect impact because of the project (also, roadside vegetation largely screens both resources) (NCE 2020b).

Therefore, the proposed project would have a less than significant impact on nearby historic resources.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines §15064.5?

Less Than Significant Impact

No cultural resources were identified within or adjacent to the APE. Based on the archival research and site reconnaissance conducted as part of the cultural resource's investigation, the project area has a low potential to contain undocumented cultural resources. Therefore, the project's impact on archaeological resources would be less than significant.

However, there is a remote potential to encounter unknown buried archaeological resources during construction excavation and grading activities. During Native American consultant efforts for the project, the Wilton Rancheria tribe requested Mitigation Measures be incorporated into the project to ensure potential resources encountered during construction are protected from significant impacts. **Mitigation Measure TCR-1** (see Section 4.18, Tribal Cultural Resources) would provide construction monitoring that would further minimize the low potential for destruction of or damage to previously undiscovered archaeological resources within the APE.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact

Based on the prehistoric and historic uses of the area and the prior ground disturbance within the APE, and minimal construction depths, human remains are not expected to be discovered during construction activities. However, the risk still remains to uncover buried remains during project activities. The Wilton Rancheria tribe requested mitigation be incorporated into the project to ensure protection of potential tribal remains during construction. **Mitigation Measure TCR-2** (see Section 4.18, Tribal Cultural Resources) would further minimize the low potential for the unanticipated discovery of human remains.

4.6 ENERGY

4.6.1 Environmental Setting

The project area consists of Kennefick Road located in an area surrounded by agricultural use parcels. There are no existing uses associated with the project area, such as street or traffic lighting.

4.6.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	Less Than Significant Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

4.6.3 Answers to CEQA Checklist Questions

a) Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact

The project proposes roadway repair with flood control improvement features. There are no permanent new uses of energy, such as lighting, associated with the project.

Energy for the project would be required during construction but would not require additional capacity on a local or regional scale. As discussed in the Project Description, the SJVAPCD requires implementation of construction best management practices (BMPs) that reduce use of fossil fuels and increase energy efficiency of construction vehicles. Because use of energy would be temporary during construction and would comply with SJVAPCD efficiency requirements, the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The impact would be less than significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact

The project would not result in any new need or use of energy within the project site. Implementing BMPs to reduce fossil fuel use by construction vehicles would

also be consistent with these goals and policies. Therefore, the project would not conflict the County's General Plan.

4.7 GEOLOGY AND SOILS

4.7.1 Environmental Setting

A geotechnical (Geotech) investigation, including drilling and collection sample borings, was conducted by MGE in 2020 to explore roadway subsurface conditions and suitability of the proposed project improvements. Results of the Geotech investigation indicate the roadway subgrade consists of sandy clay and clayey sand, and that 3 to 6-inch drain rock was placed as a foundation for the fill during emergency repairs to place temporary culverts at the site.

Seismicity and Faulting

San Joaquin County is a seismically active region. Active faults are those considered to have moved during the past 11,000 years, and generally only active faults are considered in evaluating seismic risk for building construction. The nearest active fault is the foothills fault system, located over 15 miles away to the east (USGS n.d.). There are no faults located within the vicinity of the project area.

Liquefaction

Liquefaction occurs when a water-saturated, cohesionless soil loses its strength and liquefies, usually due to prolonged and intense ground shaking. With loose soils, liquefaction can occur with shorter duration and less ground shaking. According to the General Plan, the project area is susceptible to liquefaction.

Geology and Soils

The project site is underlain with alluvial deposits consisting of Holocene / Pleistocene Undifferentiated Alluvium and Colluvium (Qu) and Pleistocene Middle Unit Riverbank Formation (Qr2) (MGE 2020).

Soils found in San Joaquin County are characterized by rich agricultural soils and farming activities. Within the County, there are also level, well-drained soils that are prime areas for urban development. There are two NRCS Soil Units mapped in the project area. These soil unit areas are classified as San Joaquin loam and the San Joaquin complex. Results of the Geotech investigation indicate soils within the project area are not suitable for use as engineered fill for backfill behind the culvert walls, and they do not meet Caltrans criteria for Structure Backfill.

The full Geotech report is included as **Appendix E**.

4.7.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Could the project directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving: i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	Less Than Significant Impact
ii. Strong seismic ground shaking?	Less Than Significant Impact
iii. Seismic-related ground failure, including liquefaction?	Less Than Significant Impact
iv. Landslides?	Less Than Significant Impact
b) Result in substantial soil erosion or the loss of topsoil?	Less Than Significant Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less Than Significant Impact
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?	Less Than Significant Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No Impact

4.7.3 Answers to CEQA Checklist Questions

a) Would the project directly or indirectly cause potential substantial adverse effects, including risk of loss, injury, or death involving:

i Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the

area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

Less Than Significant Impact

The project area is not within an Alquist-Priolo Earthquake Fault Zone that designates a known active fault (fault that is defined to be active if it has ruptured or shows evidence of displacement in the Holocene or the last 11,000 years) that is susceptible to fault rupture as defined by the California Geologic Survey (formerly the California Division of Mines and Geology). Although the area is seismically active, there is no evidence of faults in or within 3 miles of the project area that could be subject to rupture.

ii. Strong seismic ground shaking?

Less Than Significant Impact

The primary geologic hazard at the project area is the potential for moderate to strong ground shaking associated with nearby faults discussed in the Environmental Setting. Factors determining the characteristics of earthquake ground motion at the project area would depend upon the magnitude of the earthquake, distance from the zone of energy release, travel path, topographic effects, subsurface materials, and rupture/source mechanism.

The proposed construction has been designed to accommodate anticipated ground motions in accordance with appropriate seismic design criteria for the San Joaquin Valley; therefore, the impact would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact

Based on the General Plan, the project area is susceptible to liquefaction.

The proposed roadway construction has been designed to accommodate anticipated ground motions in accordance with seismic design criteria. Results of the Geotech investigation indicate imported engineered fill placed on existing native soil that is processed, compacted, and constructed per recommendations of the Geotech report can support the proposed culvert and embankment repairs.

Therefore, the project would not expose people to substantial adverse effects due to seismic ground shaking, and the impact would be less than significant.

iv. Landslides?

Less Than Significant Impact

The proposed project lies on relatively flat terrain with a slight slope to the west, with grades of elevation between 65 to 73 feet above mean sea level (msl). Within

the vicinity of the project, is a train track that was constructed at a higher elevation than the roadway to the south; the train track is 70 feet above msl.

Due to the project area containing relatively flat terrain, and the lack of steep slopes adjacent to the project area, there is low probability of the project area being impacted by a landslide.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact

During construction, the project may have potential to cause the loss of topsoil or cause erosion during earth moving and clearing activities. The project would implement erosion and sediment BMPs that would prevent significant soil loss or erosion during construction. Implementation of the project Storm Water Pollution Prevention Plan (SWPPP), as discussed in Section 4.10, would further reduce potential for erosion and topsoil loss during construction.

The project is intended to address existing erosion and siltation issues caused by ineffective placement of temporary emergency repair culverts. As such, the project is anticipated to have a beneficial impact on soil erosion and loss of topsoil once implemented.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact

As discussed in the Environmental Setting, the project area contains soils suitable for the project based on recommendations of the Geotech investigation. The project is proposing to increase drainage capacity beneath the road and raise the roadway section to increase drainage capacity and reduce the chance of future culvert failures. The improvements would be constructed to current standards appropriate for the soil conditions. Therefore, the project would have a less than significant impact on lateral spreading, subsidence, and liquification and would be beneficial once constructed.

d) Would the project 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?

Less Than Significant Impact

The project area is underlain with San Joaquin loam and the San Joaquin complex. The San Joaquin soil series consist of moderately well to well drained soils that formed from alluvium and granitic rock sources. These soils do not contribute as

being an expansive soil. Therefore, the project would not create substantial direct or indirect risks to life or property.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact

The project does not propose the use of septic tanks and would not require use of alternative wastewater disposal services; therefore, there would be no impact from these systems.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact

The Central California Central Information records search revealed there are no previously recorded or existing paleontological resources identified within the project area. No unique geological resources were identified during review of geologic resources within the project boundary, and no fossiliferous geologic structures underly the project site. Therefore, the project would not directly or indirectly destroy any unique paleontological resources or unique geologic feature.

4.8 GREENHOUSE GAS EMISSIONS

The term greenhouse gas is used to describe atmospheric gases that absorb solar radiation and subsequently emit radiation in the thermal infrared region of the energy spectrum, trapping heat in the Earth's atmosphere. Greenhouse gases of concern include carbon dioxide, methane, nitrous oxide, and fluorinated gases. Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases have a broader, global impact.

Greenhouse gases differ by the amount of heat each trap in the atmosphere, known as global warming potential. Carbon dioxide is the most significant greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called "carbon dioxide equivalent" (CO2e). The global warming potential of carbon dioxide is assigned a value of 1, and the warming potential of other gases is assessed as multiples of carbon dioxide. Generally, estimates of all greenhouse gases are summed to obtain total emissions for a project or given period, usually expressed in metric tons or million metric tons CO2e.

4.8.1 Environmental Setting

GHG emissions within the County are emitted in a variety of sectors, including transportation, electricity, industry, commercial and residential, agriculture, recycling and waste, and high global warming potential sources like refrigerants, chlorofluorocarbons, and electrical insulation (San Joaquin County 2016). The County has been trying to reduce the community greenhouse gas emissions by 15 percent below 2005 levels by 2020 and has a goal to reduce GHG emissions by 40 percent and 80 percent below reduced 2020 levels by 2035 and 2050, respectively (San Joaquin County 2016).

4.8.2 Regulatory Setting

Federal

The EPA has no regulations or legislation enacted specifically addressing GHG emissions reductions and climate change at the project level. In addition, the EPA has not issued explicit guidance or methods to conduct project-level GHG analysis.

State

The State of California has taken several legislative steps including Assembly Bills (AB) and Executive Orders (EO) to reduce increases in GHG emissions. CARB is the lead agency in the development of reduction strategies for greenhouse gases in California (CARB 2018). California's GHG reduction requirements aim to reduce vehicle miles traveled, thereby improving air quality by reducing GHG emissions from automobiles.

Regional - Construction Emissions

The SJVAQMD does not have an adopted Threshold of Significance for construction related GHG emissions. For operational, on-going emissions, the significance threshold is 1,100 metric tons per year (Table 4). Sources of construction-related greenhouse gases only include exhaust, for which the SJVAQMD recommends following the same detailed guidance as for criteria air pollutants and precursors (SJVAQMD 2012).

Table 4. Recommended GHG Threshold - Construction

Greenhouse Gas Emissions	
Land Use Projects – direct and indirect emissions	Compliance with a Qualified Greenhouse Gas Reduction Strategy OR 1,100 metric tons annually or 4.6 metric tons per capita (for 2020) Adjusted to 660 metric tons annually or to 2.6 metric tons per capita (for 2030) *

SJVAQMD relies on the lead agency to quantify and disclose emissions that would occur during construction and make a determination of significance of greenhouse gas emissions in relation to meeting Assembly Bill (AB) 32 greenhouse gas reduction goals (SJVAQMD 2012). They also recommend implementing BMPs to reduce greenhouse gas emissions during construction.

4.8.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

4.8.4 Answers to CEQA Checklist Questions

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact

The project would result in short-term, temporary increases in GHG emissions during construction due to equipment and vehicle use at the site. For a construction period of 40 working days, heavy equipment such as excavators, haul trucks, as well as worker commutes would generate exhaust. Emissions from construction equipment powered by gasoline and diesel engines would include CO, NOx, VOCs,

directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants such as diesel exhaust particulate matter.

Based on the air quality emissions analysis (Section 3, Table 2), estimated total project construction CO2e would be 90.96 metric tons, which is significantly less than the annual 1,100 metric tons thresholds for operational emissions. However, SJVAAQMD only provides thresholds for land use operational emissions, and not for construction emissions. Best management practices are recommended for reducing construction emissions. Results of the emissions analysis are included in **Appendix A**.

Because the project does not propose a new, long-term operational source of GHGs, project effects would be considered less than cumulatively significant, and mitigation would not be required.

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact

Given that emissions would be short term (over the course of 40 days), increases in GHGs that could be attributed to the project would not interfere with adopted goals and policies to reduce GHGs. The GHG emissions generated during construction would not be considered significant and would not limit the State's ability to attain the reduction targets identified in AB 32, the Scoping Plan, or Senate Bill (SB) 32. Additionally, implementation of the project would not conflict with any of the GHG emission policies within the County's Climate Action Plan. Therefore, the proposed project does not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

4.9 HAZARDS AND HAZARDOUS MATERIALS

A material is considered hazardous if it appears on a list of hazardous materials prepared by a Federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency.

4.9.1 Environmental Setting

NCE conducted a search of the project site on the State Water Resources Control Board (SWRCB) GeoTracker website and the Department of Toxic Substances Control EnviroStor website. The search revealed that most hazardous waste sites in the region (pursuant to Government Code 65962.5) are located within cities adjacent to Highway 99. No sites in the project vicinity were identified on EnviroStor. The SWRCB GeoTracker website revealed no hazardous sites within a 1-mile vicinity of the project site.

4.9.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Less Than Significant Impact with Mitigation Incorporated
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	No Impact
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?	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	No Impact

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	No Impact

4.9.3 Answers to CEQA Checklist Questions

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact

The use of hazardous materials at the project area is anticipated to be limited to fuels and other maintenance-related chemicals to run equipment machinery. In addition, new concrete and asphalt materials would be used to construct the new roadway and old materials would be removed from the existing roadway.

Transport and use of hazardous materials are anticipated to be minimal. The use, storage, and management of fuels and other vehicle-related chemicals as well as construction materials would be managed according to the onsite SWPPP. For example, the SWPPP requires that equipment fueling and maintenance, if performed at the job site, must be performed in a designated area utilizing secondary containment with a spill kit nearby. Rinsing of concrete tools and chutes would also be performed according to the SWPPP, including utilizing concrete washouts and/or requiring that wastewater be kept within the concrete truck and hauled offsite for recycling. No disposal of hazardous materials is anticipated as part of this project, and no dewatering is required during construction.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact with Mitigation Incorporated

As described above (a), hazardous materials used as part of the proposed project is expected to be minimal and the required on-site SWPPP would manage use of fuels and chemicals. Should a spill occur, spill procedures in the SWPPP would be followed. The project's potential to release hazardous materials into the environment is less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact

The nearest school is Oak View Elementary School, located approximately 2 miles southeast of the project site. As discussed above, hazardous materials used as part of the proposed project are anticipated to be limited. Construction-related vehicles

would produce routine emissions that would be temporary and less than significant. For a discussion on air quality, see Section 4.3.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact

EnviroStor is the Department of Toxic Substances Control's data management system for tracking cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further, also known as the Cortese List. As noted above, no sites in the project vicinity were identified on EnviroStor.

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?

No Impact

The nearest airport, Lodi Airport, is over 14 miles from the project site. The project area is not located within a comprehensive land use planning area, and the project does not involve habitable improvements that would be sensitive to airport operations.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact

The project proposes to permanently repair Kennefick Road damaged by severe flooding. Emergency response and evacuation would be maintained throughout construction by implementing a temporary bypass road. Once constructed, the project would have a beneficial effect by improving access along Kennefick Road and reducing flooding in the area.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact

The project involves the replacement of the damaged road and culverts. Roadway access would be provided at all times. The project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

4.10 HYDROLOGY AND WATER QUALITY

4.10.1 Environmental Setting

A Drainage Study was conducted by NCE in 2020 to evaluate site hydrology and evaluate hydraulic parameters required to improve the Kennefick Road crossing to convey the peak flow from the 5-year/7-day regional precipitation event with no roadway overtopping while also having no negative impact on the FEMA regulatory 100-year water surface elevation (WSEL). The following information is based on this study.

The project site contains an unnamed tributary that crosses Kennefick Road just north of Liberty Road. It is tributary to Dry Creek, located 1.4 miles northeast. The crossing, which originally consisted of two 18-inch corrugated metal pipes (CMPs) under a dipped roadway profile, floods frequently, rendering the road impassable (NCE 2020d).

During the initial emergency repairs, two 18-inch equivalent arch CMPs and a 12-inch circular CMP were installed in the tributary. However, review of subsequent survey data, when compared to data from a 2014 FEMA flood insurance study in the area, suggests that the emergency repair culverts are approximately 1.5 feet higher than the original culverts. The data also suggest that the flood event and/or activities since that date have deposited a significant amount of sediment downstream of the road. This has resulted in the downstream slope being adverse or flat for approximately 2,000 feet downstream.

Data from a local gage suggests that the 2017 flood resulted from regional precipitation that was close to the 5-year/7-day event return interval. Based on deposition evidence from the event, the flow over the road was close to 500 cfs. The capacity of the current culverts is only 30 cfs.

Flood Hazards

The project lies within a Special Flood Hazard Area, Zone AE (where a base flood elevation has been determined), with a base flood elevation of 70.91 feet in North American Datum of 1988. As defined by FEMA, this area would be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year (i.e., 100-year flood).

Existing Drainage Patterns

The unnamed tributary flows 2.5 miles west and discharges into Dry Creek.

Fifty feet east of Kennefick Road, the unnamed tributary crosses beneath a Central California Traction Company Railroad track via a railroad bridge with a 20-foot by 13-foot opening with a one-foot wide pier. Flared headwalls downstream of the railroad bridge create a 30-foot wide channel between the railroad and roadway

crossing. The FEMA AE Zone floodplain suggests that the crossings create backwater flooding.

Review of the FEMA hydrologic and hydraulic models for Dry Creek and the unnamed tributary show that peak flows on the unnamed tributary are a direct result of overtopping of Dry Creek into the floodplain of the unnamed tributary at two locations upstream of the Kennefick Road crossing.

4.10.2 Regulatory Setting

Federal

Clean Water Act and NPDES Permit

Section 402 of the CWA requires NPDES permits for stormwater discharges from municipal storm drain systems. The Water Board issues the municipal stormwater NPDES permits to address stormwater impairments and recommend actions. Stormwater discharges into the County's municipal stormwater drainage system are regulated by the Central Valley's RWQCB under the Municipal Regional Stormwater NPDES Permit, Order No. R2-2015-0049.

Section 303(d) of the CWA authorizes the EPA to assist jurisdictions in listing impaired waters and developing Total Maximum Daily Loads (TMDLs) for these waterbodies. A TMDL establishes the maximum levels of each pollutant allowed in a waterbody and serves as the starting point or planning tool for restoring water quality. In California, the State and regional water boards assess water quality monitoring data for the state's surface waters every two years to determine if they contain pollutants at levels that exceed protective water quality standards. Water bodies and pollutants that exceed these standards are placed on the state's 303(d) List. The determination is governed by the Water Quality Control Policy for developing California's Clean Water Act Section 303(d) List. Currently, the 2016 303(d) list is in effect.

Federal Emergency Management Agency

FEMA implements the National Flood Insurance Program. Per Section 60.3(d)(3) of the National Flood Insurance Program regulations regarding floodplain management, the placement of fill, new construction, substantial improvements, and other development within the adopted regulatory floodway cannot result in any increase in flood levels during occurrences of the base flood discharge (100-year event).

State

Statewide Construction General Permit

Because the proposed project would disturb more than 1 acre, it is subject to the statewide Construction General Permit Order 2009-0009-DWQ, which regulates stormwater leaving construction sites. Under this order, site owners must notify the state and implement a SWPPP prepared by a Qualified SWPPP Developer. The SWPPP must outline measures that would protect hydrology and water quality resources, including groundwater, from negative impacts during construction through implementation of BMPs and monitoring the effectiveness of BMPs. This permit is administered by the State Water Resources Control Board and overseen by the RWQCB.

4.10.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	Less Than Significant Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: i. result in substantial erosion or siltation on- or off-site;	Less Than Significant Impact
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	Less Than Significant Impact
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	No Impact
iv. impede or redirect flood flows?	Less Than Significant Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	Less Than Significant Impact

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less Than Significant Impact

4.10.4 Answers to CEQA Checklist Questions

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less Than Significant Impact

As discussed in the Environmental Setting, the existing condition of the drainage and damage due to back ponding and flooding has caused erosion and sediment deposition within the unnamed tributary, affecting downstream water quality as well.

Overall, the project proposes features that would have a beneficial effect on water quality. The project would construct flood control improvements that are able to convey the peak flow from the 5-year/7-day regional precipitation event with no roadway flow overtopping, while also having no negative impact on the FEMA regulatory 100-year water surface elevation (WSEL). Therefore, the proposed project would result in an improvement in water quality within the stream and stormwater runoff.

During the construction phase, the project would be subject to the requirements of the Construction General Permit, which requires implementation of a SWPPP, and various monitoring and reporting activities, depending on the project's risk level.

Because the project would not adversely affect water quality during the construction phase and would improve water quality and flow through the reconstruction of the roadway and culverts, impacts would be less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

No Impact

The project would not use groundwater for water supply. The project does not propose to increase the amount of existing pervious and impervious areas. Therefore, the proposed project would not have a substantial effect on groundwater recharge or management of the groundwater basin.

c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in substantial erosion or siltation on or off-site?

Less Than Significant Impact

The proposed project would not significantly alter existing drainage patterns; existing drainage patterns would be improved by constructing flood control features within Kennefick Road that allow for the drainage patterns of the unnamed tributary to be maintained. Additionally, implementation of the project is anticipated to remedy existing erosion and sedimentation deposits due to post-disaster flow patterns and flood damage and would reduce further erosion under the bridge abutment that has been caused by the emergency road repair done in 2017.

During construction, the project may have potential to cause erosion during earth moving and clearing activities. The project would implement erosion and sediment BMPs that would prevent significant soil loss or erosion during construction. Implementation of the project SWPPP would further reduce potential for erosion during construction.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact

The project does not propose features that would increase runoff at the site, such as an increase in paved surfaces. As discussed in the Environmental Setting, hydraulic analysis conducted by NCE determined the new concrete box culverts are appropriately sized to capture surface runoff at the site that is discharging water to the unnamed tributary. Construction of the new culverts would also improve stormwater management of runoff to ensure discharge of flow into the creek and minimize risk of flooding.

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?

No Impact

As discussed throughout this section, implementation of the project would result in an improvement to flood control, water quality, and stormwater management and would have no negative effect to stormwater drainage systems.

iv) Impede or redirect flood flows?

Less Than Significant Impact

NCE conducted a hydraulic analysis to model scenarios of existing pre-project conditions within the unnamed tributary versus proposed project conditions of the new concrete box culvert design.

Results of the analysis indicate that the project would result in a flood control improvement compared to the existing condition. The proposed project would convey the peak flow from the 5-year/7-day regional precipitation event with no

road overtopping, increasing capacity from 30 cfs to 500 cfs while also having no negative impact on the water surface elevation. Impacts are anticipated to be beneficial.

d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?

Less Than Significant Impact

Flood Hazard

As discussed in the Environmental Setting, the project lies within FEMA Zone AE, a special flood hazard area.

The proposed culvert improvements have been designed to comply with FEMA and County Code regulations requiring that the channel and culvert be sized to convey the flows, while ensuring that the flows of the 100-year event would be managed to minimize damages and overtopping. Because project features were designed to comply with these requirements, the area is not anticipated to become inundated or release pollutants during a 5- to 7-year flood event and the project would reduce flood hazards.

Tsunami and Seiche Hazard

The project area is not located near the coast or large body of water and therefore would not be impacted by a tsunami. A seiche is a standing wave oscillating in a landlocked body of water, such as a lake. Because the project area does not contain landlocked bodies of water, there would be no risk associated with seiche hazard.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact

The Central Valley Regional Water Quality Control Board sets forth water quality standards for the surface and ground waters of the region. The project is not anticipated to conflict with water quality standards and would therefore not obstruct implementation of a water quality control plan.

The State Sustainable Groundwater Management Act requires local agencies of groundwater basins in high- or-medium priority areas to implement sustainable groundwater management plans. The project area is within a high priority groundwater basin due to declining groundwater level and salt intrusion. The project is not anticipated to impact groundwater and would therefore not obstruct implementation of a groundwater management plan.

4.11 LAND USE AND PLANNING

4.11.1 Environmental Setting

The project area is located within San Joaquin County, California. The County is divided into zoning districts that correspond with General Plan land use designations. The project area is zoned as AG-40: General Agriculture.

The proposed project would primarily be constructed within the County ROW. Potential areas for temporary construction staging would include either the adjacent residential parcel or the adjacent railroad parcel.

4.11.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Physically divide an established community?	No Impact
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?	Less Than Significant Impact with Mitigation Incorporated

4.11.3 Answers to CEQA Checklist Questions

a) Would the project physically divide an established community?

No Impact

The project would not physically divide an established community. The overall purpose of the project is to repair the roadway that was substantially damaged during a storm event in 2017 and maintain access for the community, farms, residences, and businesses north of Liberty Road. The project would be beneficial for community connectivity.

b) Would the project 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?

Less Than Significant Impact with Mitigation Incorporated

Construction activities would occur primarily within county-owned ROW and staging areas in the adjacent parcels.

The project would comply with the County's land use plan, policies, and regulations adopted for the purpose of avoiding or mitigating environmental effects by implementing controls to protect or avoid impacts to sensitive resources and

mitigating any impacts to less than significant levels, as described in the other sections of this initial study.

Given that staging areas would be placed in adjacent parcels to roadway during construction, the County will obtain permission from the owners of the adjacent parcels before construction activities occur as required by law.

4.12 MINERAL RESOURCES

4.12.1 Environmental Setting

Minerals are naturally occurring chemical elements or compounds, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat, and oil-bearing rock, but excluding geothermal resources, natural gas, and petroleum.

Mineral production in San Joaquin County has consisted primarily of sand and gravel aggregate, with limited mining of peat, gold, and silver. In the past, placer gold deposits have been found in many San Joaquin County rivers and creeks. These deposits were dredged for gold by independent operators in the years following the 1849 gold rush. Presently, only mining operations related to soil and gravel aggregate exist within the County (San Joaquin County 2016).

4.12.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	No Impact
b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	No Impact

4.12.3 Answers to CEQA Checklist Questions

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact

According to the State Mining and Geology Board and the General Plan, there are no state or regionally valuable mineral resources within the project boundary. The proposed project would therefore not result in the loss of a known mineral resource.

b) Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

No Impact

According to the State Mining and Geology Board and the General Plan, there are no resource recovery sites associated with the project; therefore, there would be no impact.

4.13 NOISE

4.13.1 Environmental Setting

Noise is defined as a sound or series of sounds that are intrusive, objectional, or disruptive to daily life. Noise levels are measured to regulate ambient noise and protect residents of the County from exposure to excessive noise. Different land uses have different acceptability levels in terms of noise disturbance. For example, industrial uses have a higher noise threshold than residential uses. Noise standards provide a means of assessing exposure and compatibility based on specific uses. The County's significant noise generators include State highways and local roads, aircraft operations, commercial and industrial uses, agricultural operations, active recreation areas, and mining operations (San Joaquin County 2016).

Within the project area, existing sources of noise include motor vehicles from county roads and agricultural operations within the area.

4.13.2 Regulatory Setting

Local

The County's Noise Ordinance establishes noise limits and allowable hours for construction activities. Chapter 9-1025.9 of the Municipal Code states that noise sources associated with construction, provided such activities do not take place before 6 a.m. or after 9 p.m. on any day are exempt from the noise ordinance.

4.13.3 CEQA Checklist Summary

Would the project result in:

CEQA Question	Impact Determination
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?	Less Than Significant Impact
b) Generation of excessive groundborne vibration or groundborne noise levels??	Less Than Significant Impact
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	No Impact

4.13.4 Answers to CEQA Checklist Questions

a) Would the project result in 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?

Less Than Significant Impact

Noise levels are measured to regulate ambient noise and protect people from exposure to excessive noise. Different land uses have different acceptability levels in terms of noise disturbance. For example, industrial uses have a higher noise threshold than residential uses. Noise standards provide a means of assessing exposure and compatibility based on specific uses.

During construction, workers and persons residing in the area (i.e., residential homes) would be temporarily exposed to minor ground borne vibration and noise generated by construction equipment, such as compaction equipment, excavators, backhoes, and loaders. In addition, the property that borders the project area to the south contains cattle that may be disturbed by construction noise; however, cattle are not penned in the area and have the space to move away from any temporary source of noise. No pile driving is anticipated for the project, which is the primary source of ground borne vibrations and noise during construction.

Because generation of ambient noise would be temporary during construction, and construction equipment noise from the project is exempt from the Noise Ordinance thresholds provided such activities do not take place before 6 a.m. or after 9 p.m. on any day, the project would not result in ambient noise levels in excess of established standards set forth in the Noise Ordinance.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact

Vibration is described in terms of frequency and amplitude. Unlike sound, there is no standard way of measuring and reporting amplitude. Construction vibration is generally associated with pile driving and rock blasting. Occasionally, large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. Construction activities would result in intermittent exposure of ground borne vibration to the project area. However, this impact to the project area would be temporary. Because impacts would be temporary and would comply with the County Noise Ordinance and General Plan Noise policies, the impacts would be less than significant.

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

No Impact

The nearest airport, Lodi Airport, is over 14 miles from the project site. The project area is not located within an airport land use plan.

4.14 POPULATION AND HOUSING

4.14.1 Environmental Setting

As of 2018, the County had an estimated population of 732,212 and an estimated housing stock of 241,055 dwelling units (California Department of Finance 2014-2018). Kennefick Road provides the only access to agricultural land and single-family homes north of the intersection of Kennefick and Liberty Road.

4.14.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
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)?	No Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No Impact

4.14.3 Answers to CEQA Checklist Questions

a) Would the project 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)?

No Impact

The project would increase flow capacity of the culvert crossing under Kennefick Road to provide safe public access to the agricultural community located north of the intersection. The proposed project would not increase lanes and therefore would not induce population growth directly by adding new housing or commercials uses, or indirectly by adding new infrastructure. Therefore, there would be no impact.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact

Implementing the proposed project would not influence population growth, either directly or indirectly. The project does not propose any removal or construction of features that would result in the displacement of persons and would therefore not require construction or replacement housing elsewhere. There would be no impact.

4.15 PUBLIC SERVICES

4.15.1 Environmental Setting

Fire Protection

The Liberty Fire District serves the project area at Kennefick Road. The closest station to the proposed project area is the Liberty Fire District station, located approximately 4.2 miles to the southeast of the project area.

Police Protection

The San Joaquin County Sheriff Department serves the project area at Kennefick Road. The proposed project area is within District Beat 2. The Patrol division has 138 deputies that provide law enforcement services to the community. In case of emergencies, the community can reach an on-call first responder on a 24-hour basis.

4.15.2 CEQA Checklist Summary

Would the project result in:

CEQA Question	Impact Determination
a) Would the project result in substantial adverse physical impacts associated with the need and/or provision of new or physically altered governmental services and/or facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services? i) Fire protection? ii) Police protection? iii) Schools? iv) Parks? v) Other public facilities?	No Impact

4.15.3 Answers to CEQA Checklist Questions

a) Would the project result in substantial adverse physical impacts associated with the need and/or provision of new or physically altered governmental services

and/or facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services?

i) Fire protection?

ii) Police protection?

iii) Schools?

iv) Parks?

v) Other public facilities?

No Impact

The proposed project would elevate the road and increase the flow capacity of the culvert crossing, in a manner that guards against future flooding and road failure.

The project would not increase dwelling units or road capacity and thus involves no increase in demand for public services such as schools, libraries, or parks.

During construction, the project may have a negligible increase in emergency services demand to protect construction equipment or personnel; this potential demand increase can be adequately served by existing services. There are adequate fire and police services to protect the construction sites and construction workers without affecting emergency services ratios, response times or other performance objectives. Therefore, the proposed project would not require new or physically altered governmental services and/or facilities to maintain acceptable service ratios, response times, or other performance objectives.

4.16 RECREATION

4.16.1 Environmental Setting

San Joaquin County contains a variety of natural assets, resources, and recreational areas. The Delta is considered to be the County's single most important recreational asset, along with a number of other recreational attractions including parks, rivers, and hiking, biking, and equestrian trails (San Joaquin County 2016). Parklands within the County range from large-scale resource conservation areas to public parks.

There are no designated recreational areas within the project area or the surrounding vicinity.

4.16.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) 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?	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	No Impact

4.16.3 Answers to CEQA Checklist Questions

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?

No Impact

The project is a roadway repair and flood control improvement project. The project does not include recreational features or facilities or require construction or expansion of recreational facilities because the project does not influence population growth. Population growth is the main driver for new or expansion of facilities; therefore, there would be no effect on recreation and no subsequent environmental impact from construction or expansion activities.

b) Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact

The project does not include recreational facilities or improvements or induce population growth that would lead to an increased demand for recreational services; therefore, there is no potential for the project to cause a significant environmental impact from such improvements.

4.17 TRANSPORTATION

4.17.1 Environmental Setting

The proposed project contains 245 feet of the existing County owned Kennefick Road. Kennefick Road is a two-lane, 20-foot wide north-south roadway serving an agricultural area of San Joaquin County, located east of State Highway 99 and southeast of the City of Galt. Kennefick Road dead ends north of the project site and provides the only access to residences, farms, and businesses located north of its intersection with Liberty Road.

After the 2017 storm event washed out the existing culverts and road section, emergency repairs were performed on the road. New culverts, two 18-inch CMPs and a 12-inch circular CMP asphalt pipe were laid over in a similar position to the previously existing roadway alignment as a temporary emergency repair to maintain access north of the project site.

4.17.2 Regulatory Setting

Local and Regional Transportation

The Public Facilities and Services Element, Transportation and Mobility section complies with the State of California mandate that general plans include a transportation element regulating the location and extent of transportation modes, accessways, and thoroughfares in the County (California Government Code Section 65302b). As required by state law, the Transportation element correlates with the Land Use Element of the General Plan.

4.17.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	Less Than Significant Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	Less Than Significant Impact
c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	No Impact
d) Would the project result in inadequate emergency access?	Less Than Significant Impact

4.17.4 Answers to CEQA Checklist Questions

a) Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact

The proposed project plans to reduce the chance of future culvert failures and would mitigate damages from the flood event in 2017 by redesigning the roadway and culverts with flood control improvements. The project would provide a safe and stable access route for residents, businesses and emergency services affected by the previous disaster and would construct a temporary bypass road to maintain a through travel-way during construction. The project does not propose new transportation facilities. The project does not propose to add any additional lanes. Thus, the project would not conflict with any plan, ordinance, or policy regarding transit, roadway, bicycle, and pedestrian circulation systems.

b) Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?

Less Than Significant Impact

CEQA Guidelines §15064.3, subdivision (b) pertains to the use of VMT to analyze transportation impacts. The Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018) provides technical recommendations regarding the assessment of VMT, non-binding thresholds of significance, potential exemptions or presumptions of less-than-significant CEQA impacts, and mitigation measures.

Section F of the Technical Advisory notes that maintenance activities and the installation of operational features such as upgrading traffic control devices, adding turn pockets, or installing traffic calming measures are "unlikely to lead to a substantial or measurable increase in vehicle travel." As noted in CEQA Guidelines Section 15064.3(b)(2), transportation projects "that reduce, or have no impact on, vehicle-miles traveled should be presumed to cause a less that significant transportation impact."

The proposed project would not increase the number of travel lanes over existing conditions and proposes no change in land use. Construction equipment and worker vehicles would generate vehicle trips over the 40 days of construction, which would be temporary and a minor addition to existing VMT. Therefore, the project would have a less than significant impact on VMT.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact

The primarily purpose of the project is to reconstruct the damaged roadway with flood control improvements. The proposed project does not add additional lanes and would not change the realignment. The roadway would be raised one to two feet from existing conditions to mitigate for ponding on the roadway in the depressional dip. The road would be constructed while maintaining access to Kennefick Road by constructing a temporary bypass lane around the construction area. The project would be beneficial by repairing the road and providing flood control improvements to prevent against future flooding hazards and maintaining access to the north.

d) Would the project result in inadequate emergency access?

Less Than Significant Impact

The proposed project plans to provide a safe and stable access route for residents, businesses, and emergency services affected by the previous disaster. Kennefick Road is the only access to homes and businesses north of the project area. Once the project is completed, it would lessen the chance for culvert failure and flooding and would result in safer access to and from the area during precipitation or flooding events.

A temporary bypass road would be in place prior to construction to maintain access to the north. The contractor would have to provide and submit a construction staging and traffic control plan to show that access can be provided. Once Kennefick Road has been reconstructed, the temporary bypass road would be decommissioned, and the area restored.

4.18 TRIBAL CULTURAL RESOURCES

4.18.1 Environmental Setting

Ethnographic literature indicates the region surrounding the proposed APE was inhabited by the Penutian-speaking Northern Valley Yokuts territory who encompassed most of the County and is roughly bounded by the foothills of the Sierra Nevada on the east, the crest of the Diablo Range on the west, the north bend of the San Joaquin River to the south, and the Calaveras and Mokelumne Rivers to the north (City of Lodi 2010; ESA 2014; Impact Sciences, Inc. 2014).

During prehistoric times, it is inferred that part of the County was occupied by Miwok. The Miwok consist of five distinct cultural groups, each of which spoke a different Miwokean language (Kroeber 1925; Levy 1978). The Northern Sierra Miwok occupied the foothill and mountain reaches of the Mokelumne and Calaveras rivers and the Plains Miwok occupied portions of the Central Valley including the lower reaches of the Mokelumne and Cosumnes Rivers and the banks of the Sacramento River, from Rio Vista to Freeport and south nearly to Stockton. Unfortunately, most ethnographic information for Native Americans in the Central Valley was gathered as second-hand accounts from other tribes. During the 1800s, disease and other forms of cultural disruption destroyed Native American tribal cultures in the Central Valley. For example, the Northern Valley Yokuts were virtually wiped out by malaria and smallpox epidemics in the 1830s.

The Cultural Resource Report prepared for the project is included as **Appendix C** and includes information on Native American outreach for this project.

4.18.2 Regulatory Setting

Native American Consultation

In accordance with Assembly Bill 52, as identified in the PRC Section 21080.3.1(b)(2) of CEQA and Section 106 of the National Historic Preservation Act, Native American tribes (tribes) identified by the NAHC must be invited to consult on projects.

4.18.3 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC § 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	Less Than Significant Impact with Mitigation Incorporated

object with cultural value to a California Native American tribe, and that is: i. Listed or eligible for listing in CRHR, or in a local register of historical resources as defined in PRC § 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 PRC § 5024.1. In applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less Than Significant Impact with Mitigation Incorporated

4.18.4 Answers to CEQA Checklist Questions

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC §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 CRHR, or in a local register of historical resources as defined in PRC § 5020.1(k)?

Less Than Significant Impact with Mitigation Incorporated

On behalf of the County, NCE requested a Sacred Lands Search from the Native American Heritage Commission (NAHC) on February 25, 2020. The letter requested a contact list for regional tribes and a record search of their Sacred Lands File for the project area's archival study area. A response was received from the NAHC on March 3, 2020, indicating the search was negative for sacred lands in the area. Additionally, as discussed in Section 4.5 – Cultural Resources, there are no known historical resources associated with the project.

Inquiry letters were mailed on County letterhead to the tribes identified by NAHC on March 24, 2020. Responses were received from the United Auburn Indian Tribe, the Wilton Rancheria, and the Buena Vista Rancheria. Although no known resources were identified, the Wilton Rancheria requested the following mitigation measures be added for the proposed project in the event previously buried cultural resources are encountered during project grading and excavation activities:

- **Mitigation Measure TCR-1: Implement Monitoring and Awareness Training.** To minimize the potential for destruction of or damage to existing or previously undiscovered burials, archaeological and tribal cultural resources and to identify any such resources at the earliest possible time during project-related earthmoving activities, County and its construction contractor(s) would implement the following measures:

a. Paid Native American monitors from culturally affiliated Native American Tribes shall be invited to monitor the vegetation grubbing, stripping, grading or other ground-disturbing activities in the project area to determine the presence or absence of any cultural resources. Native American representatives from cultural affiliated Native American Tribes act as a representative of their Tribal government and shall be consulted before any cultural studies or ground-disturbing activities begin.

b. Native American representatives and Native American monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted or slowed if such sites or objects are identified within the direct impact area. Only a Native American representative can recommend appropriate treatment of such sites or objects.

c. If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work would stop in that area and within 100 feet of the find until an archaeologist who meets the Secretary of the Interior's qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the Caltrans, the SHPO, and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or other actions determined during consultation.

d. A consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation shall be developed in coordination with interested Native American Tribes. The brochure would be distributed, and the training would be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program would include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program would also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and would outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program would also underscore the

requirement for confidentiality and culturally appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values.

- **Mitigation Measure TCR-2:** In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities, the construction contractor or the County, or both, shall immediately halt potentially damaging excavation in the area of the burial and notify the County coroner and a qualified professional archaeologist to determine the nature of the remains. The coroner shall examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands, in accordance with Section 7050(b) of the Health and Safety Code. If the coroner determines that the remains are those of a Native American, he or she shall contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). After the coroner's findings are presented, the County, the archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed.

***Finding*:** Implementation of **Mitigation Measures TCR-1 and TCR-2** would reduce potentially significant impacts to Tribal Cultural Resources during construction activities to less than significant.

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 PRC § 5024.1. In applying the criteria set forth in subdivision (c) of PRC § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant Impact with Mitigation Incorporated

Refer to discussion to CEQA question i above. No resources are known to exist for the project area; however, should resources be unearthed during construction, mitigation measures are in place to ensure significant impacts do not occur.

4.19 UTILITIES AND SERVICE SYSTEMS

4.19.1 Environmental Setting

Water, Sewer, Strom Drain and Recycling services

The City of Galt Utility Division provides water, sewer, storm drain services, and refuse and recycling service to the project area.

The Utility Division provides wastewater collection, treatment, and disposal services for the community of Galt and surrounding area. The wastewater plant is currently operating at approximately 2.2 million gallons per day (mgd) with the plant's capacity being 3.0 mgd. The treated wastewater is recycled for irrigation of crops during the dry season of May through October and discharged to Laguna Creek during the wet season of November through April.

Natural Gas and Electric Service

Natural Gas and electric services within the project area are primarily provided by Pacific Gas and Electric Company (PG&E). PG&E and other utilities in the state are regulated by the California Public Utilities Commission.

4.19.2 CEQA Checklist Summary

Would the project:

CEQA Question	Impact Determination
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	No Impact
c) Result in a determination by 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?	No Impact
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??	Less Than Significant Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact

4.19.3 Answers to CEQA Checklist Questions

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact

The project is an infrastructure improvement and does not require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, or the construction or relocation of such facilities; there would be no impact.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact

Repair of Kennefick Road would have no impact on water usage. The project does not propose features that would require water services; therefore, there would be no impact.

c) Would the project result in a determination by 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?

No Impact

The project does not involve direct or indirect discharge of wastewater to sanitary sewer or on-site septic systems. The project would not utilize the sanitary sewer system for dewatering. No demand for wastewater treatment or facilities would occur as a result of the project. The project would not create wastewater and therefore would have no impact on a wastewater treatment operator.

d) Would the project 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?

Less Than Significant Impact

Construction activities associated with the project would generate construction waste requiring disposal at area landfills. Waste generated during project construction would be limited to vegetation debris, asphalt, road subgrade, and concrete. Waste generation would be temporary during construction and would not reduce available capacities at existing landfills.

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact

Disposal of construction waste would comply with federal, State, and local statutes and regulations related to solid waste.

4.20 WILDFIRE

4.20.1 Environmental Setting

The California Department of Forestry and Fire Protection (CAL FIRE) designates fire hazard severity zones (FHSZ) for areas under state jurisdiction. A FHSZ is a mapped area that designates zones (based on factors such as fuel, slope, and fire weather) with varying degrees of fire hazard (i.e., moderate, high, and very high). FHSZ maps evaluate wildfire hazards, which are physical conditions that create a likelihood that an area would burn over a 30- to 50-year period (California State Geoportal 2020). While FHSZs do not predict when or where a wildfire would occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern

The project area is not located within a designated FHSZ area.

4.20.2 CEQA Checklist Summary

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones:

CEQA Question	Impact Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	No Impact
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?	No Impact
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?	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	No Impact

4.20.3 Answers to CEQA Checklist Questions

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact

The project area is not located within a state responsibility area or lands classified as very high fire hazard severity zones. There would be no impact.

The County does have an Emergency Operations Plan. The proposed project would improve flow capacity of the culvert and the roadway, providing more secure emergency access by reducing flood damage.

b) Would the project, 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?

No Impact

Refer to response above. The project area is not located within a state responsibility area or lands classified as very high fire hazard severity zones. The project does not propose to construct or modify habitable structures within the project area that could expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. There would be no impact.

c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact

The proposed project does not require associated infrastructure or utilities that would exacerbate fire risk. The project improvements are designed to eliminate culvert failures on Kennefick Road and maintain access for residents and businesses located north of the intersection. The proposed improvements would not exacerbate fire risk or impact the environment.

d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact

The project area is not located in a FHSZ, and is in an area what is mostly flat with a slight increase in slope to the north, and the project would not expose people or structures to significant risk, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability or drainage changes.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

4.21.1 CEQA Checklist Summary

CEQA Question	Impact Determination
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?	Less Than Significant Impact with Mitigation Incorporated
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, or the effects of probable future projects.)	Less Than Significant Impact with Mitigation Incorporated
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact

4.21.2 Answers to CEQA Mandatory Findings of Significance Questions

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?

Less Than Significant Impact with Mitigation Incorporated

The initial study has determined that the proposed project does not have the potential to substantially degrade the quality of environment with regards to agricultural and forestry resources, air quality, scenic resources, cultural resources, energy, geology and soils, greenhouse gas emissions, hazards or hazardous materials, hydrology and water quality, land use, mineral resources, noise, population and housing, public services, recreation, transportation, utilities and services, or wildfires.

As discussed in Section 4.4, Biological Resources, project construction could potentially impact migratory birds and birds of prey during breeding season and could potentially impact CTS and CRLF within the vicinity; however, with

implementation of **Mitigation Measures BIO-1 and BIO-2,** impacts would be reduced to less than significant levels by requiring pre-construction surveying of the project area and by requiring biological monitoring during culvert replacement would avoid impacts to potential CTS and CRLF.

As discussed in 4.18 Tribal Cultural Resources, project construction could potentially expose tribal cultural resources; however, with implementation of **Mitigation Measures TCR-1 and TCR-2,** impacts would be reduced to less than significant levels by requiring site monitoring and protocols for the treatment of unanticipated discoveries.

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, or the effects of probable future projects.?

Less Than Significant Impact with Mitigation Incorporated

The project does not result in an increase in population or growth that would require new housing, facilities, or structures that would cause environmental degradation. The project does not result in an exceedance for any criteria air pollutant for which the region is in non-attainment; therefore, there would be no cumulatively considerable net increase in criteria pollutants. The project would be consistent with local, state, and federal regulations pertaining to the protection and mitigation of impacts to sensitive resources, and compliance with the terms of permitting conditions would ensure that adverse impacts to resources are mitigated and would not result in cumulative impacts. All identified potentially significant impacts from construction and implementation are reduced to less than significant with the mitigation measures that have been included in the project, which ensures no cumulatively considerable impact to biological and tribal cultural resources.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact

Implementation of best management practices and compliance with state and federal regulations protecting human and environmental health during construction, such as preparation of a SWPPP and Spill Prevention Plan, would be implemented. There were no potentially significant impacts identified that would cause substantial adverse effects on human beings, either directly or indirectly.

Section 5 Mitigation Monitoring and Reporting Plan

CEQA requires review of any project that could have significant adverse effects on the environment. In 1988, CEQA was amended to require reporting on and monitoring of mitigation measures adopted as part of the environmental review process. This Mitigation Monitoring and Reporting Plan is designed to aid the County in their implementation and monitoring of measures proposed in the IS for the proposed project.

Table 5 provides details of the MMRP. The mitigation measures are taken from the IS and are assigned the same number as in the IS. The MMRP describes the actions that must take place to implement each mitigation measure, the timing of those actions, and the entities responsible for implementing and monitoring the actions.

Table 5. Mitigation and Monitoring Plan

Mitigation Measure	Mitigation Activities	Implemented By	Monitored By	Timing and Frequency	Verification of Compliance
BIO-1	If any construction activities (e.g., clearing, grubbing, or grading) are scheduled during the bird nesting season (typically defined by CDFW as February 1 to September 1), the County or approved construction contractor shall retain a qualified biologist to conduct a pre-construction survey of the project area, including a 100-foot buffer, as access is available, to locate active bird nests, identify measures to protect the nests, and locate any other special status species. The pre-construction survey shall be conducted no more than 14 days prior to the implementation of construction activities (including staging and equipment storage). Any active nest should not be disturbed until the young have fledged or under the direction provided by a qualified biologist. Any special status species shall not be disturbed without the direction of a qualified biologist. If an active nest is	Project Contractors shall hire a qualified biologist to conduct pre-construction surveys as described. Project Contractors shall prepare construction plans that incorporate pre-construction surveys and buffer zones. If required, avoidance procedures shall be implemented.	Project Contractors, San Joaquin County, and Biologist	No more than 14 days before start or restart of construction during the months of February through August.	Verified by: Date:

	found during construction, disturbance shall not occur without direction from a qualified biologist.				
BIO-2	Prior to construction activities, the County or County's selected Contractor shall conduct worker awareness training for species of special concern with potential to occur onsite During excavation and installation of culverts, biological monitors shall be present onsite to ensure potential CTS and CRLF individuals are not harmed during construction. If any project personnel encounter any species of special concern during project activities, work shall be suspended, CDFW notified, and conservation measures shall be developed in agreement with CDFW prior to re-initiating the activity. If during the conduct of project activities, Permittee encounters any species listed as Threatened or Endangered pursuant to the CESA, work shall be suspended, and CDFW notified. Work may not re-initiate until the Permittee has consulted with	Project Contractors shall hire a qualified biologist to conduct construction monitoring as described. Prior to construction, Project Contractors shall conduct worker awareness training.	Project Contractors, San Joaquin County, and Biologist	Prior and during construction.	Verified by: Date:

	CDFW and can demonstrate compliance with CESA				
TCR-1	To minimize the potential for destruction of or damage to existing or previously undiscovered burials, archaeological and tribal cultural resources and to identify any such resources at the earliest possible time during project-related earthmoving activities, County and its construction contractor(s) would implement the following measures: • Paid Native American monitors from culturally affiliated Native American Tribes shall be invited to monitor the vegetation grubbing, stripping, grading or other ground-disturbing activities in the project area to determine the presence or absence of any cultural resources. Native American representatives from cultural affiliated Native American Tribes act as a representative of their Tribal government and shall be consulted before any cultural studies or ground-disturbing activities begin. • Native American representatives and Native American monitors have the authority to identify	Project Contractors shall hire a paid Native American monitor during construction.	Project Contractors, San Joaquin County, and Native American Monitor	During construction	Verified by: Date:

	sites or objects of significance to Native Americans and to request that work be stopped, diverted or slowed if such sites or objects are identified within the direct impact area. Only a Native American representative can recommend appropriate treatment of such sites or objects. • If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work would stop in that area and within 100 feet of the find until a archaeologist who meets the Secretary of the Interior's qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the Caltrans, the SHPO, and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or				

	other actions determined during consultation. • A consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation shall be developed in coordination with interested Native American Tribes. The brochure shall be distributed and the training shall be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and would outline				

	what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program shall also underscore the requirement for confidentiality and culturally appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values.				
TCR-2	In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities, the construction contractor or the County, or both, shall immediately halt potentially damaging excavation in the area of the burial and notify the County coroner and a qualified professional archaeologist to determine the nature of the remains. The coroner shall examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands, in accordance with Section 7050(b) of the Health and Safety Code. If the coroner determines that the remains are those of a Native American, he or she shall contact	Project Contractor and Archeologist	Project Contractors, San Joaquin County, and Archeologist	During construction.	Verified by: Date:

	the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). After the coroner's findings are presented, the County, the archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed.				

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Appendix A

ROADMOD EMISSIONS CALCULATIONS

Kennefick Road Flood Control Project

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Kennefick Flood Control Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	0.76	15.16	2.87	10.14	0.14	10.00	2.20	0.12	2.08	0.03	2,622.85	0.72	0.07	2,661.31
Grading/Excavation	1.57	30.21	4.19	10.21	0.21	10.00	2.26	0.18	2.08	0.05	5,255.87	1.56	0.10	5,325.27
Drainage/Utilities/Sub-Grade	1.49	31.12	4.72	10.24	0.24	10.00	2.29	0.21	2.08	0.05	5,206.41	1.09	0.10	5,263.23
Paving	0.60	14.24	2.53	0.13	0.13	0.00	0.11	0.11	0.00	0.02	2,093.60	0.55	0.06	2,126.37
Maximum (pounds/day)	3.66	75.57	11.44	20.58	0.58	20.00	4.65	0.49	4.16	0.13	12,555.88	3.20	0.27	12,714.87
Total (tons/construction project)	0.03	0.59	0.09	0.19	0.00	0.19	0.04	0.00	0.04	0.00	99.02	0.03	0.00	100.26

Notes:		
	Project Start Year ->	2021
	Project Length (months) ->	2
	Total Project Area (acres) ->	2
	Maximum Area Disturbed/Day (acres) ->	1
	Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	3	20	30	30	30	16
Grading/Excavation	145	75	30	30	80	32
Drainage/Utilities/Sub-Grade	0	0	30	30	60	32
Paving	0	145	30	30	50	16

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Kennefick Flood Control Project				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.00	0.03	0.01	0.02	0.00	0.02	0.00	0.00	0.00	0.00	5.77	0.00	0.00	5.31
Grading/Excavation	0.01	0.27	0.04	0.09	0.00	0.09	0.02	0.00	0.02	0.00	46.25	0.01	0.00	42.51
Drainage/Utilities/Sub-Grade	0.01	0.24	0.04	0.08	0.00	0.08	0.02	0.00	0.02	0.00	40.09	0.01	0.00	36.77
Paving	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.91	0.00	0.00	6.37
Maximum (tons/phase)	0.01	0.27	0.04	0.09	0.00	0.09	0.02	0.00	0.02	0.00	46.25	0.01	0.00	42.51
Total (tons/construction project)	0.03	0.59	0.09	0.19	0.00	0.19	0.04	0.00	0.04	0.00	99.02	0.03	0.00	90.96

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

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Appendix B

BIOLOGICAL RESOURCES ASSESSMENT

Kennefick Road Flood Control Project



Biological Resources Assessment

Kennefick Road Flood Control Project
June 2020

NCE

Richmond, CA
501 Canal Blvd., Suite I
Richmond, CA 94804



San Joaquin County Public Works Department

1810 E. Hazelton Avenue
Stockton, CA 95205

Report for:

BIOLOGICAL RESOURCES ASSESSMENT

Kennefick Road Flood Control Project
San Joaquin County, California

Prepared for:

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 PROJECT SITE AND STUDY AREA 1
1.2 RELEVANT FEDERAL AND STATE LAWS 2
1.2.1 California Environmental Quality Act 2
1.2.2 Threatened and Endangered Species ..... **Error! Bookmark not defined.**
1.2.3 Migratory Birds 2
1.2.4 Birds of Prey 2
1.2.5 Wetlands and Other Jurisdictional Waters 3
2.0 METHODS 4
3.0 RESULTS 5
3.1 SOILS AND TOPOGRAPHY 5
3.1.1 Soils 5
3.1.2 Topography 5
3.1.3 Climate 5
3.2 HABITATS 5
3.2.1 Project Site and Vicinity 5
3.3 JURISDICTIONAL WATERS 13
4.0 POTENTIAL IMPACTS AND MITIGATION MEASURES 14
4.1 PROJECT SPECIFIC IMPACTS AND MITIGATION MEASURES 14
4.1.1 Impacts to Sensitive Habitats 14
4.1.2 Impacts to Habitats for Rare and Endangered and Other Special Status Species 14
4.2 CONCLUSION 15
5.0 REFERENCES 16

LIST OF TABLES

Table 1: Soils Occurring at the Project Site 5
Table 2: List of Special Status Species that May Occur in the Project Vicinity 7

APPENDICES

Appendix A. Figures
Figure 1: Project Site and Vicinity
Figure 2: Soils Map
Figure 3: Habitat Map
Figure 4: CNDDB Species Map

Appendix B. Site Photographs

1.0 INTRODUCTION

This Biological Resources Assessment was prepared for the Kennefick Road Flood Control Project (Project). This report describes the biological resources found in the area and the potential for impacts to those biological resources that must be considered under the California Environmental Quality Act (CEQA) and other local laws and regulations. The report concludes with an analysis of those potential impacts and how they may be reduced to less than significant with appropriate mitigation measures.

The objectives of this report are to:

- Summarize all site-specific information related to existing biological resources
- Draw reasonable conclusions about the biological resources that could occur onsite based on habitat suitability, historical occurrences, and the proximity of the site to a species' known range
- Identify and discuss the potential impacts to biological resources from the Project likely to occur on and near the site within the context of CEQA
- Identify avoidance, minimization, and mitigation measures that would reduce potential impacts and that are generally consistent with recommendations of the resource agencies for affected biological resources

1.1 PROJECT SITE AND STUDY AREA

The Project site near 27102 N Kennefick Road is located 1.2 miles south of the City of Galt in San Joaquin County, California. The Project site is located in Section 31 in Township 5 North and Range 7 East and in Section 6 in Township 4 North and Range 7 East of the Mt. Diablo Meridian (**Appendix B**) which may be found on the USGS 7.5-minute Lodi North quadrangle map (**Figure 1, Appendix A**).

The Project site stretches along 400 feet of N Kennefick Road east of its intersection with Liberty Road. The Project site includes approximately 2.05 acres.

According to the San Joaquin County Zoning Map, the Project site is AG Zone (General Agriculture). This zone is established to preserve agricultural lands for the continuation of commercial agriculture enterprises. (San Joaquin, 2016)

Project Description

The purpose of the project is to provide improved access and drainage for N Kennefick Road that will ensure access to properties north of Liberty Road during 5-year/7-day regional precipitation events. The proposed project is needed to redesign and replace the roadway and culverts that were quickly patched after 2017 storm events to provide short term access in a way that provides long term safe and stable access for residents and emergency services during major storms.

The project is intended to meet the following objectives:

- Design and construct conveyance facilities for the Unnamed Tributary passing under Kennefick Road to convey the 5-year/7-day regional precipitation event (approximately 500 cubic feet per second [cfs])

- Protect residents and businesses from disruption and risks due to flooding from the 5-year/7-day regional precipitation event
- Repair roadway from emergency section

Potential construction staging areas are located within the surveyed Project site. Project construction is expected to begin in November 2021 and last up to three months.

1.2 RELEVANT FEDERAL AND STATE LAWS

1.2.1 California Environmental Quality Act

The Project will require compliance with CEQA and San Joaquin County will serve as the lead agency. The County will conduct an environmental review, which will comprise a review of all studies conducted in compliance with CEQA and the creation and adoption of appropriate mitigation and monitoring measures. A mitigated negative declaration CEQA document is being prepared for this project.

Permits may be required from both the CDFW and the United States Fish and Wildlife Service (USFWS) if activities associated with a proposed project will result in the "take" of a listed species. "Take" is defined by the state of California as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under CEQA. Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

1.2.2 Migratory Birds

State and federal laws protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. The CDFW Fish and Game Code has similar requirements to the Federal Migratory Bird Treaty Act. This act encompasses whole birds, parts of birds, and bird nests and eggs. If a bird species protected under the federal or state migratory bird protections, regardless of its federal or state status, were to nest near the site prior to or during proposed construction activities, such activities could result in the abandonment of active nests or direct mortality to these birds and would constitute a violation of state and federal law.

1.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

1.2.4 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide
- All interstate waters including interstate wetlands
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce
- All impoundments of waters otherwise defined as waters of the United States under the definition
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above)

The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high-water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

Discharge of fill into jurisdictional waters is subject to USACE permit requirements. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the Construction General Permit. Federally funded projects must also comply with Executive Order 11990 (Protection of Wetlands).

The CDFW has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2008b). Activities that would disturb these drainages are regulated by the CDFW through a Lake and Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

2.0 METHODS

The purpose of this Biological Resources Assessment is to describe the biological resources found within the Project site and the potential for impacts to those biological resources that must be considered under CEQA, California Endangered Species Act (CESA) and the Federal Endangered Species Act (FESA). Research was conducted on biological resources known to occur in the area and site visits included both a biological reconnaissance-level survey and a waters of the United States delineation.

The following site-specific references and background information was reviewed:

- *California Natural Diversity Database* (CNDDB). 2020. California Department of Fish and Game, Sacramento, CA. Accessed online.
- California Native Plant Society. 2020. *Inventory of Rare and Endangered Vascular Plants of California*. Accessed online.
- Natural Resource Conservation Service. United States Department of Agriculture. *Web Soil Survey*. Accessed online.
- U.S.G.S. *Lodi North, California* (1995) 7.5-minute quadrangle.
- Information for Planning and Conservation (IPaC). 2020. United States Fish and Wildlife Service. Accessed online.

The site was visited on March 23, 2018 by NCE biologist Quinn Radford. Plant communities and habitats were observed and recorded. Transects were traversed on foot and the site was photographed. The purpose of the survey was to identify and map plant communities at the Project site and to determine the presence of any special status species (SSS) or their habitat.

3.0 RESULTS

3.1 SOILS AND TOPOGRAPHY

3.1.1 Soils

According to the Natural Resources Conservation Service, soils found in the immediate vicinity of the Project site are **San Joaquin loam**, 2% to 8% slopes (NRCS 2019). A summary of this soil unit is found in **Table 1** below and is illustrated in **Figure 2**.

Table 1: Soils Occurring at the Project Site

Soil Series/Soil	Map Symbol	Parent Material	Drainage Class	% of Project Boundary
San Joaquin loam, 2 to 8 percent slopes, eroded, MLRA 15	MeG	Alluvium from mixed but mainly granitic rock sources	Well drained	100%

Source: NRCS 2020

3.1.2 Topography

Topography in the vicinity of the site is flat to rolling. Elevations of the Project site range from approximately 67 feet to 72 feet above mean sea level.

3.1.3 Climate

Northern San Joaquin County experiences hot dry summers and mild winters. The average annual rainfall near the Project site is approximately 18 inches (WRCS 2020).

3.2 HABITATS

3.2.1 Project Site and Vicinity

Habitats adjacent to the Project site include cultivated farmland. Habitats at the Project site include ruderal/developed land with escaped almond trees, a native walnut tree, and non-native grasses. Site photographs are found in **Appendix B**.

Ruderal/Developed: A habitat of roadside trees and non-native grasses characterizes the majority of land in the Project site. Plants are mostly non-natives and invasives with few native species present. These include ripgut brome (*Bromus diandrus*), Italian ryegrass, California walnut (*Juglans californica*), spike rush (*Eleocharis macrostachya*), soft chess (*Bromus hordeaceus*), wild oat (*Avena barbata*), large-flowered fiddleneck (*Amsinkia grandiflora*), wild radish (*Raphanus sativus*), spring vetch (*Vicia sativa*), plantain (*Plantago lanceloata*), curly dock (*Rumex crispus*), valley oak (*Quercus lobata*), common sow thistle (*Sonchus oleraceus*), chickweed (*Stellaria media*), poison hemlock (*Conium maculatum),* and spring vetch (*Vicia villosa*).

There are eight non-native plants on and adjacent to the site and have received a California Invasive Plant Council (Cal-IPC) rating. The following have a moderate Cal-IPC rating: ripgut brome, poison hemlock, wild oat, soft chess. Wild radish, plantain, and curly dock Cal-IPC rating is limited.

Wildlife Habitats. The habitats within and surrounding the Project site support a varied assemblage of wildlife, which may move through the region or migrate seasonally. Croplands make up the adjacent land next to the Project site. Native wildlife utilizes croplands for many purposes depending on the crop and the time of year.

The proximity of habitat types provide for a number of resident and migratory birds. Waterfowl, passerines, raptors, and other bird species can be found in the vicinity from time to time. These and other birds may nest, forage, or winter in habitats on or adjacent to the Project site.

SPECIAL STATUS SPECIES

A wide variety of taxa native to the state of California have low populations, limited distributions, or are otherwise vulnerable to extinction or extirpation with the state. Although they may include Ecologically Significant Units and sub-species as well as species, these taxa are collectively referred to as "special status species".

These flora and fauna may be considered "rare" and are vulnerable to extirpation as the state's human population grows, the habitats these species occupy are converted to agricultural and urban uses, and they are subject to other impacts such as climate change or wildfires. State and federal laws have provided the CDFW and the USFWS with the responsibility for conserving and protecting the diversity of plant and animal species native to the state. Because of the diversity of habitats within the state, a relatively large number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2019).

Several special status plants and animals have the potential to occur within the Project site (**Figure 4**). Relevant information was reviewed to assess the likelihood of SSS within the Project site and is summarized below (**Table 2**). Sources of information for this table included past biological studies conducted in the vicinity, CDFW's CNDDB, CNPS' Inventory of Rare and Endangered Plants of California, as well as a query of federally listed wildlife species from the USFWS Sacramento Endangered Species office via the IPaC website. The CNDDB records and other maps of SSS were reviewed within a 1-mile buffer around the Project site. The CNPS inventory search considered species known to occur within the nine quadrangles surrounding the proposed Project location. This information was used to evaluate the potential for plant and animal SSS to occur within or adjacent to the Project site. The CNDDB is a volunteer database of historical occurrences; therefore, it may not contain all known or gray literature records.

Table 2: List of Special Status Species that May Occur in the Project Vicinity

Species	Status	Habitat	Occurrence in the Project Site
Plant Species			
Bristly sedge (*Carex comosa*)	CNPS 2B.1	Coastal prairie, Marshes, and swamps (lake margins), Valley and foothill grassland	**Possible.** Potential habitat occurs on or near the Project site.
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	CNPS 1B.2	Marshes and swamps (lake margins), Vernal pools	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Bolander's water-hemlock (*Cicuta maculata* var. *bolanderi*)	CNPS 2B.1	Marshes and swamps coastal, fresh, or brackish water	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*)	CNPS 1B.2	Marshes and swamps (freshwater and brackish)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Dwarf downingia (*Downingia pusilla*)	CNPS 2B.2	Valley and foothill grassland (mesic), Vernal pools	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Ferris' goldfields (*Lasthenia ferrisiae*)	CNPS 4.2	Vernal pools (alkaline, clay)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Heckard's pepper-grass (*Lepidium latipes* var. *heckardii*)	CNPS 1B.2	Valley and foothill grassland (alkaline flats)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Hoary navarretia (*Navarretia eriocephala*)	CNPS 4.3	Cismontane woodland, Valley, and foothill grassland	**Possible.** Potential habitat occurs on or near the Project site.
Hogwallow starfish (*Hesperevax caulescens*)	CNPS 4.2	Valley and foothill grassland (mesic, clay), Vernal pools (shallow)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.

Species	Status	Habitat	Occurrence in the Project Site
Legenere (*Legenere limosa*)	CNPS 1B.1	Vernal Pools	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Mason's lilaeopsis (*Lilaeopsis masonii*)	CNPS 1B.1	Marshes and swamps (brackish or freshwater), Riparian scrub	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Marsh skullcap (*Scutellaria galericulata*)	CNPS 2B.2	Lower montane coniferous forest, Meadows, and seeps (mesic), Marshes and swamps	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Northern California black walnut (*Juglans hindsii*)	CNPS 1B.1	Riparian forest, Riparian woodland	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Parry's rough tarplant (*Centromadia parryi* ssp. *Rudis*)	CNPS 4.2	Valley and foothill grassland, Vernal pools	**Possible.** Potential habitat occurs on or near the Project site.
Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*)	CNPS 2B.2	Marshes and swamps (freshwater)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Sacramento Orcutt grass (Orcuttia viscida)	CNPS 1B.1	Vernal Pools	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Saline Clover (Trifolium hydrophilum)	CNPS 1B.2	Marshes and swamps, Valley, and foothill grassland (mesic, alkaline), Vernal pools	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Sanford's arrowhead (*Sagittaria sanfordii*)	CNPS 1B.2	Marshes and swamps (assorted shallow freshwater)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Side-flowering skullcap (*Scutellaria lateriflora*)	CNPS 2B.2	Meadows and seeps (mesic), Marshes and swamps	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.

Species	Status	Habitat	Occurrence in the Project Site
Slender Orcutt grass (*Orcuttia tenuis*)	CNPS 1B.1	Vernal pools	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Succulent owl's-clover (*Castilleja campestris* var. *succulenta*)	CNPS 1B.2, FT	Vernal pools (often acidic)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Suisun Marsh aster (*Symphyotrichum lentum*)	CNPS 1B.2	Marshes and swamps (brackish and freshwater)	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Valley brodiaea (*Brodiaea rosea ssp. Vallicola*)	CNPS 4.2	Valley and foothill grassland (swales), Vernal pools.	**Possible.** Potential habitat occurs on or near the Project site.
Watershield (*Brasenia schreberi*)	CNPS 2B.3	Marshes and swamps (freshwater) .	**Unlikely.** Species distribution limited to specific areas. Potential habitat does not exist on Project site.
Woolly rose-mallow (*Hibiscus* lasiocarpos var. *occidentalis*)	CNPS 1B.2	Marshes and swamps (freshwater)	**Absent.** Species not observed on the Project sites and precluded from occurring there because habitat requirements not met.
Avian Species			
Black-crowned night heron (*Nycticorax nycticorax*)	S4	Forage in aquatic habitat only. Common in streams, rivers, lakes, canals, wet agricultural fields, swamps, streams, and marshes.	**Possible.** This species may occur incidentally on the Project site if they forage over adjacent areas. They are unlikely to nest on the Project site.
Burrowing owl (*Athene cunicularia*)	S3	Open treeless areas with low sparse vegetation, mostly on gentle slopes. Grasslands, desert, pastures, agricultural fields.	**Unlikely.** Suitable habitat does not exist on the Project site.
Great blue heron (*Ardea Herodias*)	S4	Salt and Fresh water habitats. Forage in grasslands and agricultural fields as well.	**Possible.** This species may occur incidentally on the Project site if they forage over adjacent areas. They are unlikely to nest on the Project site.

Species	Status	Habitat	Occurrence in the Project Site
Great egret (*Ardea alba*)	S4	Marine wetlands, brackish, and freshwater. Hunt for prey in most aquatic environments near land including flooded agricultural fields.	**Possible.** This species may occur incidentally on the Project site if they forage over adjacent areas. They are unlikely to nest on the Project site.
Swainson's hawk (*Buteo swainsoni*)	CT	Forages in open habitats including grassland and agricultural cropland. Nesting occurs in scattered stands of trees near agricultural fields and grasslands	**Present.** Species observed above the Project site at time of field surveys or during recent past.
Tricolored blackbird (*Agelaius tricolor*)	CT	Agricultural fields with , wetlands with vegetation like cattail, and bulrush.	**Unlikely.** Suitable habitat does not exist on the Project site.
White-tailed kite (*Elanus leucurus*)	S3S4	Common in woodlands, savannas, cultivated fields, marshes,	**Possible.** This species may occur incidentally on the Project site if they forage over adjacent areas. They are unlikely to nest on the Project site.
Mammals			
Riparian Brush Rabbit (*Sylvilagus bachmani riparius*)	FE	Dense brushy areas in Riparian forests in the San Joaquin Valley near extensive thickets of low growing brush and vines.	**Absent.** Does not occur on the Project site. Habitat not present.
Herptiles			
California red-legged frog (*Rana draytonii*)	FT	A pond frog that inhabits humid forests, woodlands, grasslands, and streamsides; however, frequents otherwise permanent sources of water. Breeds January-April and can be found in damp woods during non-breeding periods.	**Possible**. California red-legged frog may occur incidentally on the Project site. Potential habitat does exist on Project site.
California tiger salamander (*Ambystoma tigrinum*)	FT	Breeding usually occurs in fish-free ephemeral ponds, but some salamanders may also breed in slow streams and in semi-permanent waters, including cattle ponds. Adults take	**Possible.** Potential habitat exists on Project site.

Species	Status	Habitat	Occurrence in the Project Site
		refuge in abandoned mammal burrows and often occur in grassland, oak savanna, edges of mixed woodland and lower elevation coniferous forest.	
Fish			
Central Valley DPS steelhead (*Oncorhynchus mykiss irideus*)	FT	Fast flowing, well oxygenated, gravel bottomed rivers and streams.	**Absent.** Does not occur on the Project site. Habitat not present.
Delta Smelt (*Hypomesus transpacificus*)	FE	Seldom found where seawater makes up more than 1/3 of total water. Sandy shoals.	**Absent**. Does not occur on the Project site. Habitat not present.
Invertebrates			
California linderiella (*Linderiella occidentalis*)	G2G3	Vernal pools	**Absent.** Does not occur on the Project site. Habitat not present.
Conservancy Fairy Shrimp (*Branchinecta conservatio*)	FE	Vernal Pools	**Absent.** Does not occur on the Project site. Habitat not present.
Midvalley fairy shrimp (*Branchinecta mesovallensis)*	G2	Vernal pools	**Absent.** Does not occur on the Project site. Habitat not present.
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT	Found most often along rivers and streams on or close to its host plant blue or red elderberry.	**Absent.** Does not occur on the Project site. Habitat not present.
Vernal pool fairy shrimp (*Branchinecta lynchi)*	FT	Vernal pools	**Absent.** Does not occur on the Project site. Habitat not present.
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE	Vernal pools	**Absent.** Does not occur on the Project site. Habitat not present.
Herptiles			
Giant gartersnake (*Thamnophis gigas*)	FT	Agricultural wetlands, irrigation and drainage canals, and marshes, slow streams,	**Unlikely.** Species not observed on the Project sites, and would not be expected to occur there except, perhaps, as a transient.

Species	Status	Habitat	Occurrence in the Project Site
Western pond turtle *(Emys marmorata*)	S3S4	Ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6,000ft elevation	**Unlikely.** Species not observed on the Project sites, and would not be expected to occur there except, perhaps, as a transient.

Sources: CNDDB 2018, AES 2009, USFWS 2018, LSA 2011, Tetra Tech 1998, and CNPS 2018.

Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the sites and precluded from occurring there because habitat requirements not met.

STATUS CODES
FE: Federally Endangered
FT: Federally Threatened
FPE: Federally Endangered (Proposed)
FC: Federal Candidate
CT: California Threatened

California Native Plant Society Listing (CNPS)
1A: Plants Presumed Extinct in California
1B: Plants Rare, Threatened, or Endangered in California and elsewhere
2: Plants Rare, Threatened, or Endangered in California, but more common elsewhere
3: Plants about which we need more information – a review list
4: Plants of limited distribution – a watch list

State Rank: The *State Rank* reflects the condition and imperilment of a species throughout its range within the state. The State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, weighted more heavily on the rarity factors. The *State Ranks* are assigned by California heritage biologists using standard natural heritage methodology.
SX: **Presumed Extirpated** — Species or community is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
SH: **Possibly Extirpated** (Historical) — Species or community occurred historically in the state, and there is some possibility that it may be rediscovered. All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists.
S1: **Critically Imperiled** — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2: **Imperiled** — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
S3: **Vulnerable** — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
S4: **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5: **Secure** — Common, widespread, and abundant in the state.

3.3 JURISDICTIONAL WATERS

Jurisdictional waters are defined by the laws that protect them, including the federal Clean Water Act (CWA) and the California Fish and Game Code, Sections 1600 through 1603. The CWA regulates waters of the U.S., which typically includes rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Waters of the U.S. may also include lakes, ponds, reservoirs, and wetlands, if these waters have a significant nexus with a Traditional Navigable Water.

Creeks, rivers, lakes, and their associated riparian areas may be subject to regulation by the CDFW under Section 1600, and the California Regional Water Quality Control Board (RWQCB) may take jurisdiction over all waters of the state. Waters of the state are defined as all surface and groundwater within the state of California. The unnamed drainage in the Project area runs east to west and as an overflow channel for Dry Creek located north of the Project area. An aquatic resources delineation report for this Project completed by NCE in March of 2020 found jurisdictional waters of the U.S. were present. NCE is preparing a Section 401 waste discharge permit application for the RWQCB and a Section 404 permit application for the U.S. Army Corps of Engineers.

4.0 POTENTIAL IMPACTS AND MITIGATION MEASURES

4.1 PROJECT SPECIFIC IMPACTS AND MITIGATION MEASURES

The Project improvements will have the potential to impact biological resources during construction. The proposed Project will address previous road failures due to overwhelmed culverts by increasing the elevation of the roadway and constructing a new box culvert with increased hydrologic capacity. These actions will require grading, excavation, vegetation removal, and soil disturbance. These activities cause noise, create dust and vibration, and have the potential to impact native plant species. Wildlife species may be disturbed during these activities and their habitats may be impacted. The applicant proposes to avoid and minimize the potential for these impacts by implementing specific mitigation measures.

Following consultation with the regulatory agencies, mitigation and monitoring measures will be identified to reduce impacts to sensitive species and their habitats. Implementation of these mitigation measures will reduce the potential for significant impacts to those resources. These requirements are likely to include measures such as:

- Pre-construction surveys for nesting birds, CRLF, and CTS
- Biological monitoring of ground disturbance activities near the culvert that occurs during construction
- Worker awareness training at the start of construction for potentially occurring SSS.

It is expected that the following three environmental permits will be required for this project: A lake and streambed alteration agreement from CDFW, a 401 Water Quality Certification and Waste Discharge Requirements Application from Central Valley Regional Water Quality Control Board (CVRWQCB), and a USACE Nationwide Permit under Section 404 of the Clean Water Act.

4.1.1 Impacts to Sensitive Habitats

CDFW defines Sensitive Natural Communities as those natural communities with ranks of S1-S3. These Sensitive Natural Communities require consideration during the environmental review process of CEQA and its equivalents. During the March 23 site visit, no sensitive natural communities were identified within the Project site.

4.1.2 Impacts to Habitats for Rare and Endangered and Other Special Status Species

Flora

Four special status plant species have the potential to occur within the Project site: bristly sedge, hoary navarretia, Parry's rough tar plant, and valley brodiaea (**Table 2**). These plant species are uncommon in San Joaquin County. Project construction will avoid all tree and shrub removal but may remove some largely non-native vegetation.

The potential for these special status plant species to occur on site prior to construction activities is very low and none were observed during the March 23rd survey.

Fauna

Several of the special status or sensitive animal species that occur, or once occurred, regionally, have the potential to occur at the site (**Table 2**). These include nesting birds, foraging birds, the California tiger salamander (CTS), and the California red-legged frog (CRLF). These species may use this site as home range or for migratory movements using the site infrequently. They may also forage on the site year-round or during migration.

During excavation and installation of culverts, it is recommended that biological monitors be present to ensure potential CTS and CRLF individuals are not harmed during construction. The CTS is of particular concern due to nearby sighting documentation and because they are very attracted to cracks under culverts (J. Alvarez, personal conversation, March 29, 2020).

The Project will not involve permanent loss of any wildlife foraging, nesting, and/or roosting habitat that is abundantly available regionally. A temporary bypass road will be constructed adjacent to the existing road on the westside to make way for traffic during construction. This area has very little vegetation due to recent earth moving on the private property where the road will be installed. The small amount of largely non-native vegetation being removed during excavation and temporary road install is not a valuable resource. Therefore, the loss of habitat for these species would be considered less than significant.

No nesting bird stick nests were observed in trees on the site. Trees in the Project vicinity may provide suitable nesting habitat for migratory birds, including tree-nesting raptors. If a migratory bird, regardless of its federal or state status, were to nest in trees near the site prior to or during proposed construction activities, such activities could result in the abandonment of active nests or direct mortality to these birds. There is some historical evidence Swainson's hawk activity near the Project site in CNDDB records but no nearby nest sightings recorded. Construction activities that adversely affect the nesting success of special-status or non-special-status migratory birds, including tree-nesting raptors, or result in mortality of individual birds constitute a violation of state and federal laws.

4.2 CONCLUSION

The Project requires repair of an existing culvert and 400 ft section of road. Several SSS have the potential to use the adjacent habitat, and the potential exists to adversely affect these species and their habitats. However, the Project has been designed to avoid and minimize impacts to SSS and sensitive species. The contractor will be required to implement best management practices (BMP's) to avoid impacts to SSS and their habitat, sensitive species, migratory and nesting birds, and water quality. Revegetation of areas where vegetation is unavoidably impacted will occur. Biological monitoring during culvert replacement is recommended to avoid impacts to potential SSS including CTS and CRLF.

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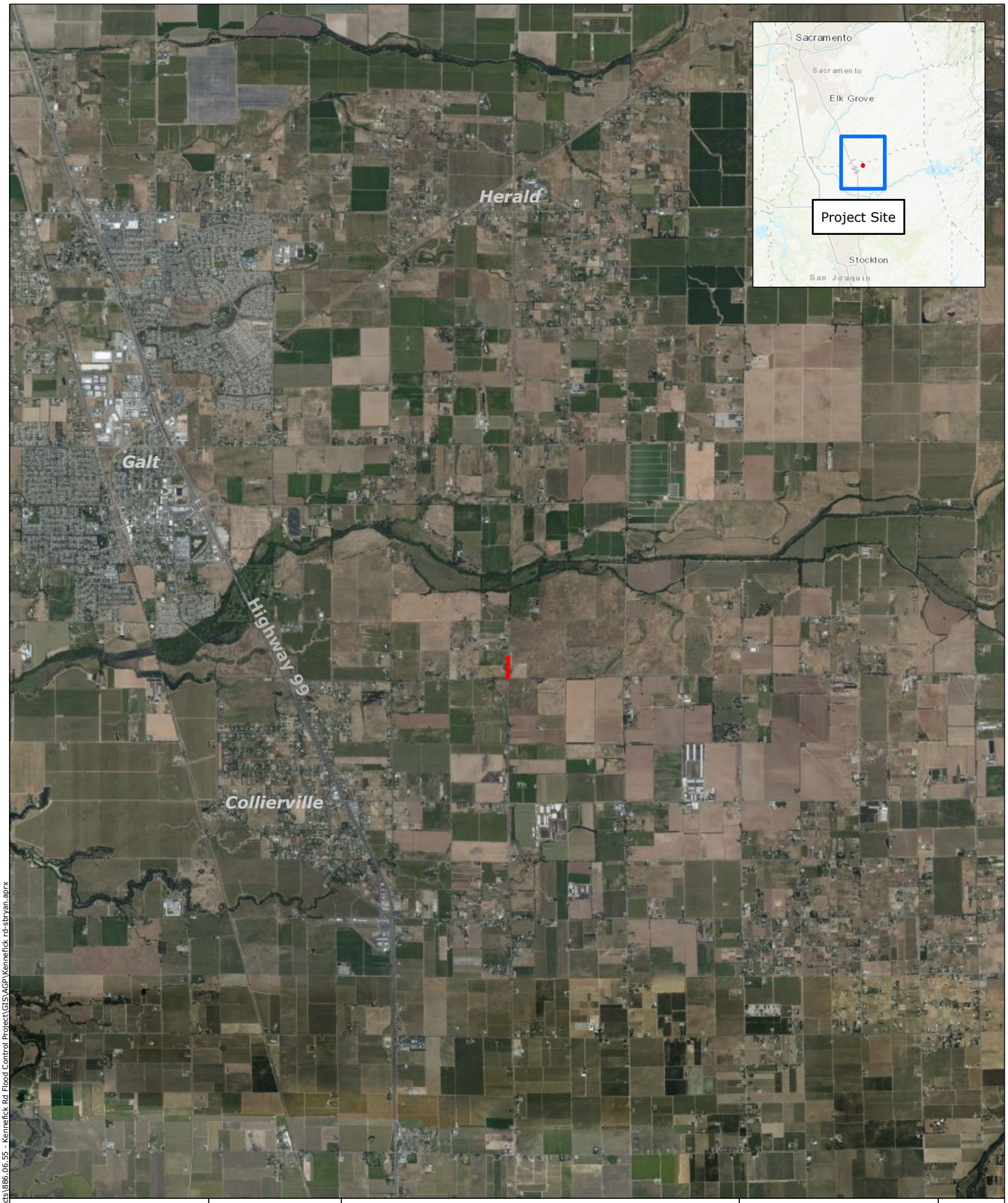
APPENDIX A - FIGURES

Figure 1: Project Site and Vicinity
Figure 2: Soils Map
Figure 3: Habitat Map
Figure 4: CNDDB Species Map



Legend

Project Site

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Vicinity Map

N

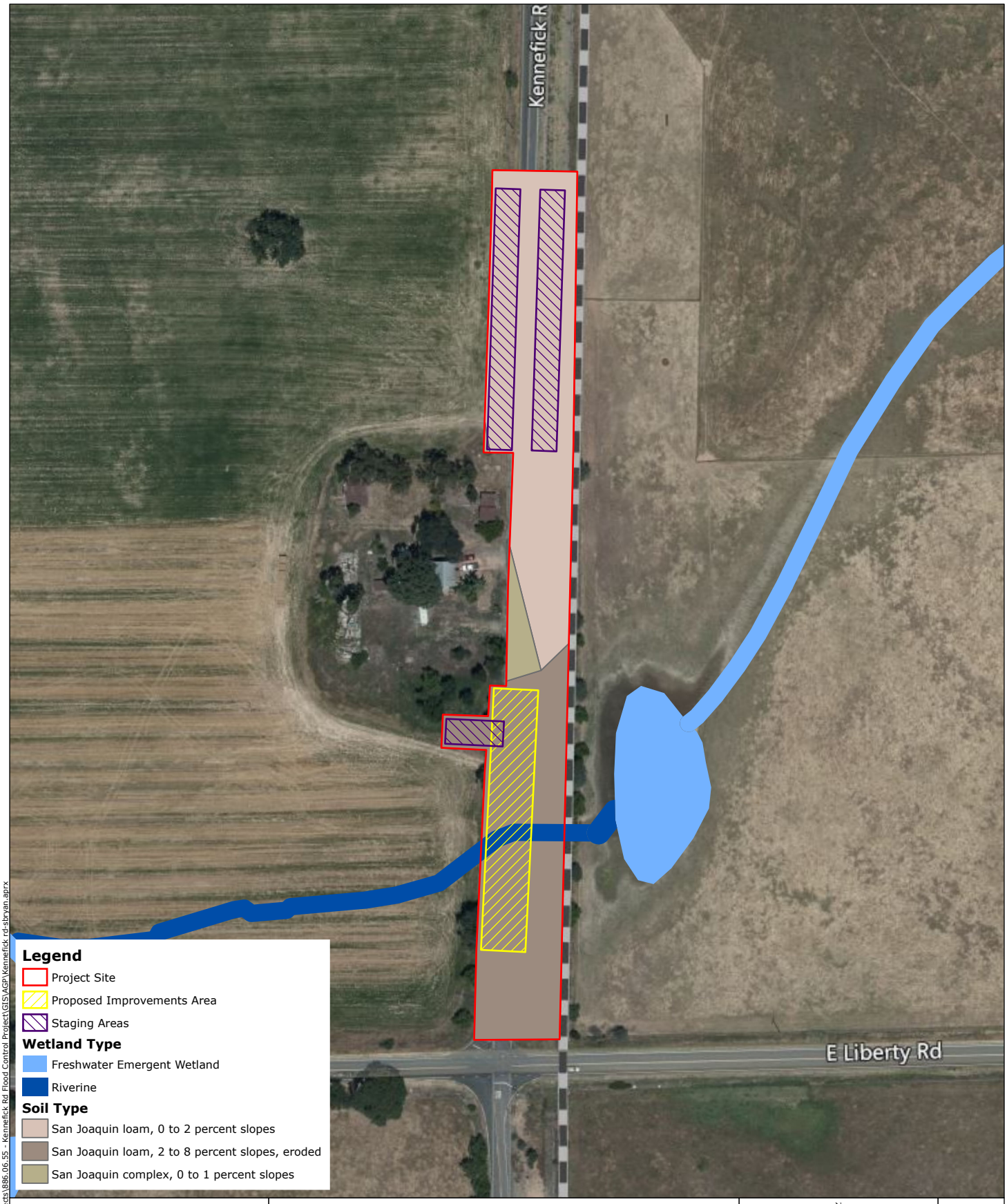
1 in. = 6,000 ft.

0 2,000 4,000 6,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2020	886.06.55	cvaz/sbryan	4/7/2020	9/14/2020	drios

Document Path: E:\PW\Active Projects\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick rd-sbryan.aprx



Kennefick Road Flood Control Project

USDA Soil Survey and NWI Wetland Map

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Hybrid Aerial Basemap; USDA; NWI; NCE 2020	886.06.55	cvaz/sbryan	4/7/2020	9/14/2020	drios

Document Path: E:\P\Active Projects\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick rd-sbryan.aprx



Kennefick Road Flood Control Project

Habitats within the Project Site

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2020; California Wildlife Habitat Relationships Dataset	886.06.55	cvaz/sbryan	6/3/2020	9/14/2020	drios

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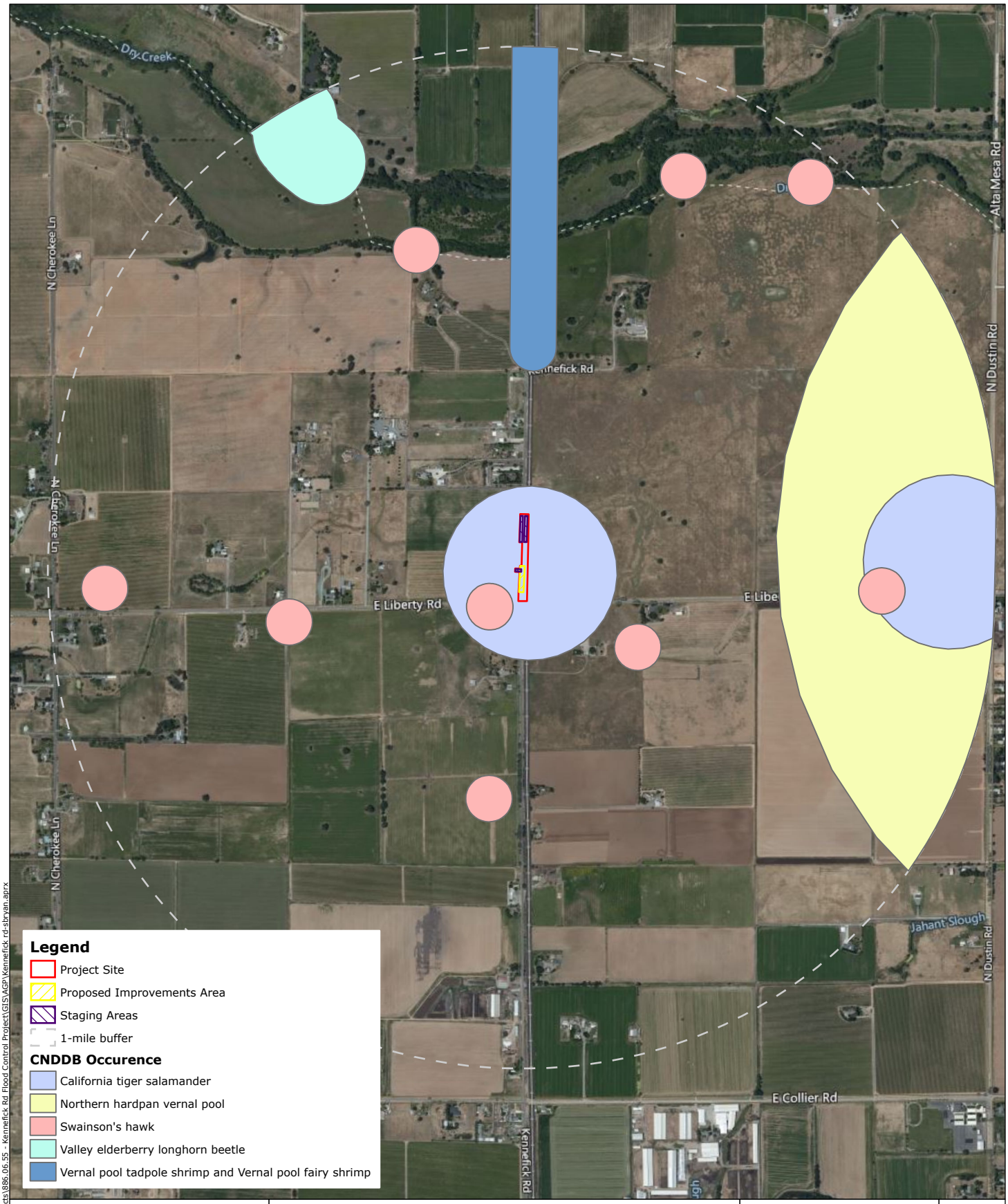

Document Path: E:\PW\Active Projects\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick rd-sbryan.aprx

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

CNDDB Map

N

1 in. = 1,500 ft.

0 500 1,000 1,500 ft.

FIGURE 4

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Hybrid Aerial Basemap; CNDDB	886.06.55	cvaz/sbryan	4/7/2020	9/14/2020	drios

APPENDIX B

SITE PHOTOGRAPHS



Looking north toward culverts from Liberty Road and Kennefick Road intersection.



Looking west at the culverts for proposed replacement.



Looking east at railroad crossing



Looking east at downstream side of culvert into ditch

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Appendix C

CULTURAL RESOURCES TECHNICAL REPORT

Kennefick Road Flood Control Project

NCE

Collaboration. Commitment. Confidence.SM

Cultural Resources Inventory Report

Kennefick Road Flood Control Project

San Joaquin County, California



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TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Project Description 1
1.1.1 Existing Conditions 1
1.1.2 Project Purpose and Need 2
1.1.3 Project Location 2
1.2 Definition of Undertaking 3
1.3 Area of Potential Effect 3
1.3.1 Drainage Improvements 3
1.3.2 Reconstruction of Travel Lanes 4
1.3.3 Utility Pole Relocation 4
1.3.4 Temporary Construction Components 4
2.0 LITERATURE REVIEW 5
2.1 Previous Inventories 5
2.2 Previously Recorded Resources 5
2.3 Historic Maps Consulted 6
3.0 CONSULTATION COMMUNICATIONS 7
3.1 Native American Coordination 7
3.2 Other Interested Party Coordination 8
4.0 ENVIRONMENTAL SETTING 9
4.1 Current Physical Setting 9
4.2 Geologic and Geographic Setting 9
4.2.1 Soils 10
4.2.2 Archaeological Sensitivity 10
4.3 Flora and Fauna 10
5.0 CULTURAL SETTING 12
5.1 Prehistoric Overview 12
5.1.1 The Early Period (4500–2500 BP) 12
5.1.2 The Middle Period (2500–1300 BP) 12
5.1.3 The Late Period (450–100 BP) 12
5.2 Ethnographic Overview 13
5.2.1 Northern Valley Yokuts 13
5.2.2 The Plains Miwok 14
5.3 Historic Overview 14
5.3.1 The Spanish Period (1769-1822) 14
5.3.2 The Mexican Period and American Era of Exploration (1822-1848) 14
5.3.3 The Gold Rush and Early Settlement (1848-1860s) 15
5.3.4 Agriculture, Irrigation, and Reclamation 15
5.3.5 Transportation 15
6.0 FIELD METHODOLOGY 16
6.1 Expectations 16
6.2 Inventoried Areas and Field Methods 16
6.3 Professional Qualifications 16
7.0 INVENTORY RESULTS 18
8.0 ELIGIBILITY RECOMMENDATIONS 19
9.0 MANAGEMENT SUMMARY 20
9.1 Summary 20
9.2 Determination of Effect 20

9.3 Other Considerations 20
10.0 REFERENCES 22

LIST OF TABLES

Table 1. Previous Inventory within 0.25 Miles of the APE. 5
Table 2. Previously Recorded Resources within 0.25 Miles of the APE. 6
Table 3. Tribal Representatives Identified by the NAHC. 7

LIST OF APPENDICES

Appendix A: Figures
Appendix B: 65% Design Plans
Appendix C: Records Search Results
Appendix D: Native American Correspondence
Appendix E: Photo Log

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

The County of San Joaquin (County) proposes to conduct the Kennefick Road Flood Control Project (Project) to reconstruct a segment of Kennefick Road with enhanced flood capacity (**Appendix A, Figures 1 and 2**). The work includes raising the roadway, new pavement, and culvert reconstruction (**Appendix B, 65% Design Plans**).

In February of 2017, heavy rains in the area caused flooding to wash away the culverts and destroyed over 100 feet of Kennefick Road north of Liberty Road, eliminating the only access to residences, farms, and businesses in the area. Emergency measures were taken to repair the road and restore access. Since there is no alternative route to access residences, farms, and businesses located on this section of Kennefick Road, returning the roadway to pre-disaster design capacity would likely result in future failures and disruption of access for residents and emergency services. Additionally, over the last 25 years and as recently as 2005, new homes have been built in the area, increasing the affected population. Therefore, the County is seeking to construct repairs that enhance the drainage design capacity to convey the five-year/seven-day regional precipitation event. As a result of the rain event in 2017, San Joaquin County applied for Hazard Mitigation Grant Program funding from FEMA as part of the FEMA Disaster #4308 for California (FEMA-4308-DR-California) covering the event of Severe Winter Storms, Flooding, and Mudslides. The County was successful in obtaining funds, which are being used for the Project.

1.1.1 Existing Conditions

Kennefick Road is a two-lane, 20-foot wide north-south roadway serving an agricultural area of San Joaquin County, located east of State Highway 99 and southeast of the City of Galt. Kennefick Road provides the only access to residences, farms, and businesses located north of its intersection with Liberty Road. Liberty Road is an east-west designated local roadway that is frequently used by the community and provides access to Highway 99.

Kennefick Road is bordered by a raised railroad bed on the east. The western right-of-way slopes gently to the west. Some 260 feet north of its intersection with Liberty Road, Kennefick Road crosses an unnamed drainage. Fifty feet east (upstream) of Kennefick Road, the unnamed drainage crosses beneath the Central California Traction Company Railroad track via a bridge with a 20-foot by 13-foot opening defined by one-foot wide pier walls. Flared headwalls downstream of the railroad bridge create a 30-foot wide channel between the railroad and roadway. No conveyance features were present along the adjacent roadway as stormwater was intended to flow over the roadway. The FEMA AE Zone floodplain map suggests this created backwater flooding above (east) of the roadway. West of the roadway, survey data did not pick up a defined channel. The 2017 disaster event and/or activities since that date have deposited a significant amount of sediment downstream of the road, resulting in an essentially flat floodplain that extends for approximately 2,000 feet downstream before sloping westward. Trees, shrubs, and grasses are located within the right-of-way on both sides of the road.

Erosion

Soil erosion is occurring near the mouth of the railroad bridge abutment located adjacent to the project area. That erosion appears to have been caused by the placement of an emergency

culvert 1.5 feet higher than the original flowline of the unnamed drainage, according to a review of survey data compared to data from a 2014 FEMA flood insurance study.

Drainage
The unnamed drainage crosses Kennefick Road about 260 feet north of Liberty Road flowing east to west. It is an ephemeral tributary that conveys overflow from Dry Creek (located north of the project area) across agricultural land. During a large flood event, the water flow was intended to flow over the road without destroying it.

After the 2017 storm event, emergency repairs were performed on the road. Two 18-inch equivalent arch corrugated metal pipes (CMPs) and a 12-inch circular CMP asphalt pipe were installed (**Figure 3**). The installed culverts function, but do not provide protection from similar or more severe storm events like the one experienced in 2017. In other words, the current culverts convey less than 30 cubic feet per second (cfs), while the storm event required nearly 500 cfs conveyance. Project goals are to meet this conveyance metric.

1.1.2 Project Purpose and Need
The purpose of the Project is to provide improved access and drainage for Kennefick Road that will ensure access to properties north of Liberty Road during five-year/seven-day regional precipitation events. The Project will reconfigure and rebuilt roadway and culverts patched after the 2017 event. The Project is intended to meet the following objectives:

- Design and construct conveyance facilities for the unnamed drainage passing under Kennefick Road to convey the five-year/seven-day regional precipitation event (approximately 500 cubic feet per second [cfs]).
- Provide long term, safe, and stable access for residents and emergency services during major storms.
- Protect residents and businesses from disruption and risks due to flooding from the five-year/seven-day regional precipitation event.
- Repair Kennefick Road in the vicinity of the emergency section.

1.1.3 Project Location
The Project is located in an unincorporated area of the County near the City of Galt, California (see **Figures 1 and 2**). The project area encompasses improvements within the roadway, County right-of-way (ROW), and adjacent privately-owned parcels. The Project involves approximately 285 feet of Kennefick Road as seen in **Figure 3**.

The project area covers approximately 0.9 acres. This includes the 0.48-acre area for proposed improvements and installation of a temporary bypass road and 0.42 acres for three potential staging areas. The temporary bypass road will maintain access to residents and property owners during construction. Within the APE, two alternatives are available for construction staging:

- Alternative 1 is a 0.19-acre area north of APE on the east side of the roadway. The County ROW has an approximate width of ten feet with the addition of an extra ten feet with the approval of Central California Traction Company (CCTC).
- Alternative 2 includes 0.04-acre area partially overlapping the Kennefick Road ROW and a 0.19-acre area north of APE on the west side of the roadway on private property. This alternative will require a temporary construction easement.

1.2 DEFINITION OF UNDERTAKING

The County has secured funding from the Federal Emergency Management Agency (FEMA). Federal funding requires compliance with the National Environmental Policy Act (NEPA) and with Section 106 of the National Historic Preservation Act (NHPA). In addition, compliance with state law is required, specifically Public Resource Code Section 21083.2 and 21084.1 of the California Environmental Quality Act (CEQA). As the lead federal agency, FEMA prepared a Record of Environmental Consideration (REC) to ensure Project compliance with the NEPA and Section 106 of the NHPA. The County will act as the CEQA lead agency. NCE has been retained to complete technical studies in compliance with the CEQA including Native American consultation under Assembly Bill 52 (AB-52).

This report describes an archaeological inventory of approximately 0.9 acres including both staging alternatives conducted by NCE as an initial step in state compliance processes. All work was designed to comply with current state and professional standards. Those standards state the goals of an intensive archaeological inventory (maximum 15-meter transect interval) are to:

- Establish an Area of Potential Effect (APE),
- Identify prehistoric and historic period archaeological resources in the APE,
- Evaluate identified resources as to their eligibility for listing in the California Register of Historical Resources (California Register), and
- Provide management recommendations for those properties considered eligible for the California Register.

1.3 AREA OF POTENTIAL EFFECT

A 0.9-acre APE was established for the Project (see **Figure 3**). It was determined the boundaries of the Area of Direct Impact and Area of Indirect Impact are coincident for this project; therefore, are referenced as the APE. Ground-disturbing activities will occur within the APE's proposed improvements including excavation of earth with heavy equipment, stockpiling of material, and heavy equipment driving over the ground. Staging areas will be temporary and rehabilitated after construction. There are no proposed vertical elements (e.g. streetlights and road signs) that would indirectly impact any nearby historic properties. During operations in the APE, there will be a temporary increase in construction traffic levels, dust, equipment noise, and vibrations.

Project improvements are proposed on an approximately 285-foot segment located north of the intersection of Liberty and Kennefick roads. Improvement descriptions are provided in the following sections.

1.3.1 Drainage Improvements

Kennefick Road currently has several underground culverts. As part of the Project new culverts will be installed. Three reinforced concrete box culverts (RCBC) will be installed underneath the roadway, consisting of six modular sections, a cutoff wall and headwall at both ends, and four wingwalls. All three culverts will be placed at streambed depth and two will be slightly raised on one end to convey flow amounts similar to those of the disaster event in 2017 (five year/seven day event) with minimal impact to the Water Surface Elevation Level (WSEL). Riprap or other flow control measures are under consideration. The new culverts will require excavation of a maximum area 40 feet in length by 40 feet in width. Maximum excavation depth for the culvert will be approximately eight feet below the existing grade and one foot below for the riprap.

1.3.2 Reconstruction of Travel Lanes

Kennefick Road will be reconstructed with one 10-foot travel lane in each direction with a narrow gravel shoulder approximately 1.5 feet wide. The total width of the roadway prism will be approximately 23 feet wide and alignment would match the existing alignment. The elevation of the roadway would be raised one to two feet. Fill may be required on the shoulders to stabilize the raised roadway. The pavement will be sloped at a minimum of two percent cross-slope and eight percent for the shoulders. The roadway along the corridor over proposed culverts will be constructed using a 5.5-inch reinforced concrete pavement layered over a geotextile fabric. The rest of the roadway along the corridor will be constructed using a six-inch thick aggregate road base, overlaid by approximately three-inches of asphalt-concrete road surface, resulting in an approximately nine-inch thick roadway. The 10-foot-wide lanes will be signed and striped according to Caltrans' and Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) standards.

1.3.3 Utility Pole Relocation

Two utility poles will be relocated during Project implementation. The removal of the existing poles from their current location to a new location is in a preliminary design phase and exact locations and excavation requirements are unknown. However, standard 40-foot-high utility poles require a maximum excavation depth of six feet at a diameter of 18 to 24 inches. It is likely four 18- to 24-inch diameter holes will be excavated to maximum excavation depths of six feet during Project implementation.

1.3.4 Temporary Construction Components

As previously stated in **Section 1.1.3**, two alternatives are available for construction staging within the APE. Alternative 1 is a 0.19-acre area north of APE on the east side of the roadway. The County ROW has an approximate width of ten feet with the addition of an extra ten feet with the approval of CCTC. Alternative 2 includes 0.04-acre area partially overlapping the Kennefick Road ROW and a 0.19-acre area north of APE on the west side of the roadway on private property. This alternative will require a temporary construction easement. Staging area alternative selection is the contractor's responsibility to obtain permission from the appropriate property owner.

Since no alternative access exists to the north of the APE, maintaining public access on Kennefick Road during construction will require the construction of a temporary 10-foot-wide gravel road to the west of Kennefick Road. The road will be between 100 and 350 feet long depending on construction stages. Components of the temporary bypass road includes minimal grading, placement of six inches of aggregate, compaction, and restoration after Project construction. Portions of the bypass road will be located on private property. Access to the private property to construct this bypass is not guaranteed and is the contractor's responsibility to obtain permission from the property owner and a temporary construction easement.

2.0 LITERATURE REVIEW

The purpose of archival research is to create an understanding of work that has occurred in the area previously, the types of cultural resources present, and to build a historic context. Historic contexts are those patterns or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within history is made clear. Before conducting inventory activities, NCE conducted sufficient archival research to both inform expectations in the field and to develop historic contexts necessary for subsequent resource evaluations. The archival research included the Central California Information Center (CCIC) and various historic maps (e.g., General Land Office [GLO] plat maps, county and state maps), and historic aerial imagery (e.g. Nationwide Environmental Title Research (NETR) historical aerial imagery). Emphasis was placed on the identification of previous archaeological inventories and sites within a quarter mile (0.25) of the APE, known as the archival study area. The records search results received from the CCIC (# 11314L) is provided in **Appendix C**.

2.1 PREVIOUS INVENTORIES

Archival research indicated no inventories were formally reported to the CCIC within the archival study area. However, the site form for a segment of Liberty Road (P-39-004903), located within the archival study area, references one report that would have encompassed portions of the archival study area. The report is listed in **Table 1** below.

Regionally, areas of relative cultural resource sensitivity have been identified using patterns and assumptions based on common environmental factors surrounding known archaeological sites (City of Lodi 2010). Environmental factors can include areas near water sources, high ranking food resources such as salmon, waterfowl, and acorns, flat topography, and areas of political and social importance such as similar area of placement for burials or Northern Valley Yokut sweathouses.

Within the County, most known prehistoric settlements were located along creeks and rivers including the Mokelumne River and Bear Creek south of the APE. Historic resources have been known to follow the same environmental assumptions and include architectural sites dating from the Spanish Period (1529-1822) to the post-World War II period (1945-1955) and/or potentially associated archeological deposits of the same age. The project area is located some distance south of Dry Creek (some 4,400 feet) and is located along an ephemeral drainage. These data suggest the APE has only limited potential to contain archaeological resources.

Table 1. Previous Inventory within 0.25 Miles of the APE.

Report Number	Title	Author(s)	Year
SJ-06993	East Bay Municipal Utility District Supplemental Water Supply Project: Draft Interim Cultural Resources Inventory Report for the East Bay Municipal Utility District Folsom South Canal Project in Sacramento, California.	Jones & Stokes Associates	1997

2.2 PREVIOUSLY RECORDED RESOURCES

Archival research indicated one historic, built-environment resource was formally recorded within the archival study area and reported to the CCIC. The resource was described as a 100-foot-long section of Liberty Road where it crossed the Central California Traction Railroad (Dore

and Norton 1997). It was suggested the road lacked all aspects of integrity except location. The resource form referenced the Central California Traction Railroad as an associated resource of Liberty Road. However, a description of the railroad or its associated features was not provided within the resource form.

No historic properties were listed in the Office of Historic Preservation Historic Properties Directory, the Archaeological Determinations of Eligibility, or the California Inventory of Historic Resources. **Table 2** lists the two previously recorded/referenced resources located within the archival study area.

Table 2. Previously Recorded Resources within 0.25 Miles of the APE.

Site Number	Age	Description	Last Recorded	NRHP Status
P-39-004903/ CA-SJO-000326H	Historic	Segment of Liberty Road	1997	Unevaluated
JSA-EBMUD-1	Historic	Central California Traction Railroad	Unknown	Unknown

2.3 HISTORIC MAPS CONSULTED

Historic maps and aerial imagery reviewed as part of the present inventory are listed below with observations.

- An 1858 GLO survey plat map for Township 5 North, Range 7 East, and an 1859 GLO survey plat map for Township 4 North, Range 7 East. Maps on file at the Bureau of Land Management General Land Office Records. Neither map depicted Kennefick Road or Liberty Road intersecting to the south of the APE. The 1858 survey map depicted two short southwest to northeast-trending minor roads crossing Sections 31 and 32. The 1858 map also depicted a structure with the label, “Cummings” located to the west of the APE. This structure is believed to be a historic farmhouse.
- A 1908 version of the Lockeford USGS quadrangle map at a 1:31,680 scale available from the USGS TopoView website. The map depicts the Cummings house without a label. Not shown on the 1858 and 1859 GLO survey plats, the 1908 USGS topographic map depicts the creek located within the APE, Kennefick Road, and Liberty Road.
- A 1953 version of the Lockeford USGS quadrangle map at a 1:24,000 scale available from the USGS TopoView website. This map is similar to the USGS topographic map from 1908. The 1953 map also depicts four new buildings surrounding the Cummings house and the Central California Traction Railroad paralleling Kennefick Road to the east.
- A 1968 version of the Lockeford USGS quadrangle map at a 1:24,000 scale available from the USGS TopoView website. The map differs slightly from previous years depicting one building to the west of the Cummings house and farming areas symbolized within the archival study area.
- Aerial imagery from 1957, 1964, 1967, and 1993 to 2016 from NETR historical aerial imagery. It appears through the years a variety of structures and vehicles were placed and razed on the Cummings house property at the time the imagery was captured. Imagery from 1957, 1964, and 1967 show the Cummings house with two smaller buildings and one large building immediately north of it. There was also one long rectangular building to the west of the Cummings house. By 2016, the large building was razed. The buildings were most likely a variety of sheds and barn houses for agricultural operations. The Central California Traction Railroad can be seen paralleling Kennefick Road to the east.

3.0 CONSULTATION COMMUNICATIONS

3.1 NATIVE AMERICAN COORDINATION

According to 36 CFR section 800.2(a)(2), FEMA may utilize the *Programmatic Agreement Among the Federal Emergency Management Agency, the California State Historic Preservation Officer, and the California Governor's Office of Emergency Services* to fulfill its Section 106 responsibilities and those of other Federal agencies that designate FEMA as the lead Federal agency (FEMA 2014). For the present Project, FEMA is the lead federal agency responsible for conducting Section 106 consultation with Native American tribes.

Following Assembly Bill 52 (AB-52) as identified in the PRC Section 21080.3.1(b)(2) of CEQA, Native American tribes identified by the Native American Heritage Commission (NAHC), must be invited to consult on projects. Native American correspondence was initiated by NCE with a letter to the NAHC, sent February 25, 2020. The letter requested a search of their Sacred Lands File (SLF) and a contact list for regional tribes that may know of tribal cultural resources within or immediately adjacent to the APE. A response was received from the NAHC on March 3, 2020, which indicated negative SLF results within the vicinity of the APE. Inquiry letters were sent via certified mail on County letterhead to the individuals identified by NAHC (**Table 3**) on March 27, 2020; all the letters were claimed.

Table 3. Tribal Representatives Identified by the NAHC.

Name	Title	Affiliation
Rhonda Morningstar Pope	Chairperson	Buena Vista Rancheria of Me-Wuk Indians
Sara Setchwaelo	Chairperson	Ione Band of Miwok Indians
Katherine Perez	Chairperson	North Valley Yokuts Tribe
Gene Whitehouse	Chairperson	United Auburn Indian Community of the Auburn Rancheria
Raymond Hitchcock	Chairperson	Wilton Rancheria
Ralph Hatch	Cultural Preservation Department	Wilton Rancheria
Antonio Ruiz	Cultural Resources Officer	Wilton Rancheria
Corrina Gould	Chairperson	The Confederated Villages of Lisjan

Three tribes responded to the County regarding consultation on the Project:

- Mr. Hawkins of the Buena Vista Rancheria of Me-Wuk Indians (Buena Vista Rancheria) responded on April 14, 2020, stating their office has no tribal knowledge of cultural resources that might be impacted or compromised at the project site. The Buena Vista Rancheria had no objection to the Project and would like to be notified should there be inadvertent discoveries.
- Ms. Mayberry of the Wilton Rancheria responded on April 17, 2020, with tribal cultural resources mitigation measures to be attached to the CEQA document. She requested copies of reports or record searches completed on behalf of the Project.
- Ms. Starkey of the United Auburn Indian Community of the Auburn Rancheria (UAIC) responded on April 28, 2020, stating the tribe is unaware of any previously recorded tribal cultural resources in the project area. She described the potential of buried sites

being discovered in dune landforms that once provided high ground during flood events. The UAIC requested the APE be checked against geologic maps and included in the cultural report as part of its investigation. The tribe also requested a copy of the cultural report and the CEQA document when complete and to be informed of any inadvertent discoveries encountered during Project construction.

The County sent the requested results of the CCIC records search to the three responding tribes for their records and review. The mitigation measures received from the Wilton Rancheria will be included as part of this report and the associated CEQA document. Geologic maps were compared to the APE to determine the presence of dune landforms and assess archaeological sensitivity (see **Section 4.2.2**). The three responding tribes will be provided a copy of the present report. They will also be provided CEQA documentation from the County as part of the public review process.

Pursuant of California PRC Section 21080.3.1(b)(2) of CEQA, the 30-day response timeframe for Native American inquiry regarding the Project has expired. Consultation-related material, including NAHC letters and responses, an example of the tribal consultation letter sent, certified mail receipts, email correspondence, and mitigation measures are provided in **Appendix D**.

3.2 OTHER INTERESTED PARTY COORDINATION

Continued Project coordination has occurred with FEMA and the County via email and phone calls. If appropriate, the County and/or FEMA may do public outreach in the future.

4.0 ENVIRONMENTAL SETTING

This section provides a brief environmental context for the immediate Project-related APE and a slightly more expansive region surrounding the APE. Summaries of the current setting, geology, soils, flora, and fauna were compiled from three main sources: Impact Sciences, Inc. (2014), ESA (2014), and City of Lodi (2010).

4.1 CURRENT PHYSICAL SETTING

The County and the APE are located at the northern end of the San Joaquin Valley which forms the southern end of the Great Valley Geomorphic Province (ESA 2014; Impact Sciences, Inc. 2014). This region is mainly used for agricultural production of various crops and livestock grazing with a low density of urban and rural development (City of Lodi 2010). The County's topography is generally flat along the valley floor with rolling foothills and gradual elevation changes near the Sierra Nevada Mountains to the east (ESA 2014). The Coastal Ranges to the west contain the Diablo Range with steep grades and large elevation changes between river valleys and mountain peaks. Elevations range from approximately 25 feet below mean sea level (msl) within the Sacramento-San Joaquin Delta (Delta) to 3,626 feet above msl at Mount Boardman within the Diablo Range. Several predominantly east to west trending rivers and sloughs flow through the County, draining into the Delta at the northwest end of the County. Forty-three percent of the Delta Primary Zone is located in the County. The rivers include the Mokelumne River to the north, the Calaveras River and Mormon Slough in the center, the Stanislaus River along the County's southern border. The San Joaquin River flows north into the Delta through the south-central portion of the County.

4.2 GEOLOGIC AND GEOGRAPHIC SETTING

The San Joaquin Valley lies within the confluence of the San Joaquin and Sacramento Rivers bounded by the Coast Ranges on the west, the Sierra Nevada foothills to the east, and the Sacramento Valley to the north (ESA 2014; Impact Sciences, Inc. 2014). The two rivers eventually join and enter the San Francisco Bay. The two valleys create part of the geologic region referred to as the Great Valley Geomorphic Province (CGS 2002; ESA 2014; Impact Sciences, Inc. 2014). This valley is characterized by a long alluvial plain with a width of about 50 feet and extends 400 miles through Central California. Before its creation by the uplifting of the Coast Ranges and Sierra Nevada mountains, the valley was dominated by marine deposition. Once the seas withdrew and the mountains were formed, the valley filled with an interbedded sequence of clay, silt, sand, and gravel deposits presently reaching over 30,000 feet in depth in some areas.

The valley sediments range in age from the Jurassic Period more than 144 million years ago to the Holocene less than 10,000 years ago (Hackel 1966; Impact Sciences, Inc. 2014). The most recent sediments are alluvial deposits consisting of coarse-grained sands and gravels along the rivers and fine-grained clays and silts within flood basins and low-lying areas. Slightly older alluvial deposits are exposed in the foothill regions on the east boundary of the County and contain most of the County's groundwater supplies. The Diablo Range foothills on the southwest boundary of the County are underlain by alluvial and marine sediments deposited when an inland sea occupied the Central Valley during the Tertiary Period. The County and valley's west boundary is underlain by Cretaceous and Cenozoic strata forming a deeply buried, east-dipping synclinal trough. The southwestern boundary of the San Joaquin Valley contains great oil fields following anticlinal uplifts. Lastly, the northern boundary of the Great Valley and Sacramento

Valley is disrupted by the 2,000-foot high isolated Pliocene volcanic plug called the Marysville Buttes.

4.2.1 Soils

Soil types within the County are closely associated with alluvial action and deposition (ESA 2014). The Delta contains extensive deposits of peat and marsh soils. Lacustrine deposits can also be found throughout the Central Valley. Sand and gravel soils have been deposited within current and ancient waterways and the areas in between are rich in fertile, fine-grained clays and silts that support livestock grazing and a wide variety of crops. Crops include small grains, irrigated pasture and rice, vineyards, and fruit and nut crops (NCSS 1999).

Soils found within the APE fall within three categories as defined by the Soil Survey Staff (2020). All are derived from the San Joaquin Series (NCSS 1999). The categories include San Joaquin loam (Map Unit 238) located on 0 to 2 percent slopes, eroded San Joaquin loam (Map Unit 239) located on 2 to 8 percent slopes, and San Joaquin complex (Map Unit 241) located on 0 to 1 percent slopes. The moderately deep soils lie a duripan, and are situated on hummocky, nearly level to undulating terraces and fan remnants at low elevations (about 20 to 500 feet msl). Located to the northeast of the San Joaquin River, the soils are moderately well drained formed in alluvium derived from eroded silica-based volcanic and granitic materials from the Sierra (ESA 2014).

4.2.2 Archaeological Sensitivity

When considering known prehistoric sites identified within the Sacramento-San Joaquin Delta, nearly 80 percent are located within channel deposits, floodplains, and basins within the Delta Region (EA 1999). Sand dunes and mounds within former tidal wetlands can be archaeologically sensitive as these landforms were known to be occupied as dry havens above floodplains. This fact has been reiterated from Native American consultation conducted on behalf of the Project. At present, no prehistoric sites have been recorded in peat or peaty mucks. Surface and subsurface archaeological deposits may exist in areas relatively unaffected by agriculture or development (CALFED 1998). Subsurface deposits may be present below structures or the plow zone.

The APE is considered to be located on soils characterized by low archaeological sensitivity. Less than five percent of known prehistoric sites within the Delta Region have been identified on organic soil, basin, and fan and terrace landforms like those underlying the APE. Furthermore, given the long history of agricultural use in the Delta Region surrounding the APE it is unlikely that intact surface or shallow subsurface deposits exist within the APE.

4.3 FLORA AND FAUNA

The County was previously dominated by oak savannah, saltbush, riparian woodland, wetlands, and perennial grassland communities that sheltered an abundance of endemic wildlife and plant species (Impact Sciences, Inc. 2014). Since the late 1800s, urban and industrial development has contributed to major habitat loss with less than four percent of the original native habitat remaining in the region. Presently, the County and San Joaquin Valley comprise a vast agricultural region where native habitats and the associated populations of plants and wildlife have been markedly reduced by human activities. Native plant habitats that still exist within the County include grassland, oak woodland/savannah, chaparral, riparian woodland, and wetlands. The region also functions as an important migratory pathway of the Pacific Flyway.

The APE is located on a channelized intermittent creek/ditch in a mixed agricultural and urban area surrounded by grasslands (CDF 2002; City of Lodi 2010). Croplands and urban areas

provide food and water for wildlife but generally provide short-term shelter due to the frequency of disturbance (Mayer and Laudenslayer 1988). Urban habitats contain a mix of landscaped native and exotic ornamental plants. Annual grassland is typically composed of herbaceous exotic grasses, forbs, and occasionally weedy species. These can include perennial ryegrass (*Lolium perenne*), wild oats (*Avena* sp.), foxtail barley (*Hordeum murinum*), soft chess (*Bromus hordeaceus*), ripgut brome (*Bromus diandrus*), and stork's bill (*Erodium botrys*). Plant species near the intermittent creek could include the common cattail (*Typha latifolia*) and tule rush (*Scirpus acutus*).

A wide variety of wildlife species live in the region (Mayer and Laudenslayer 1988; City of Lodi 2010). Common rodents and mammals include the California ground squirrel (*Spermophilus beecheyi*), California vole (*Microtus californicus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and striped skunk (*Mephitis mephitis*). Birds in the area include the red-winged blackbird (*Agelaius phoeniceus*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), yellow-billed magpie (*Pica nuttali*), American crow (*Corvus brachyrhynchos*), rock dove (*Columba livia*), American robin (*Turdus americana*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), red-tailed hawk (*Buteo jamaicensis*), burrowing owl (*Athene cunicularia*), ring-necked pheasant (Phasianus colchicus), and various waterfowl and wading birds. Amphibians and reptiles can also be found within the APE such as garter snake (*Thamnophis* sp.), pond turtle (*Emys marmorata*), and a variety of toads, frogs, and salamanders.

5.0 CULTURAL SETTING

This section provides a brief historical context for the APE and surrounding San Joaquin Valley. Summaries of the prehistoric, ethnographic, and historic periods were compiled from three main sources referencing Heizer (1978): Impact Sciences, Inc. (2014), ESA (2014), and City of Lodi (2010).

5.1 PREHISTORIC OVERVIEW

It is believed human occupation of the northern San Joaquin Valley dates before the terminal Pleistocene Epoch roughly 12,000 years before present (BP) (City of Lodi 2010; Impact Sciences, Inc. 2014; ESA 2014; Lillard et al. 1939; Mintier 2009). The earliest sites in and around the County are located on the San Joaquin Valley–Sierra Nevada foothills interface. These sites are dominated by stemmed points and formed flake tools with diagnostic shapes dating between 6750 and 6500 BP, or the Early Holocene. Few sites date to the Middle Holocene (6500–4500 BP). Those found contain artifacts associated with the Early Holocene with the addition of Pinto Series projectile points. Archaeological excavations in the Central Valley suggest the Delta region has been heavily occupied throughout the Late Holocene (4500 BP–present). Three major prehistoric Late Holocene periods have been identified: the Early Period (4500–2500 BP), the Middle Period (2500–1300 BP), and the Late Period (450–100 BP).

5.1.1 The Early Period (4500–2500 BP)

The Early Period is attributed to the Windmiller Pattern derived from several lower Sacramento Valley sites (CA-SJO-56, -68, -142, -168, CA-SAC-107, and -127) and one Stockton area site (CA-SJO-112). This period is characterized by the exploitation of various mammals, fish, birds, and hard seeds. Artifact assemblages include large spear and projectile points, at least two types of fishhooks, trident fish spears, baked clay net sinkers, pecan-shaped fish-line sinkers, cooking balls, quartz crystals, and various charm stones. Groundstone artifacts include the mortar and pestle, and handstone and milling slab. Common bone tools identified include needles, flakers, and awls. Formal cemeteries were located within and away from villages with the deceased in the prone position, fully extended, and often face down with their head to the west. Burials often contained red ochre and rich grave offerings.

5.1.2 The Middle Period (2500–1300 BP)

The Middle Period is commonly identified with the Berkeley Pattern which suggests a greater emphasis on acorn consumption. Sites attributed to this period include CA-SAC-43 (Brazil Mound) and CA-SAC-66 (Morse Mound). Artifact assemblages include more numerous and varied mortars and pestles, a well-developed bone industry, coiled basketry inferred by the evidence of bone awls, charm stones, and various baked clay objects. Evidence of technological innovations such as ribbon flaking of chipped stone artifacts are identified and toward the end of this period, the arrow point replaced the dart point. Burials suggest people of this period were less concerned with body orientations. Burials contained tightly flexed bodies or the rare cremation with funerary goods. Projectile points imbedded in less than five percent of skeletons suggest evidence of warfare (ESA 2014; Impact Sciences, Inc. 2014).

5.1.3 The Late Period (450–100 BP)

The Late Period is identified with the Augustine Pattern which appears to be related to the Berkeley Pattern. Sites attributed to this period include CA-STA-44 (Hoods Creek site) and CA-CCO-138 (Hotchkiss Mound). The Augustine Pattern is characterized by an increase in

ceremonial and social organization. Trade appeared to be well developed and acorns were exploited at a greater intensity. Artifacts identified in the period include mortars and pestles, hopper mortars, smaller arrow points (including serrated, small side-notched obsidian projectile points), an especially elaborate baked clay industry including figures and pottery vessels (Cosumnes Brownware), flanged tubular smoking pipes (cloud blowers), clamshell disk beads, and harpoons. Archaeological investigations indicate an increase in village sedentism, population growth, beads used as a standard monetary exchange, and cremations. Mortuary rituals included the introduction of pre-interment burning of offerings in grave pits.

5.2 ETHNOGRAPHIC OVERVIEW

The Penutian-speaking Northern Valley Yokuts territory encompasses most of the County and is roughly bounded by the foothills of the Sierra Nevada on the east, the crest of the Diablo Range on the west, the north bend of the San Joaquin River to the south, and the Calaveras and Mokelumne Rivers to the north (City of Lodi 2010; ESA 2014; Impact Sciences, Inc. 2014). During prehistoric times, it is inferred that part of the County was occupied by Miwok. The Miwok consist of five distinct cultural groups, each of which spoke a different Miwokean language (Kroeber 1925; Levy 1978). The Northern Sierra Miwok occupied the foothill and mountain reaches of the Mokelumne and Calaveras rivers and the Plains Miwok occupied portions of the Central Valley including the lower reaches of the Mokelumne and Cosumnes Rivers and the banks of the Sacramento River, from Rio Vista to Freeport and south nearly to Stockton. Unfortunately, most ethnographic information for Native Americans in the Central Valley was gathered as second-hand accounts from other tribes. During the 1800s, disease and other forms of cultural disruption destroyed Native American tribal cultures in the Central Valley. For example, the Northern Valley Yokuts were virtually wiped out by malaria and smallpox epidemics in the 1830s.

5.2.1 Northern Valley Yokuts

The Northern Valley Yokuts population was estimated to vary from 11,000 to more than 31,000 individuals concentrated along waterways to the east side of the San Joaquin River. Each Tribelets was governed by a headman and spoke their dialect of the Yokuts language. Settlements were located on top of low mounds near the banks of larger water systems. Settlements were composed of earth-covered ceremonial assembly chambers; wedge-shaped single-family dwellings (te) made of tule, in which each family had separate quarters; the communal mat-covered gabled kawi dwelling; and sweathouses.

Subsistence was centered around waterways and marshes where salmon, white sturgeon, river perch, and other species of fish were caught with dragnets, harpoons, and hook and line. the riverine environment also attracted waterfowl and small game. It is suggested that big game was a minor element of the Northern Valley Yokut diet. Plant foods consisted of acorns, tule roots nuts, and seeds that were processed in portable mortars made of stone or white oak. Unmodified cobbles or rocks were used as cooking stones to heat processed vegetal foods, such as acorn mush, in baskets.

The Northern Valley Yokuts made simple pottery by smoothing or pressing out a lump of clay obtained from riverbanks. The tribes used flaked stone tools such as arrowheads and knives made from chert. Supplies not available locally were acquired through trade using a network of trails and tule rafts. Obsidian was obtained from the Paiute, Miwok, and Shoshone groups on the eastern side of the Sierra Nevada. Mussels and shell beads were obtained from Costanoan and coastal Salinan groups. Baskets, bows, and arrows were obtained from Miwok groups to the north (Wallace 1978).

5.2.2 The Plains Miwok

The Plains Miwok consisted of tribelets with several base settlements and associated seasonal camps. The tribe's main source of subsistence was seasonal hunting and gathering with tobacco being the only cultivated crop. Acorns were the primary staple gathered in the fall to be stored for use in the winter. Other plant foods included laurel nuts, buckeyes, hazelnuts, roots, seeds, and berries. Periodic burning in August ensured a supply of seed-bearing annuals and forage for game in the spring. Hunting was accomplished with the bow and arrow, snares, and traps. Animal foods included antelope, elk, deer, rodents, fish, freshwater mussels and clams, land snails, insects, and various bird species. Salt was obtained from springs or trade with tribes from the Mono Lake region.

The Plains Miwok constructed various types of structures including earth-covered semi-subterranean winter dwellings, conical habitation structures fashioned from tule matting, sweathouses, menstrual huts, acorn granaries, and conical grinding huts over bedrock mortars. Assemblies were held in either circular brush structures used for summer mourning ceremonies and large semi-subterranean structures for ritual and social gatherings. The Plains Miwok worked and used stone, antler, textile, wood, and bone tools. Basketry items included baskets for carrying burdens, storing, parching, and winnowing; cradles; rackets used in ball games; sifters; and seed beaters.

5.3 HISTORIC OVERVIEW

The County is one of California's original 27 counties which was named after the San Joaquin River (Impact Sciences, Inc. 2014). The River, in turn, was named after Saint Joachim by Gabriel Moraga in 1913. The City of Stockton is centrally located and has remained the county seat since the County was established.

5.3.1 The Spanish Period (1769-1822)

Catholic missionaries entered southern California from Mexico in 1769. By 1772, Spanish explorers had conducted expeditions into the Central Valley (ESA 2014; Impact Sciences, Inc. 2014). Juan Crespi and Pedro Fages were the first to see the San Joaquin River. Other eighteenth-century explorers included Juan Bautista de Anza (1776) and Francisco Eliza (1793). Between 1806 and 1817, Gabriel Moraga (1806, 1808), Father Ramon Abella (1811), Jose Antonio Sanchez (1811), and Father Narciso Duran (1817) led expeditions in search of new mission sites. Spanish ranchos established themselves in the area, however, Spain's influence in California ended in 1821 when Mexico gained control or the region.

5.3.2 The Mexican Period and American Era of Exploration (1822-1848)

Six Spanish ranchos were located wholly or partially within the present-day County. These became Mexican land grants and include Campo de Los Franceses (including Stockton), Arroyo Seco, Zanjon de Mokuelumnes, Pescadero (claimed by Pico), Estanislao (Thompson's), and Pescadero (claimed by Higueria), and two unnamed and ultimately rejected grants applied for by José Castro and John Rowland (Mintier Harnish 2009). However, the area remained largely unsettled.

Euro-American exploration of the Central Valley began with explorers, trappers, and traders (ESA 2014). This included Jedediah Smith in 1827, the Ewing-Young expedition in 1832–1833, and the J. R. Walker party in 1834. Smith opened the Sacramento Trail in the late 1820s and reported to the Hudson's Bay Company about the quantity and quality of furs available in California (Impact Sciences, Inc. 2014). In 1828, the company sent its first trapping expedition and they established the settlement of French Camp south of the modern City of Stockton in 1832. John Frémont and his party explored south through the San Joaquin Valley in 1844 and

were reported to have experienced numerous clashes with Native Americans along the Mokelumne and Calaveras rivers.

5.3.3 The Gold Rush and Early Settlement (1848-1860s)

The discovery of gold brought thousands of gold-seekers to the Sierra Nevada (ESA 2014; Impact Sciences, Inc. 2014). This prompted ferry operators, storekeepers, innkeepers, and others who supplied the miners with goods and services to occupy the Central Valley. Following the gold rush, former gold-seekers gradually settled the region and used the area for wheat production, row/orchard crops, and cattle raising. The City of Stockton was settled by Charles Weber in the 1840s and was incorporated by 1850. The name commemorates Commodore Robert F. Stockton. As a river port, Stockton became the center for freighting and staging trade and commerce. By the 1860s, Stockton has become a major shipping point for California's grain trade moving grains from the region to primarily foreign markets. Much later in 1933, the Port of Stockton was opened becoming the first inland seaport in California (Mintier Harnish 2009).

5.3.4 Agriculture, Irrigation, and Reclamation

Most early San Joaquin settlers from 1850 through the 1870s focused on cattle raising and dry-farm cultivation of small grains to meet the economic opportunities created by the Gold Rush (ESA 2014; Impact Sciences, Inc. 2014). During the 1850s and 1860s, earthen, short, and roughly made ditches were constructed with temporary brush dams across the lower courses of the streams running west out of the Sierra Nevada. The 1862 and 1868 floods destroyed most of these early ditch systems, but farmers continued to experiment with irrigation in the region. By the early 1900s, dry-farming was surpassed by irrigated agriculture as the most profitable method allowing small farms to produce various high-yielding cash crops. These included sweet potatoes, tomatoes, figs, onions, and cotton. Irrigation systems of the region improved structurally after World War II by replacing wood structures with concrete ditches.

The Swamp and Overflow Land Act of 1850 transferred land ownership of the Delta from the federal government to the state. This allowed land to be bought and developed by private owners. Reclamation districts were established to "reclaim" what was considered prime agricultural land in the Delta region of the County. In the late 1800s, significant engineering advances included powerful dredging, extensive ditch systems, and pump stations were constructed to drain water enabling more agricultural lands to be "reclaimed". The Delta is still used as prime farmland today.

5.3.5 Transportation

The transportation system advanced through the latter decades of the nineteenth century with the construction of the Central Pacific Railroad in the 1860s (Impact Sciences, Inc. 2014). The Central Pacific Railroad was constructed in the San Joaquin Valley in the 1870s resulting in the formal establishment of several railroad towns. The railroad provided an efficient and reliable method of shipping farm products throughout the state. This led directly to the establishment of Lodi which was known as Mokelumne Station in 1869 until incorporation in 1906. The town of Tracy was similarly established by the Southern Pacific Railroad in 1882 near the junction of three previously constructed railroad lines. These included the Central Pacific Railroad between the Bay Area and San Joaquin County, a railroad to the north of Martinez, and a rail line extending south from the junction of the first two railroads. Tracy became an important commercial and service center. The County has continued to develop as a prime agricultural area with service centers and industrial hubs with many historic roads still in use. These roads provide access to farms, ranches, and small rural settlements throughout the region and have given access to a new expanding residential housing market in the County.

6.0 FIELD METHODOLOGY

6.1 EXPECTATIONS

Archival research suggests that the archaeological record of the general APE is sparse. Resources most likely to be encountered are isolated prehistoric period artifacts or lithic scatters, historic period artifacts associated with agriculture, road, or railroad development, and a variety of linear historic period features (roads, ditches, railroads). The highest probability for the presence of such sites is in material sources located near water sources including the creek within the APE. The proximity of the APE to local roadways suggests that historic period debris scatters may be encountered.

6.2 INVENTORIED AREAS AND FIELD METHODS

The objective of the field inventory was to locate, describe, and evaluate cultural resources present within the APE. Fieldwork was performed following applicable accepted federal, state, and professional standards. The APE was surveyed utilizing 15-meter transect spacing. The APE's proposed improvements area was located along the paved Kennefick Road ROW where road shoulders were examined utilizing a single pedestrian transect.

Most of the APE has experienced some level of previous disturbance. Emphasis was placed on the examination of the undisturbed or relatively undisturbed ground. Surface visibility across the APE was variable. Visibility was quite good in denuded portions of the APE. Other areas were dominated with grasses forming a fairly dense ground cover, somewhat impeding ground visibility; however, sufficient clear ground was present to ensure survey adequacy throughout the APE.

If cultural resources had been encountered, field personnel would have more thoroughly examined the immediate area to determine the type and extent of cultural material. Archaeological components including diagnostic artifacts, artifact concentrations, and features would have been described in field notebooks, photographed using 10 megapixels or better cameras, and plotted using a mapping grade GPS unit. If necessary, at least two overview photographs would have been taken per site to capture the general surroundings with attention paid to capturing the horizon (if possible) to aid in potential future relocation. If applicable, photos of artifacts would have contained a scale and all photographs would have been GPS-plotted. Upon completion of the inventory, field data GIS shapefiles would have been projected to California State Plane III (NAD 83). Isolates would have been mapped and photographed (if diagnostic) as well. No artifacts are collected during the field survey.

General overview photos were taken of the APE during the survey which can be found in **Appendix E**.

6.3 PROFESSIONAL QUALIFICATIONS

The archaeological survey was conducted on February 28, 2020, by Molly Laitinen, NCE Staff Archaeologist. Ms. Laitinen meets the Secretary of Interior's (SOI) Standards for Archaeology (36 CFR Part 61) and is a Registered Professional Archaeologist. She has four years of experience in historic preservation, archaeological investigation, and cultural resource evaluation as part of State, Federal, and professional standards in compliance with Section 106 of the NHPA and PRC Section 21083.2 of the CEQA.

Jeremy Hall, NCE Cultural Resources Project Manager, oversaw inventory activities. Mr. Hall meets the Secretary of Interior's Standards for Archaeology (36 CFR Part 61) and is a Registered Professional Archaeologist. He has 16 years of experience in historic preservation, archaeological investigation, and cultural resource evaluation as part of State, Federal, and professional standards in compliance with Section 106 of the NHPA and PRC Section 21083.2 of the CEQA.

Charles Zeier, NCE Senior Archaeologist, assisted with report preparation. Mr. Zeier has over 45 years of experience in historic preservation, archaeological and architectural surveys and evaluations, cultural resource management, Section 106 of the NHPA, and NEPA. Mr. Zeier meets the Secretary of Interior's Standards for Archaeology and is a Registered Professional Archaeologist.

7.0 INVENTORY RESULTS

The results of the inventory reflect our expectations derived from archival research, that being a relative paucity of cultural material. The present intensive inventory was limited to the 0.9-acre APE that will be directly impacted by Project implementation. The inventory did not result in the identification of new prehistoric or historic resources within the APE. Surface examination indicated that various forms of modern disturbance are present throughout most of the survey area (e.g., roadway grading, drainage ditches, extensive agricultural use).

It is noted that two architectural resources are present adjacent to the APE. They include the Central California Traction Railroad (JSA-EBMUD-1) and a building in the location of the Cummings house identified on the 1858 GLO survey plat map. Project construction and staging will occur only within the road ROW. Neither the railroad grade nor the Cummings building will be directly impacted. No vertical elements (e.g. streetlights and road signs) will be installed as a part of the Project. Consequently, neither the railroad grade nor the Cummings building will experience any level of indirect impact as a result of the Project (also, roadside vegetation largely screens both resources).

Long term and cumulative impacts of the Project on these resources were also taken into consideration. Specifically, Project design ensures that there will be no impact on the railroad grade following Project implementation. The proposed culvert does not change the WSEL in the 100-year event and lowers the WSEL in the 10- and 500-year event by 0.1 and 0.6 feet, respectively. The velocity of the peak flow does not change in either the 10- or 500-year event. In the 100-year event, the velocity resulting from the Project is lowered from two feet/second (existing conditions) to 1.4 feet/second (with the Project). Based on these considerations, neither the railroad grade nor the Cummings building were formally recorded as part of the present inventory.

8.0 ELIGIBILITY RECOMMENDATIONS

No previously identified, National Register-eligible or California Register-eligible cultural resources were present within the APE. Further, neither prehistoric nor historic period cultural resources were identified within the present APE as a result of the current inventory effort. In the absence of such resources, there is no need to assess National Register or California Register eligibility.

9.0 MANAGEMENT SUMMARY

9.1 SUMMARY

The County proposes to conduct the Project to reconstruct a segment of Kennefick Road with enhanced flood capacity. The work includes raising the roadway, new pavement, and culvert reconstruction. Approximately 0.9-acres were surveyed during the present intensive inventory. The results of the inventory generally reflect our expectations derived from archival research. The inventory did not result in the identification of new prehistoric or historic resources. As a result of the negative intensive survey, National and State eligibility determinations were not required. Surface examination indicated that various forms of modern disturbance are present throughout most of the survey area (e.g., roadway grading, drainage ditches, extensive agricultural use).

9.2 DETERMINATION OF EFFECT

Significant cultural resources (i.e., historic/eligible properties) are not present within the APE. Given the absence of historic properties, it is recommended that the Project, as proposed by the County, will not impact properties listed on or eligible to the National Register, nor will it impact historic resources that meet criteria outlined in Section 5024.1 of the California PRC. It is recommended that "*no historic properties affected*," as that phrase is viewed within the context of compliance with the Advisory Council on Historic Preservation regulations (36 CFR part 800).

9.3 OTHER CONSIDERATIONS

Every reasonable effort was made to identify any surface expression of cultural resources in the present APE. The Central California Traction Railroad (JSA-EBMUD-1) is historic in age but has not been formally recorded. Given that the railroad is located reasonably close to the Project, it will be treated as an eligible resource and provided the following protective measure to ensure construction related activities are minimized at locations where railroad features are immediately adjacent to the Project.

- CR-01: Construction fencing will be installed six feet from railroad features located immediately adjacent to the Project prior to construction activities. An archaeological monitor will be on-site to monitor the installation of the construction fencing.

If prehistoric or historic period resources are discovered during Project implementation, all activities within 100 feet should cease immediately and the County, FEMA, California Office of Historic Preservation (OHP) representatives, and appropriate tribes should be contacted immediately. Archaeological resources are not to be moved or taken from the Project site and work should not resume until authorized.

In the event human remains are discovered, the County Coroner and local law enforcement shall be notified within 24 hours of the discovery following PRC Section 5097.98 and Section 7050.5 of California Health and Safety Code to conduct proper evaluation and treatment of remains. The coroner and law enforcement agency with jurisdiction will evaluate the find to determine whether it is a crime scene or a burial. If human remains are determined to be associated with an archaeological site (burial), the OHP will be notified. The OHP will work with appropriate tribes to determine measures to take. That office will contact the appropriate tribal representatives and consult on the disposition of the remains and any associated artifacts.

Given the absence of standing structures within the survey area, an architectural inventory was determined unnecessary for the Project. The age of buildings and structures outside of the APE was not determined, none of those structures were formally recorded, and architectural resources are not considered further herein. The present report addresses only archaeological resources that date to the prehistoric and historic periods.

NCE prepared this report for use by the County as the intended beneficiary of this work. Interpretations, conclusions, and recommendations contained within the report are based in part on the information presented in other reports that are cited in the text and listed in the references. This report is subject to limitations and qualifications inherent to the referenced documents.

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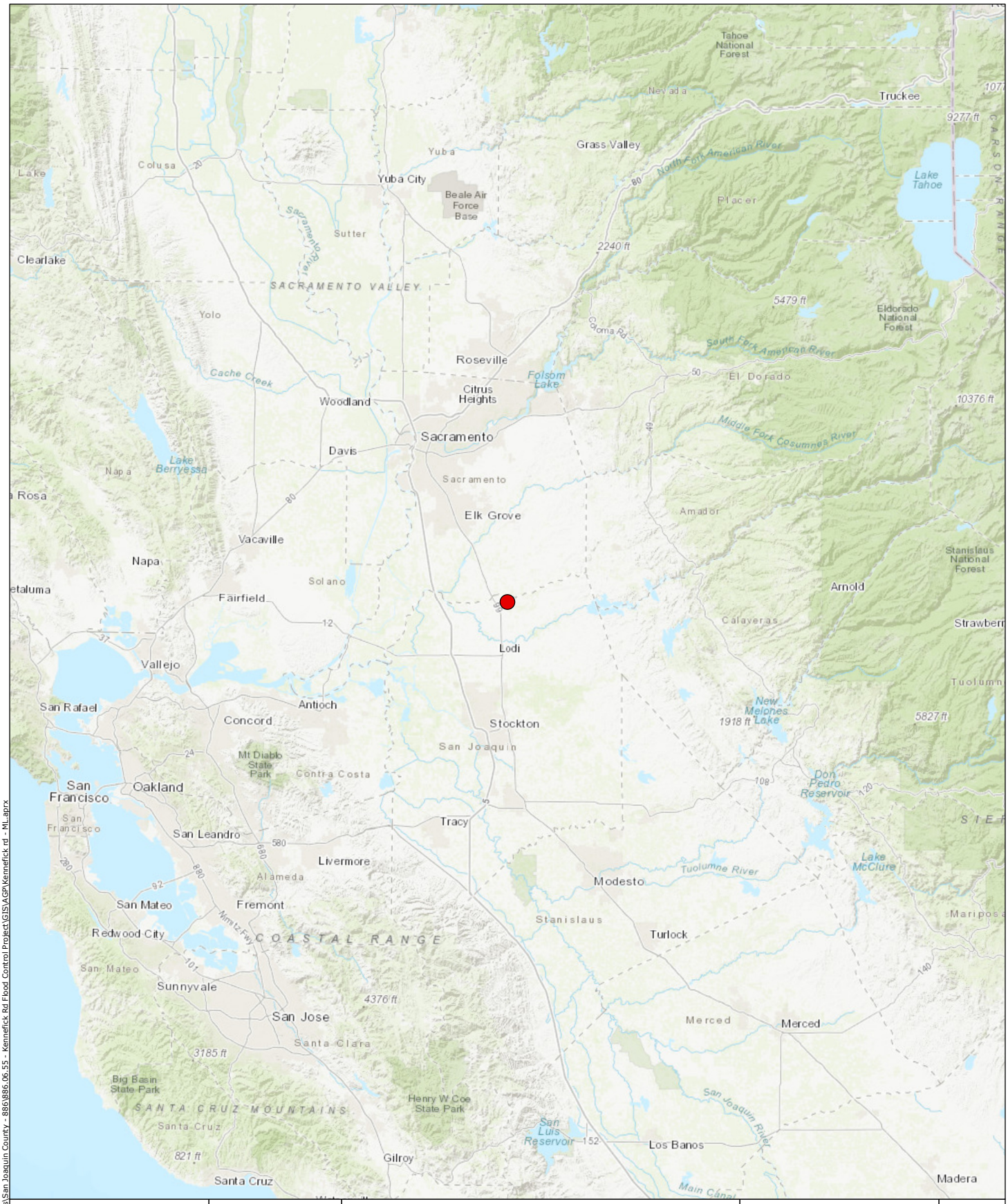
Appendix A

FIGURES



Legend

- Project Location

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Area Vicinity Map

N

1 in. = 20 mi.

0 10 20 mi.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI World Topographic Basemap, NCE	886.06.55	mlaitinen	2/13/2020	9/8/2020	jhall

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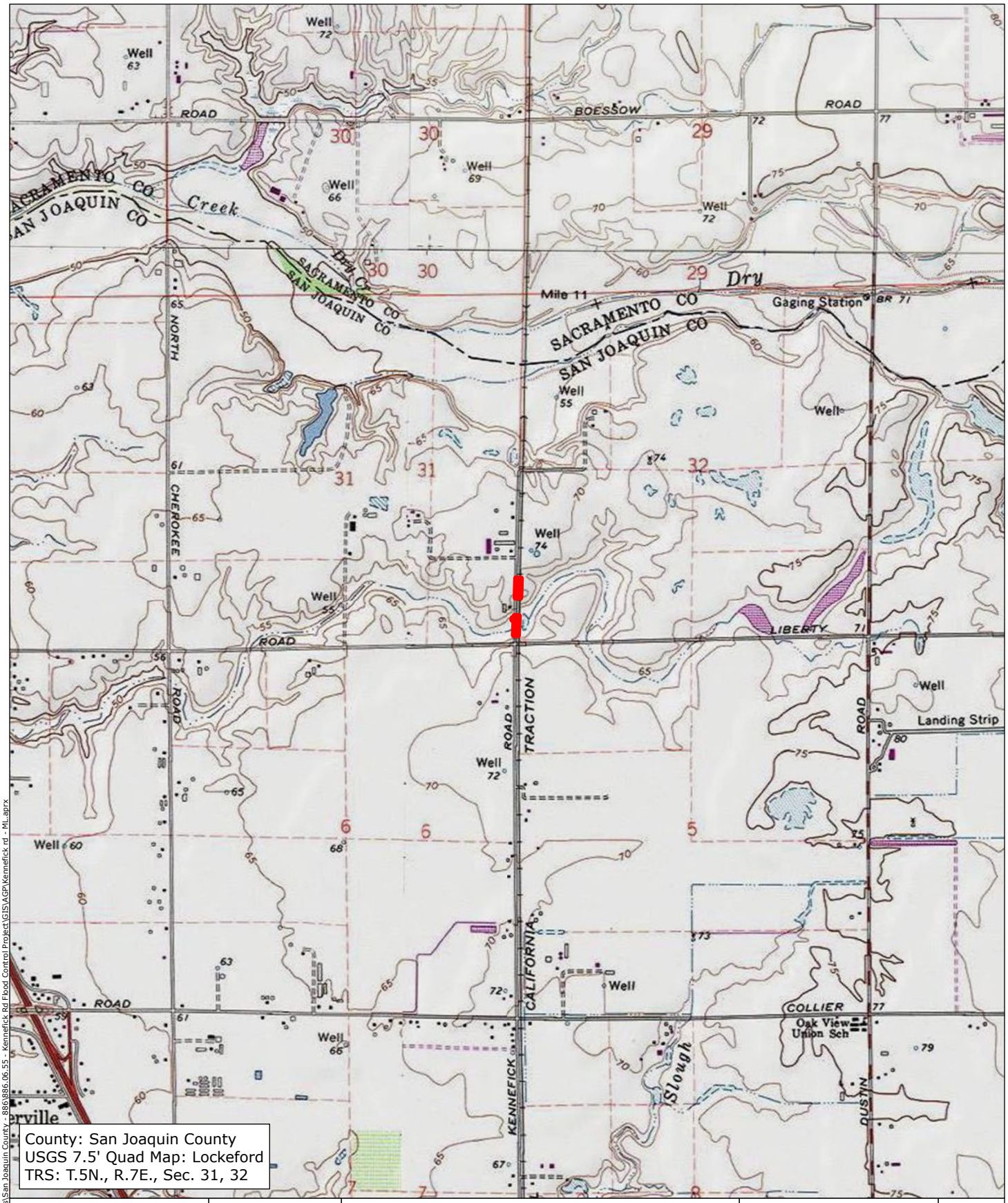


County: San Joaquin County
USGS 7.5' Quad Map: Lockeford
TRS: T.5N., R.7E., Sec. 31, 32

Legend

Project Area

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Area Location Map

N

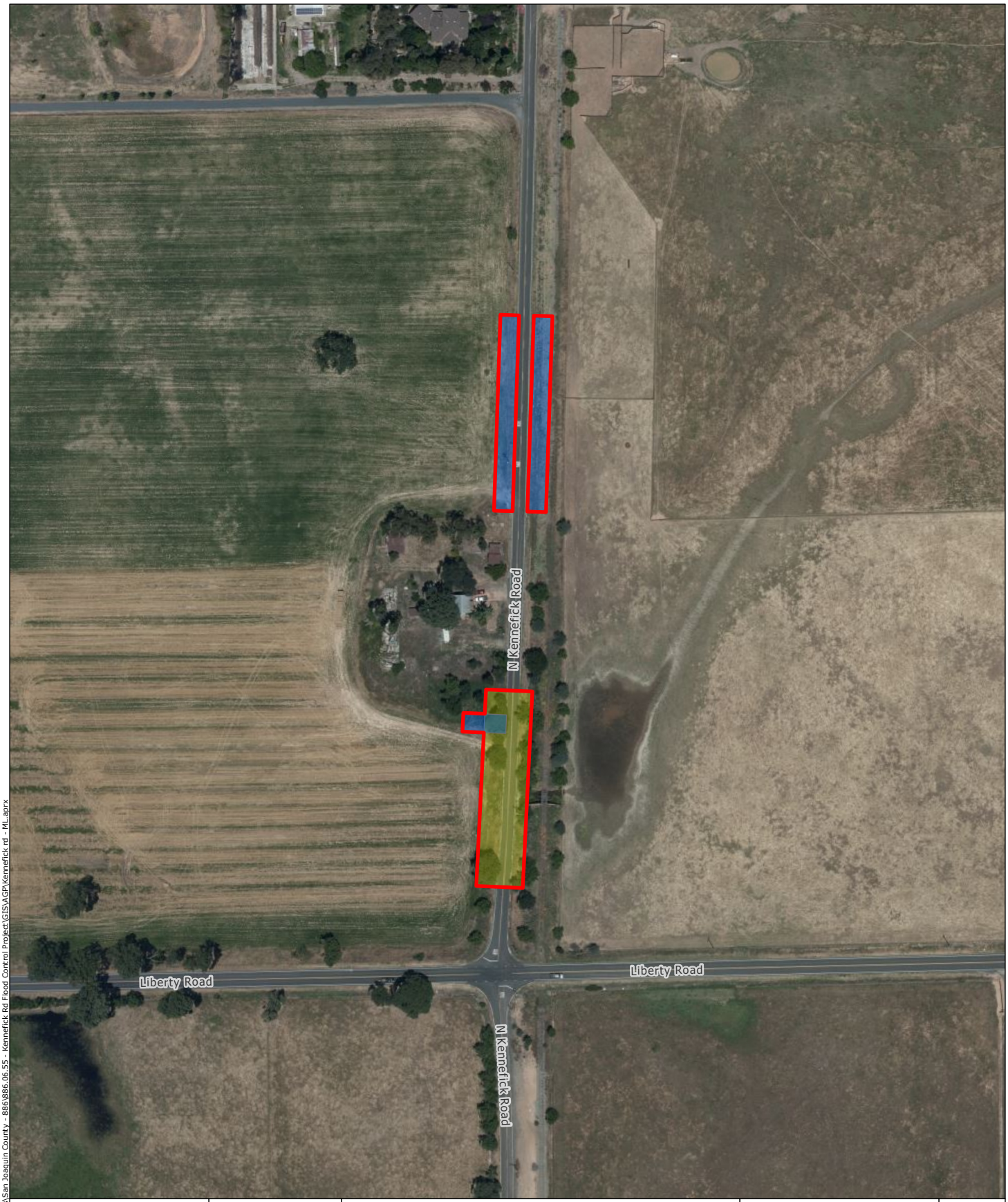
1:24,000

0 1,000 2,000 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USA Topo Maps, NCE	886.06.55	mlaitinen	2/13/2020	9/8/2020	jhall

Document Path: P:\Active Projects\San Joaquin County - 886\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick_rd - MLaprx



Legend

- APE
- Proposed Improvements Area
- Staging Area

NCE

Kennefick Road Flood Control Project

Area of Potential Effect (APE) Map

N

1 in. = 200 ft.

0 100 200 ft.

FIGURE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Map, NCE	886.06.55	mlaitinen	2/25/2020	9/14/2020	jhall

Document Path: P:\Active Projects\San Joaquin County - 886\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick rd - ML.aprx

Appendix B

65% Design Plans

DRAWER	SHEET NO.

COUNTY OF SAN JOAQUIN
DEPARTMENT OF PUBLIC WORKS
STOCKTON, CALIFORNIA

KENNEFICK ROAD FLOOD CONTROL PROJECT

FEDERAL AID PROJECT NO. CFD #XX.XXXX

To Be Supplemented by Caltrans Standard Plans 2018

INDEX OF SHEETS

SHEET 1	TITLE PAGE
SHEET 2	NOTES, LEGEND, AND ABBREVIATIONS
SHEET 3	PLAN AND PROFILE
SHEET 4	TYPICAL SECTIONS
SHEET 5	CROSS SECTIONS
SHEET 6	CONSTRUCTION DETAILS 1
SHEET 7	CONSTRUCTION DETAILS 2
SHEET 8	CONSTRUCTION DETAILS 3

THE CONTRACTOR SHALL POSSESS A CLASS A LICENSE AT THE TIME THIS CONTRACT IS AWARDED.



PROJECT LOCATION MAP

N.T.S.

COUNTY OF SAN JOAQUIN

SUBMITTED _____, 2020

DIRECTOR OF PUBLIC WORKS

REGISTERED PROFESSIONAL ENGINEER
FRANZ G. HAIDINGER
NO. C 64725
EXP. 06/30/21
CIVIL
STATE OF CALIFORNIA

Preliminary

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65% SUBMITTAL

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COUNTY OF SAN JOAQUIN

TITLE SHEET

KENNEFICK ROAD FLOOD CONTROL PROJECT

SHEET	TOTAL SHEETS
1	8

DRAWER	SHEET NO.		
DRAWER	SHEET NO.		

P:\Public Projects\Kennefick Road\Design\Drawings\Kennefick Road Drawings.dgn 11 Nov 2020 @ 1:45pm by KW (JPC Eqn)

DRAWER	SHEET NO.

GENERAL NOTES

1. EXISTING HIGHWAY AND UTILITY FACILITIES MUST REMAIN IN PLACE UNLESS OTHERWISE NOTED.
2. ALL EXISTING TREES, SHRUBS, FENCES, CONCRETE WALKS AND OTHER FRONTAGE IMPROVEMENTS ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED. PAYMENT FOR REMOVAL OF TREES, SHRUBS AND FENCES NOTED IN PLANS MUST BE CONSIDERED AS PAID UNDER CLEARING AND GRUBBING.
3. THE CONTRACTOR WILL BE RESPONSIBLE FOR ADEQUATELY SCHEDULING INSPECTION AND TESTING AT ALL FACILITIES CONSTRUCTED UNDER THIS CONTRACT WITH A MINIMUM 24 HOUR NOTICE TO THE COUNTY. ALL TESTING MUST CONFORM TO THE STANDARD SPECIFICATION. ALL RE-TESTING WILL BE PAID BY THE CONTRACTOR.
4. THE CONTRACTOR MUST OBTAIN ALL PERMITS AND LICENSES REQUIRED FOR THE CONSTRUCTION AND COMPLETION OF THE PROJECT, AND MUST PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS AND CONDITIONS OF ALL PERMITS AND APPROVALS APPLICABLE TO THE PROJECT.
5. THE CONTRACTOR MUST EXERCISE DUE CAUTION AND CAREFULLY PRESERVE SURVEY BENCH MARKS, CONTROL POINTS, REFERENCE POINTS AND ALL SURVEY STAKES, AND MUST BEAR ALL EXPENSES FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.
6. PRIOR TO COMMENCING ANY WORK, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE IN THE FIELD THEIR MAIN SERVICE LINES AND LATERALS. THE CONTRACTOR MUST NOTIFY MEMBERS OF THE UNDERGROUND SERVICES ALERT (U.S.A.) 48 HOURS IN ADVANCE OF PERFORMING EXCAVATION WORK BY CALLING THE TOLL-FREE NUMBER (1-800-227-2600 OR 811).
7. THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING HIGHWAY AND UTILITIES FACILITIES' LOCATIONS AND DEPTHS. IT WILL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO LOCATE AND PROTECT ALL EXISTING HIGHWAY AND UTILITY FACILITIES, SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. THE CONTRACTOR WILL BE REQUIRED TO COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICES TO THE PROJECT. PAYMENT FOR THIS WORK WILL BE CONSIDERED TO BE INCLUDED IN THE VARIOUS ITEMS OF WORK.

LEGEND

PROPOSED FEATURES

- EMBANKMENT
- PAVEMENT
- HMA
- AGGREGATE BASE
- CONCRETE
- RCBC
- FILL
- SHOULDER
- 1/3 — DETAIL NUMBER / SHEET NUMBER

EXISTING FEATURES

- AC
- AB
- SUBGRADE OR BASE MATERIAL
- BUILDING
- CONCRETE/CONCRETE GRADE BREAK
- CURB AND GUTTER
- X — FENCE/RAILING
- FENCE/RAILING
- T — UNDERGROUND CABLE TELEVISION
- E — UNDERGROUND ELECTRICAL
- GAS — UNDERGROUND GAS
- W — UNDERGROUND WATER
- WALL
- ctv — CABLE TV BOX
- e — ELECTRICAL UTILITY BOX
- FIRE HYDRANT
- FOUND SURVEY MONUMENT
- mb — MAIL BOX
- SIGN
- uv — UNKNOWN UTILITY VAULT
- w — WATER METER
- v — WATER VALVE
- 12" — TREE, TRUNK DIAMETER
- TEMPORARY CONTROL POINT

ABBREVIATIONS

NOT ALL ABBREVIATIONS LISTED ARE USED IN THESE PLANS

@	AT
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
APPROX.	APPROXIMATE
AVG.	AVERAGE
BKF	BACKFILL
BMP	BEST MANAGEMENT PRACTICES
BOT	BOTTOM
CA	CALIFORNIA
CATV	CABLE/TELEVISION
CB	CATCH BASIN
CBC	CALIFORNIA BUILDING CODE
CF	CUBIC FEET
C&G	CURB AND GUTTER
CIDH	CAST IN DRILLED HOLE
CL, C/L	CENTERLINE
CLR	CLEAR
COMM	COMMUNICATION
CONC	CONCRETE
CONST	CONSTRUCTION
CY	CUBIC YARD
° OR DEG	DEGREE(S)
DI	DROP INLET
ø OR DIA	DIAMETER
DIR.	DIRECTION
DR	DRIVE
DS	DOWNHILL SIDE
DWG	DRAWING
DWGS	DRAWINGS
DWS	DETECTABLE WARNING SURFACE
DW, DWY	DRIVEWAY
E	EAST
EA.	EACH
EB	EASTBOUND
EG	EXISTING GRADE
ELEC	ELECTRIC
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ES	EDGE OF SHOULDER
EXC	EXCAVATION
EXIST; EX	EXISTING
FFC	FRONT FACE CURB
FG	FINISH GRADE
FH	FIRE HYDRANT
FL	FLOWLINE
FT or '	FOOT, FEET
FTG	FOOTING
G	GAS
GB	GRADE BREAK
GV	GATE VALVE
H	HORIZONTAL
HMA	HOT MIXED ASPHALT
ID	IDENTIFICATION
IN. or "	INCH
INT	INTERSECTION
ISA	INTERNATIONAL SYMBOL OF ACCESSIBILITY
LEN	LENGTH
LF	LINEAR FEET
LOL	LAYOUT LINE
LS	LUMP SUM
MAX	MAXIMUM
MDD	MAXIMUM DRY DENSITY
MDP	MIDPOINT
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MON	MONUMENT
MUTCD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
N	NORTH
(N)	NEW
N/A	NOT APPLICABLE
N/O	NORTH OF
NIC	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
# OR NO.	NUMBER
O.C.	ON CENTER
O.D.	OUTER DIAMETER
OG	ORIGINAL GRADE
OPP	OPPOSITE
±	PLUS OR MINUS
(P)	PROPOSED
PCC	PORTLAND CEMENT CONCRETE
PCI	PAVEMENT CONDITION INDEX
PL	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PT.	POINT
P.T.D.F.	PRESSURE TREATED DOUGLAS FIR
PVMT	PAVEMENT
R	RADIUS
RC	RELATIVE COMPACTION
RCBC	REINFORCED CONCRETE BOX CULVERT
RD	ROAD
R&D	REMOVE AND DISPOSE
RECT	RECTANGULAR
RET	RETAINING
RHMA	RUBBERIZED HOT MIX ASPHALT
R&R	REMOVE AND REPLACE
RW	RETAINING WALL
ROW	RIGHT-OF-WAY
S	SLOPE, SOUTH
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SF	SQUARE FOOT/FEET
SHT	SHEET
SSMH	SANITARY SEWER MANHOLE
SSCO	SANITARY SEWER CLEAN OUT
STA	STATION
STD	STANDARD
STL	STEEL
STR	STRUCTURE
SW	SIDEWALK
SY	SQUARE YARD
TBX	TELECOMMUNICATIONS BOX
TC	TOP OF CURB
TEMP	TEMPORARY
TP	THERMO-PLASTIC
TYP	TYPICAL
U/G	UNDERGROUND
US	UPHILL SIDE
VAR	VARIES
V	VERTICAL
WL	WATERLINE
W	WATER, WEST
WM	WATER METER
WV	WATER VALVE
WB	WESTBOUND
W/	WITH

REGISTERED PROFESSIONAL ENGINEER — FRANZ G. HAIDINGER — No. C 64725 — EXP. 06/30/21 — CIVIL — STATE OF CALIFORNIA

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COUNTY OF SAN JOAQUIN

NOTES, LEGEND, AND ABBREVIATIONS

KENNEFICK ROAD FLOOD CONTROL PROJECT

SHEET	TOTAL SHEETS
1	8

DRAWER	SHEET NO.		
DRAWER	SHEET NO.		

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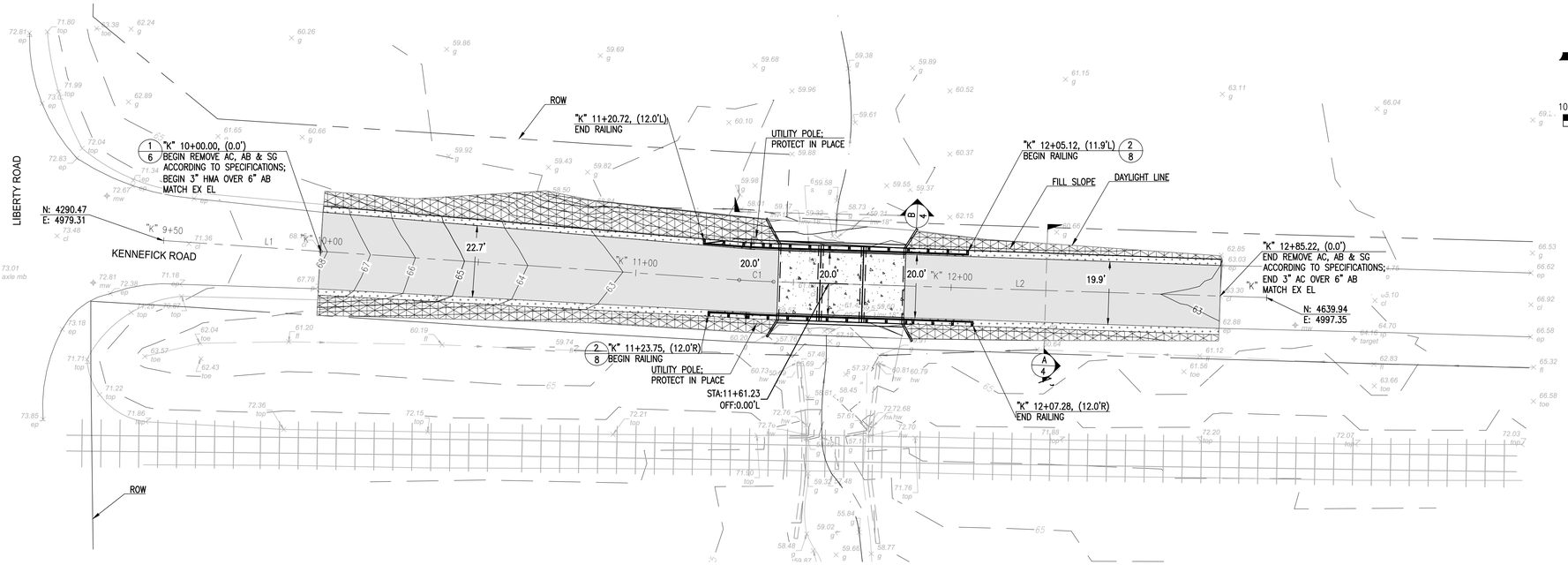
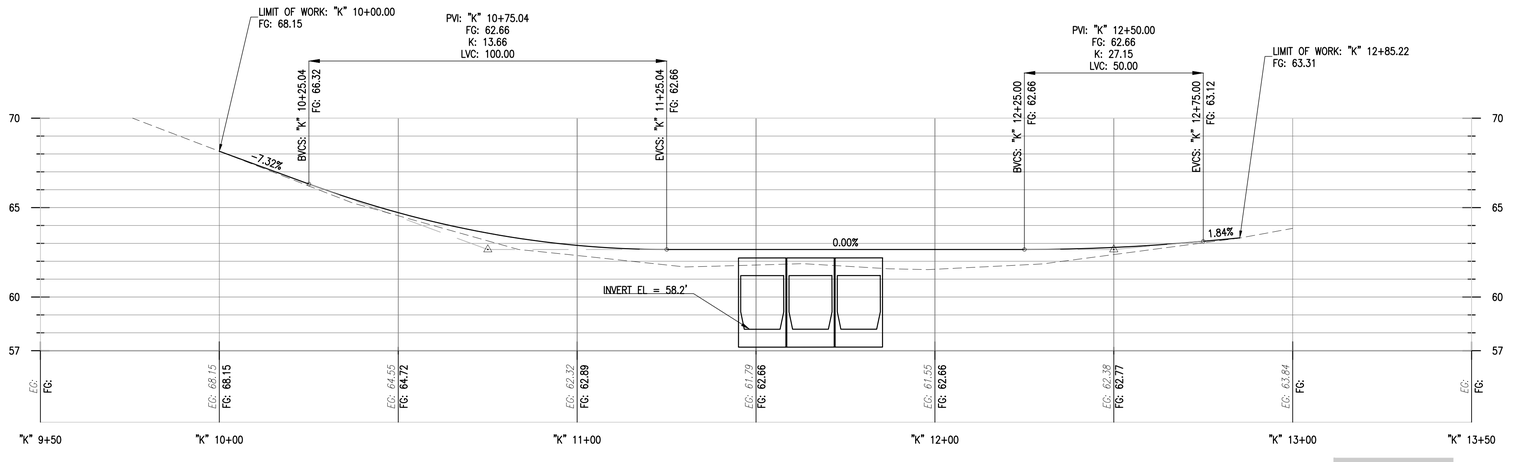


PLAN

K ALIGNMENT TABLE			
NUMBER	RADIUS	LENGTH	LINE/CHORD DIRECTION
L1		182.71	N3° 55' 05.35"E
C1	300.00	10.89	N2° 52' 40.85"E
L2		156.30	N1° 50' 16.35"E



SCALE:	
HORIZONTAL:	1" = 20'
VERTICAL:	1" = 4'

PROFILE

Preliminary
NOT FOR CONSTRUCTION
65% SUBMITTAL

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COUNTY OF SAN JOAQUIN

PLAN AND PROFILE

KENNEFICK ROAD FLOOD CONTROL PROJECT

SHEET	TOTAL SHEETS
3	8

DRAWER	SHEET NO.
DRAWER	SHEET NO.

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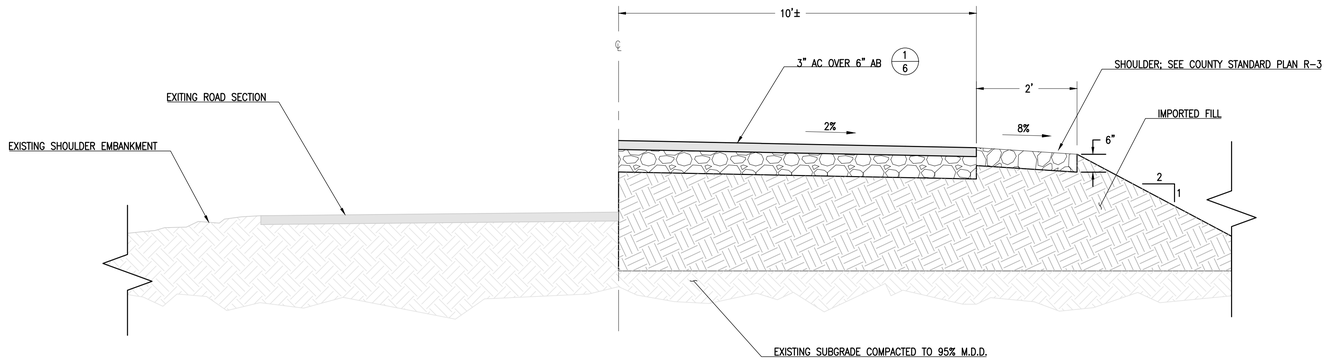

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4

TYPICAL ROAD SECTION

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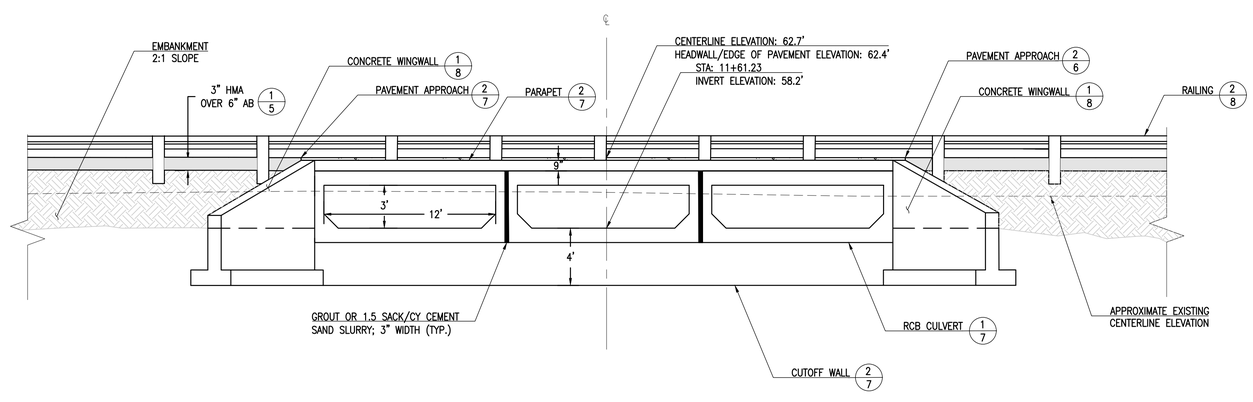


B
4

SECTION B–B'
CULVERT DESIGN

N.T.S

File: P:\Active Projects\San Joaquin County\...\Kennefick Road Bridge\Design\Civil\Sheets\Typical Sections.dwg Layout: C8.2 Plotted: 6/11/2020 8:13:56 AM By: Franz Haidinger

Know what's below. Call before you dig.

REGISTERED PROFESSIONAL ENGINEER
FRANZ G. HAIDINGER
NO. C 64725
EXP. 06/30/21
CIVIL
STATE OF CALIFORNIA

Franz Haidinger
RCE 64725

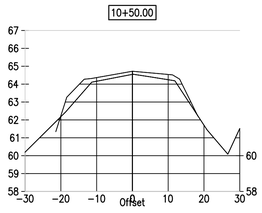
NCE
8795 Folsom Blvd., Suite 250
Sacramento, Ca. 95826
(916) 388-5655 * Fax (916) 388-5676

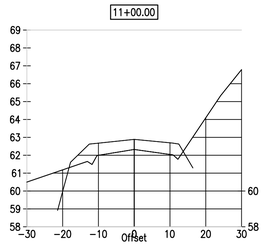
Preliminary
NOT FOR CONSTRUCTION
65% SUBMITTAL

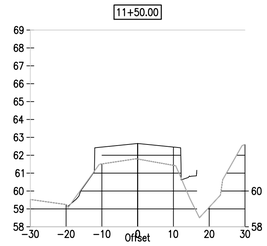
DRAWN BY	DATE	PROJECT ENGINEER	DATE	CHECKED BY	DATE	COUNTY OF SAN JOAQUIN	20 40	TYPICAL SECTIONS	KENNEFICK ROAD FLOOD CONTROL PROJECT	SHEET	TOTAL SHEETS
KW	07/10/20	FGH	07/10/20	JW	06/09/20					4	8

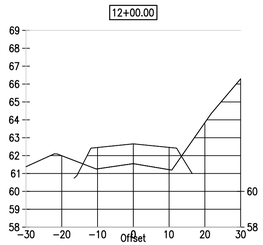
DRAWER	SHEET NO.		
DRAWER	SHEET NO.		

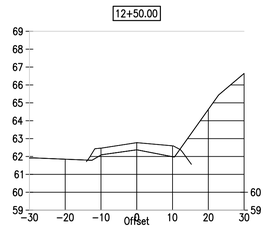
DRAWER	SHEET NO.











1/5 CROSS SECTIONS

N.T.S.

Preliminary

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KW	07/10/20	FGH	07/10/20	JW	06/09/20

COUNTY OF SAN JOAQUIN

20 40

CROSS SECTIONS

KENNEFICK ROAD FLOOD CONTROL PROJECT

SHEET	TOTAL SHEETS
5	8

DRAWER	SHEET NO.		
DRAWER	SHEET NO.		

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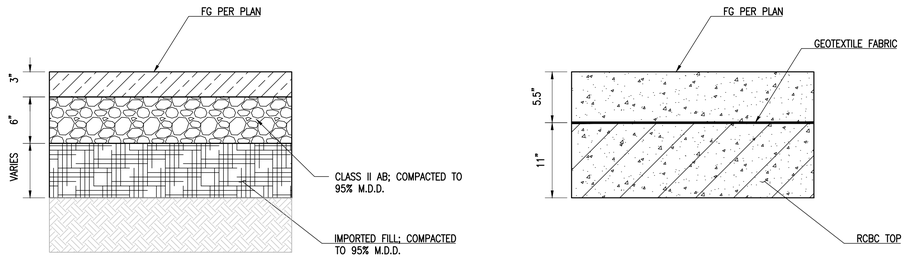
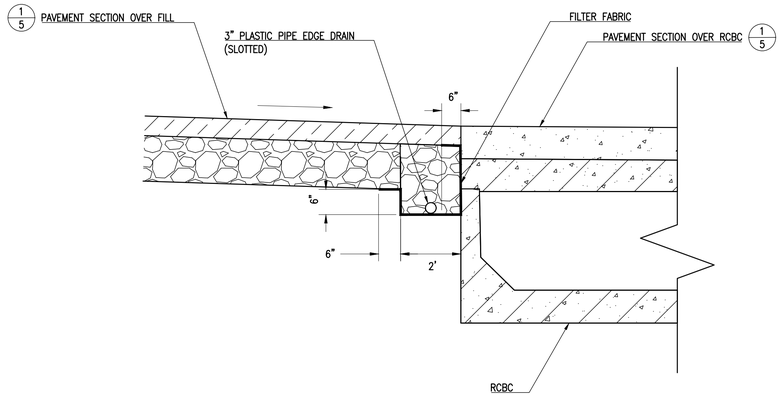


1/6 TYPICAL PAVEMENT SECTION
N.T.S.



2/6 CROSS DRAIN INTERCEPTOR AT STRUCTURAL APPROACH
N.T.S.

LEGEND – DETAIL SHEETS

AGGREGATE BASE
PCC
RCBC
HMA PAVING
FILL
EXISTING AC
EXISTING AB
EXISTING SUBGRADE OR BASE MATERIAL

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Franz Haidinger
RCE 64725

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DRAWN BY	DATE	PROJECT ENGINEER	DATE	CHECKED BY	DATE
KW	07/10/20	FGH	07/10/20	JW	06/09/20

COUNTY OF SAN JOAQUIN

TITLE SHEET

KENNEFICK ROAD FLOOD CONTROL PROJECT

SHEET	TOTAL SHEETS
6	8

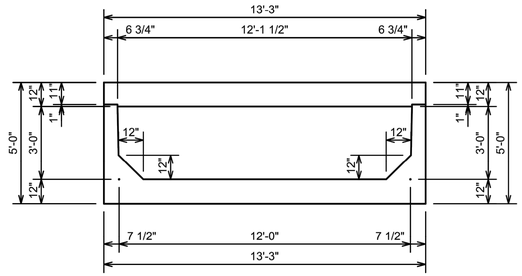
DRAWER	SHEET NO.
DRAWER	SHEET NO.

DRAWER	SHEET NO.

Plotted: Jun 10, 2020 @ 11:10am By: Franz Haidinger
G:\Active Projects\San Joaquin County\...\Kennefick Rd Flood Control Project\Civil\Sheets\Kennefick Rd Typical Sections.dgn

DRAWER	SHEET NO.

FILE NO. 123-BC-AREAS



SLAB TOP SECTION - 0.487 CU.YD. PER FOOT - 1980 LBS. PER FOOT
16'-0" LONG SLAB TOP SECTION - 7.79 CU.YD. - 31,570 LBS.
BOTTOM SECTION 0.663 CU.YD. PER FOOT - 2690 LBS. PER FOOT
16'-0" LONG BOTTOM SECTION - 10.61 CU.YD. - 42,980 LBS.

12'-0"x3'-0" BOX CULVERT
(WITH 12" FLOOR AND 12" ROOF)

35.18 SQUARE FEET
FLOW AREA
28.98 FEET
WETTED PERIMETER

SEE NOTE 1

12'-0"x3'-0" 16' LONG
BOX CULVERT
STRUCTURE
JENSEN PRECAST

REV.	DATE	DESCRIPTION
3		
2		
1		
0	01-14-05	NEW DRAWING

JENSEN PRECAST

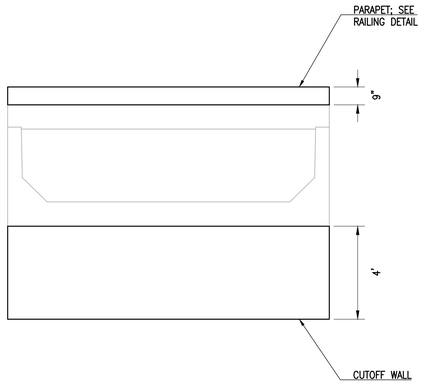
THIS DOCUMENT AND THE DATA DERIVED HEREIN OR HEREWITH IS NOT TO BE REPRODUCED, USED OR DISCLOSED, IN WHOLE OR IN PART, BY ANYONE WITHOUT THE WRITTEN PERMISSION OF JENSEN PRECAST.

DATE:
CHECKED BY:

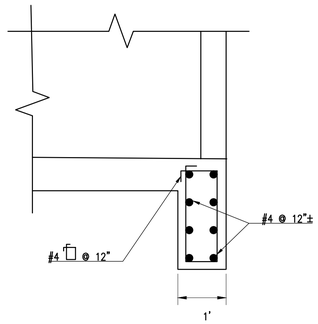
1/7 12' x 3' PRECAST REINFORCED CONCRETE BOX CULVERT
N.T.S.

NOTES:

1. LENGTH OF PRECAST BOX CULVERT SHALL BE 12.5 FEET. TWO (2) BOX CULVERTS SHALL BE PLACED CONSECUTIVELY TO SPAN 25 FEET. THE DESIGN PRESCRIBES SIX (6) PRECAST SECTIONS.
2. SPACE BETWEEN PARALLEL RCBC'S SHALL BE 3" AND FILLED WITH GROUT OR 1.5 SACKS PER CUBIC YARD CEMENT SAND SLURRY ALLOWED TO CURE PRIOR TO BACKFILLING EXCAVATION.



SECTION VIEW



CUTOFF WALL
PROFILE VIEW

2/7 CONCRETE CUTOFF WALL AND HEADWALL
N.T.S.

SOURCE: CALTRANS 2018 STANDARD PLAN , DWG D84

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COUNTY OF SAN JOAQUIN

CONSTRUCTION DETAILS 2

KENNEFICK ROAD FLOOD CONTROL PROJECT

SHEET	TOTAL SHEETS
7	8

DRAWER	SHEET NO.
DRAWER	SHEET NO.

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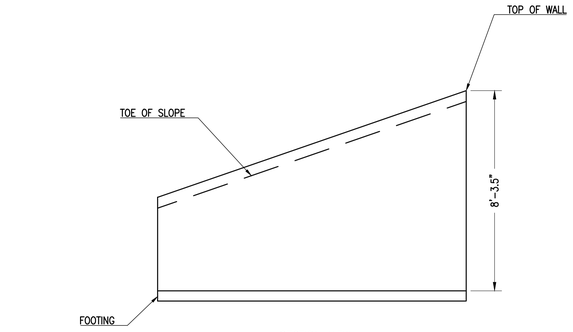
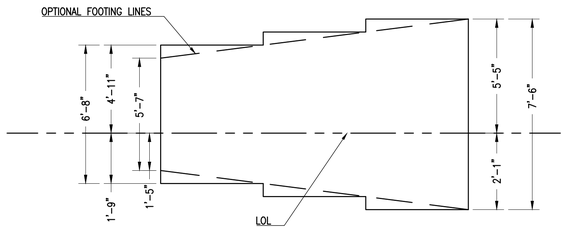
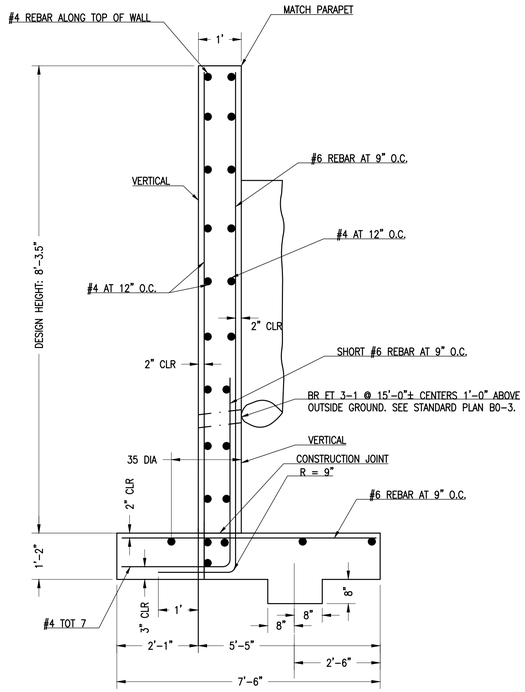


SECTION VIEW



PLAN VIEW OF FOOTING

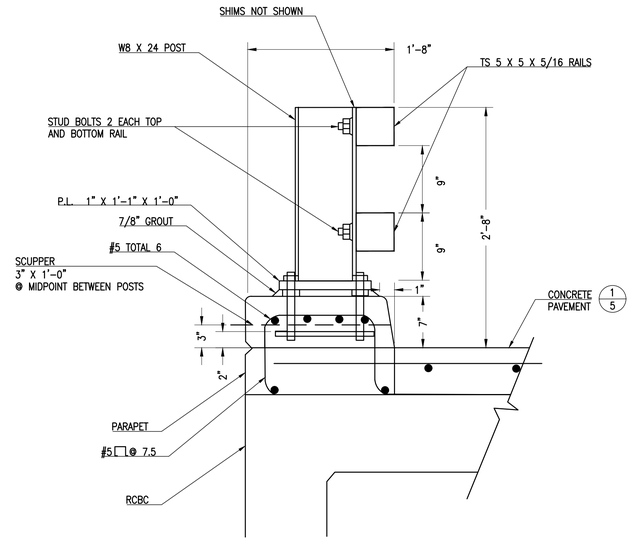


SECTION VIEW

1/8 TYPE A CONCRETE WINGWALL
N.T.S.

NOTES:

1. PLACE 1/2" EXPANSION JOINT FILLER AT JUNCTION OF BOX AND WALL.
2. WINGWALLS SHALL BE INSTALLED AT A 45 DEGREE ANGLE FROM THE EDGE OF PAVEMENT.
3. SEE STANDARD PLANS D83B FOR WINGWALL, PARAPET, AND CULVERT CONNECTIONS AND D84 FOR WINGWALL DETAILS.



2/8 RAILING
N.T.S.

SOURCE: CALTRANS 2018 STANDARD PLAN B11-65

NOTES:
1. FOR PARAPET DETAILS, SEE STANDARD PLAN D83B AND MODIFY AS SHOWN HERE.

REGISTERED PROFESSIONAL ENGINEER
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EXP. 06/30/21
CIVIL
STATE OF CALIFORNIA

Franz Haidinger
RCE 64725

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KW	07/10/20	FGH	07/10/20	JW	06/09/20	COUNTY OF SAN JOAQUIN		CONSTRUCTION DETAILS 3	KENNEFICK ROAD FLOOD CONTROL PROJECT	SHEET 8	TOTAL SHEETS 8

DRAWER	SHEET NO.
DRAWER	SHEET NO.

Plotted By: Kevin Wong Plotted On: 8/6/2020 8:41:45 AM File Name: P:\Projects\Kennefick Road Flood Control Project\Design\Civil\Plans\Sheets\Kennefick Road Flood Control Project - Construction Details 3.dwg

Appendix C

RECORDS SEARCH RESULTS

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 2/17/2020

Records Search File No.: 11314L
Access Agreement: #370
Project: Kennefick Road Flood Control, Intersection Kennefick Road and Liberty Road, Acampo

Molly Laitinen
NCE
P.O. Box 1760
Zephyr Cove, NV 89448
775-588-2505

mlaitinen@ncenet.com

Dear Ms. Laitinen:

The Central California Information Center received your record search request for the project area referenced above, located on the Lockeford 7.5' quadrangle in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☒ custom GIS maps ☒ shape files ☐ hand-drawn maps

Summary Data:

Resources within the project area:	1: P-39-004903, a short segment of Liberty Road.
Resources within ¼-mi radius:	None formally reported to the Information Center.
Reports within the project area:	None formally reported to the Information Center. **Note:** CCaIC Report No. SJ-06993 is referenced for a different segment of Liberty Road recorded outside the project area/radius; however, the 1997 recording event for the segment involved in the current project area references a 1997 Jones and Stokes report that is not on file. See CCaIC staff notations on the P-39-004903 record, attached.
Reports within ¼-mi radius:	None formally reported to the Information Center.

Resource Database Printout (list):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Database Printout (details):	☒ enclosed	☐ not requested	☐ nothing listed
Resource Digital Database Records:	☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (list):	☐ enclosed	☐ not requested	☒ nothing listed
Report Database Printout (details):	☐ enclosed	☐ not requested	☒ nothing listed
Report Digital Database Records:	☐ enclosed	☐ not requested	☒ nothing listed
Resource Record Copies:	☒ enclosed	☐ not requested	☐ nothing listed
Report Copies:	☐ enclosed	☒ not requested	☐ nothing listed
OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD) Dated 12/17/2019	☐ enclosed	☐ not requested	☒ nothing listed
Archaeological Determinations of Eligibility:	☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☒ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Shipwreck Inventory:	☒ not available at CCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp		
Soil Survey Maps:	☒ not available at CCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx		

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Note: Billing will be transmitted separately via email by our Financial Services office *($164.05), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

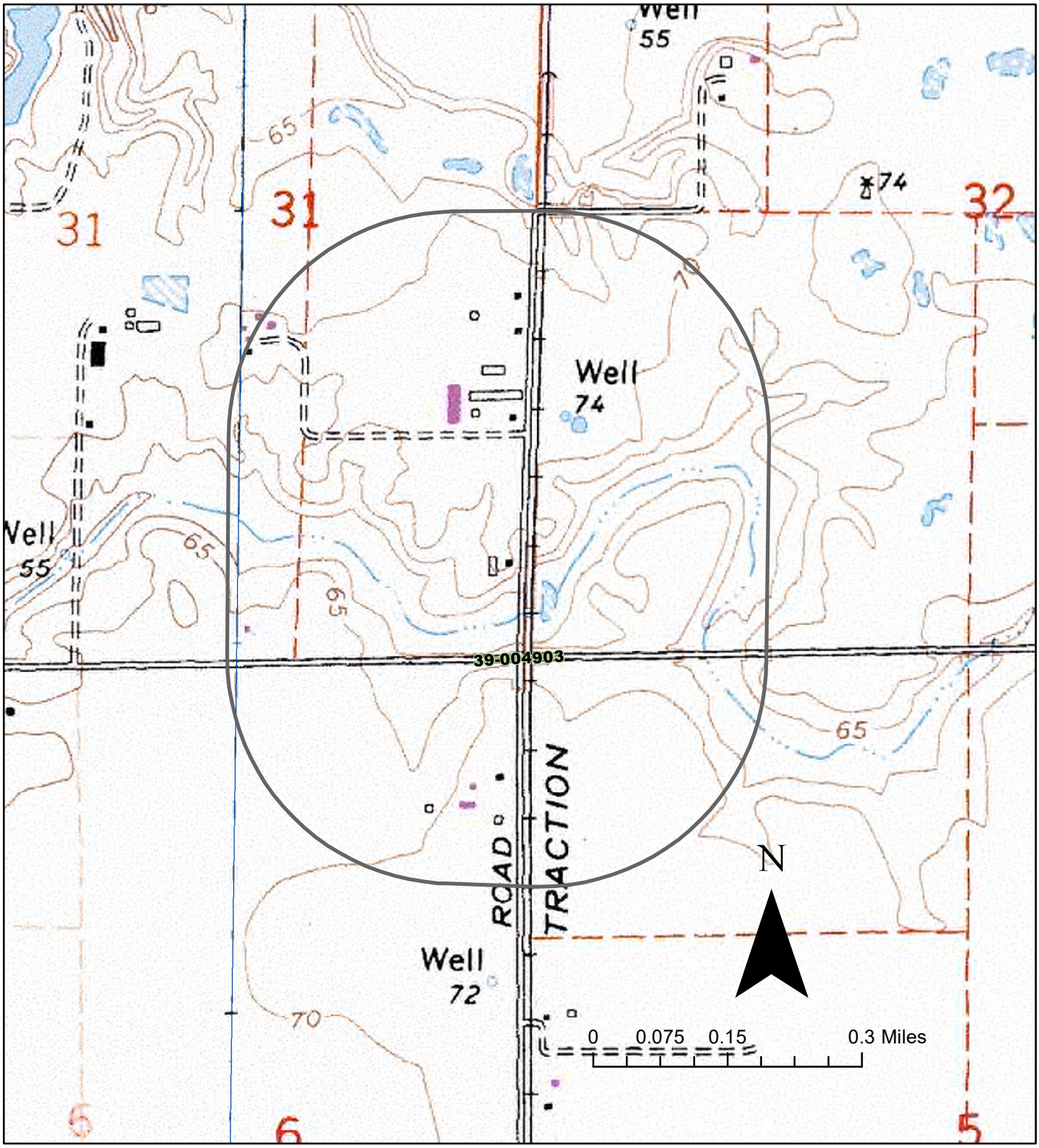
Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: Laurie Marroquin CSU Stanislaus Financial Services
lamarroquin@csustan.edu

CCaIC 11314L Kennefick Road Flood Control
Resource P-39-004903, Liberty Road
Lockeford 7.5' 1:10,000-scale



Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-39-004903	CA-SJO-000326H	Other - JSA-EBMUD-19; Resource Name - Liberty Road	Structure	Historic	HP37	1997 (Christopher Dore, W. L. Norton, Jones & Stokes); 2005 (MR Bowen, Jones & Stokes)	SJ-06993

Resource Detail: P-39-004903

Identifying information

Primary No.: P-39-004903
Trinomial: CA-SJO-000326H
Name: Liberty Road
Other IDs:

Type	*Name*
Other	JSA-EBMUD-19
Resource Name	Liberty Road

Cross-refs:

Attributes

Resource type: Structure
Age: Historic
Information base: Survey
Attribute codes: HP37 (Highway/trail) - highway/trail
Disclosure: Unrestricted
Collections: No
Accession no(s):
Facility:

General notes

Two short segments recorded; 1997 survey report not on file

Recording events

Date	*Recorder(s)*	*Affiliation*	*Notes*
9/7/2005	MR Bowen	Jones & Stokes	SJ-06993
7/8/1997	Christopher Dore, W. L. Norton	Jones & Stokes	1997 survey report not on file 2/17/2020

Associated reports

Report No.	*Year*	*Title*	*Affiliation*
SJ-06993	2006	Cultural Resources Inventory and Evaluation Report for the Freeport Regional Water Project, Sacramento & San Joaquin Co.s, CA	Jones & Stokes

Location information

County: San Joaquin
USGS quad(s): Lockeford
Address:
PLSS: T4N R8E Sec. 32 MDBM
T5N R8E Sec. 32 MDBM
T4N R7E SE¼ of SE¼ of Sec. 32 MDBM
UTMs: Zone 10 663682mE 4233531mN NAD27
Zone 10 653602mE 4233183mN NAD27

Management status

Database record metadata

	Date	*User*	
Entered:	9/30/2013		
Last modified:	2/17/2020	egreathouse	
IC actions:	*Date*	*User*	*Action taken*
	9/30/2013	jay	Added placeholder records to fill in primary number sequence.
	2/17/2020	egreathouse	eg

Record status:

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-39-004903
HRI #
Trinomial CA-SJO-3264
NRHP Status Code 6Z

Other Listings
Review Code | Reviewer | Date

*Resource Name or #: JSA-EBMUD-19

4/09

P1. Other Identifier: Liberty Road segment

*P2. Location: ☐ Not for Publication X Unrestricted

and (P2b and P2c or P2d. Attach a Location Map as necessary.)

*a. County: San Joaquin County

*b. USGS 7.5' Quad: Lockeford Date: 1968 r 1979 T 4 N; R 7 E; ¼ of ¼ of Sec 32 ; M.D. B.M.

c. Address: City: Zip:

d. UTM: Zone: 10 ; 663682 mE/ 4233531 mN (G.P.S.)

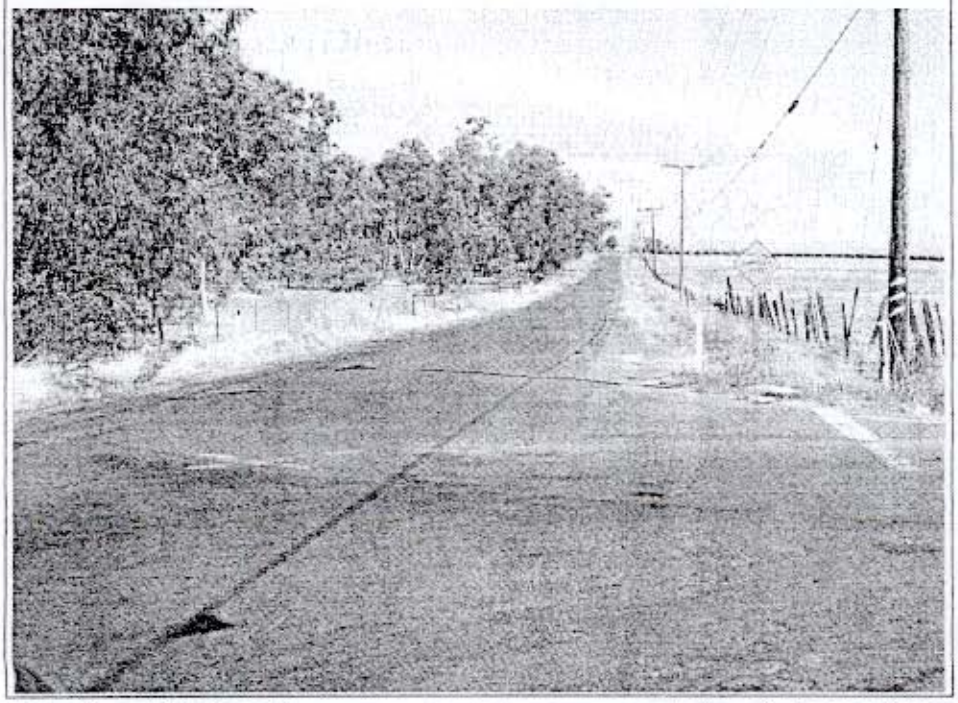
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, etc., as appropriate) Elevation:

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)

JSA-EBMUD-19 is a segment of Liberty Road. Jones & Stokes originally recorded a segment of the road in 1997. As part of this project, Jones & Stokes revisited the resource to assess its current condition and prepare an evaluation. JSA-EBMUD-19 is a two lane, paved road that measures approximately 40 feet wide and has no shoulders. It is maintained to modern standards. Liberty Road has traversed its present alignment as early as 1879. As late as 1940, Liberty Road was still an earthen road.

*P3b. Resource Attributes: (List attributes and codes) HP37 Highway/Trail

*P4. Resources Present: ☐Building XStructure ☐Object ☐Site ☐District ☐Element of District ☐Other (Isolates, etc.)



P5b. Description of Photo: (View, date, accession #)
Facing North, 9/27/05

*P6. Date Constructed/Age and Sources: XHistoric
☐Prehistoric ☐Both
ca. 1880

*P7. Owner and Address:
San Joaquin County
P.O. Box 1810
Stockton, CA 95201

*P8. Recorded by: (Name, affiliation, and address)
MR Bowen
Jones & Stokes
2600 V Street
Sacramento, CA 95818

*P9. Date Recorded: 9/27/05

*P10. Survey Type: (Describe)
Intensive

SJ-6993

*P11. Report Citation: (Cite survey report and other sources, or enter "none.") Jones & Stokes 2006. *Cultural Resources Inventory Report for the Freeport Regional Water Project, Sacramento and San Joaquin Counties, California.*

*Attachments: ☐NONE ☐Location Map ☐Sketch Map ☐Continuation Sheet XBuilding, Structure, and Object Record ☐Archaeological Record ☐District Record XLinear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary # P-39-001903
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD CA-SJO-326H

*NRHP Status Code 6Z

*Resource Name or # (Assigned by recorder) JSA-EBMUD-19

B1. Historic Name: Liberty Road
B2. Common Name:
B3. Original Use: Road B4. Present Use: Road
*B5. **Architectural Style:** Utilitarian
*B6. **Construction History:** (Construction date, alterations, and date of alterations)
Constructed circa 1880.

*B7. **Moved?** X No ☐Yes ☐Unknown **Date:** **Original Location:**
*B8. **Related Features:**

B9a. Architect: N/A b. Builder: N/A
*B10. **Significance: Theme:** Transportation Development **Area:** Sacramento County
Period of Significance: Circa 1880 **Property Type:** Road **Applicable Criteria:** N/A
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

The road is not known to be associated with events or people important to the area or San Joaquin County. Also, improvements through the years in the form of paving and maintaining the road to modern standards have diminished the integrity of the segment. The resource also does not appear to be a historical resource for the purposes of CEQA.

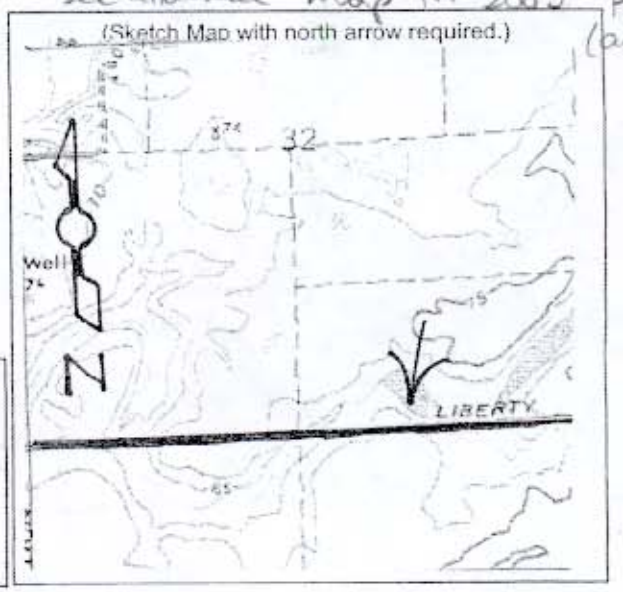
B11. Additional Resource Attributes: (List attributes and codes)

*B12. **References:** Jones & Stokes Associates 1997,
Thompson and West 1968, 1940 Metsker's Map of San Joaquin County.

B13. Remarks:

This is near 1997 recording. See attached map for 2005 pt. (acc. to UTM's)

(Sketch Map with north arrow required.)



*B14. **Evaluator:** MR Bowen

*Date of Evaluation: 11/10/05

(This space reserved for official comments.)

*Required information

State of California — The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # P-39-004903
HRI #
Trinomial CA-SJO-326H

Resource Name or #: (Assigned by recorder) JSA-EBMUD-19

L1. Historic and/or Common Name: Liberty Road

L2a. Portion Described: ☐ Entire Resource X Segment ☐ Point Observation **Designation:**

b. Location of point or segment: (Provide UTM coordinates, legal description, and any other useful locational data. Show the area that has been field inspected on a Location Map)
UTM: Zone: 10; 663682 mE/ 4233531 mN (G.P.S.) ✓

L3. Description: (Describe construction details, materials, and artifacts found at this segment/point. Provide plans/sections as appropriate.)

JSA-EBMUD-19 is a two lane, paved road that measures approximately 40 feet wide and has no shoulders.

L4. Dimensions: (In feet for historic features and meters for prehistoric features)
a. Top Width: Approx. 40 feet
b. Bottom Width: N/A
c. Height or Depth: N/A
d. Length of Segment: 2000 feet ✓

L5. Associated Resources:

L4e. Sketch of Cross-Section (include scale) **Facing:** North



L6. Setting: (Describe natural features, landscape characteristics, slope, etc., as appropriate.)
The resource is bordered by rural residences and agricultural fields.

L7. Integrity Considerations:
The road is maintained to modern standards.

L8a. Photograph, Map or Drawing

L8b. Description of Photo, Map, or Drawing (View, scale, etc.)
See Primary Record form.

L9. Remarks:

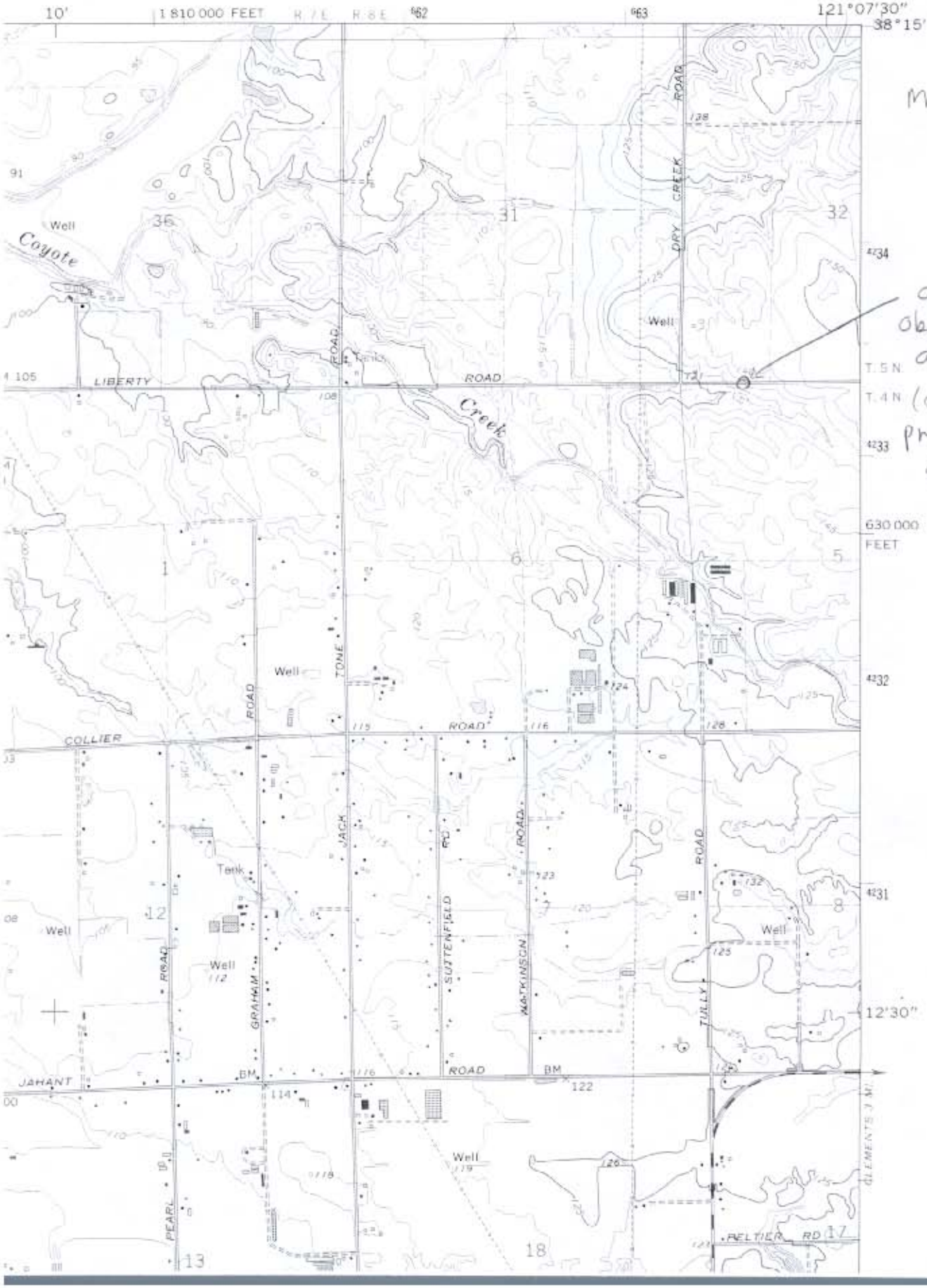
L10. Form Prepared by: (Name, affiliation, and address)
MR Bowen
Jones & Stokes
2600 V Street
Sacramento, CA 95818

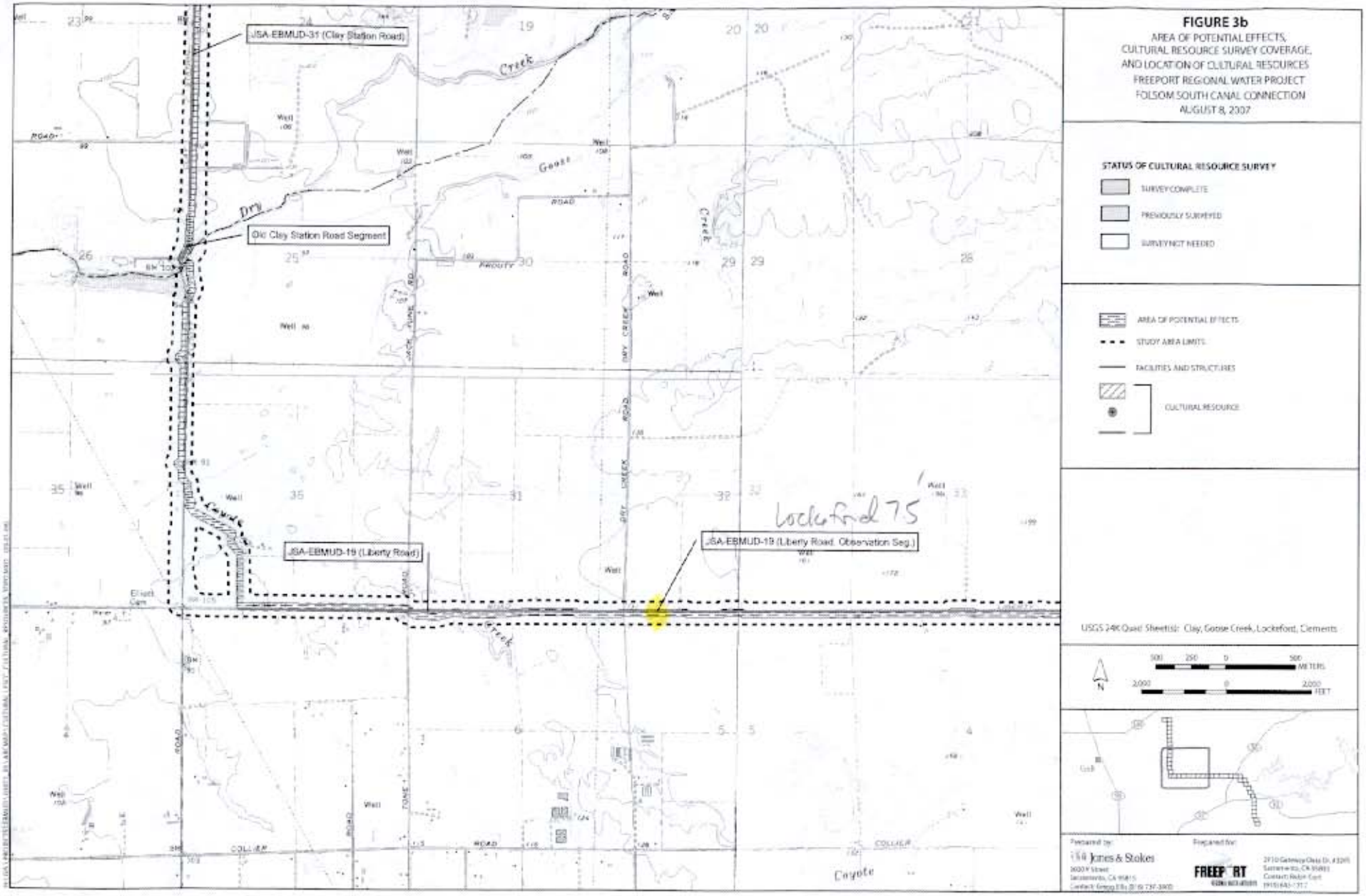
L11. Date: 12/14/05

P-39-004903

LOCKEFORD QUADRANGLE
CALIFORNIA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 BELLOTA 15' QUADRANGLE

1760 I SE (GOOSE CREEK)





from report [69933]

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary # P-39-004903
HRI #
Trinomial CA-SJO-326H
NRHP Status Code 7

Other Listings
Review Code _____ Reviewer _____ Date / /

*Resource Name or #: JSA-EBMUD-19
P1. Other Identifier: Liberty Road
*P2. Location: ☐ Not for Publication ☒ Unrestricted a. County San Joaquin
b. USGS 7.5' Quad Lockeford, Calif. Date 1968 T 04N ; R 07E ; SW 1/4 of SW 1/4 of Sec 32 ; MDM B.M.
c. Address _____ City _____ Zip _____
d. UTM: (Give more than one for large and/or linear feature) Zone 10 , 653602 mE/ 4233183 mN
e. Other Locational Data: (e.g. parcel #, legal description, directions to resource, elevation, additional UTMs, etc. as appropriate)
Resource is the boundary between T 4N sections 5 & 6 and T 5N sections 31 & 32. USGS Lockeford, CA photorevised 1979, minor revision 1993. UTM datum: NAD 1983. UTM position GPS derived & differentially corrected.

*P3a. Description: (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries.)
The resource is a 100 feet long section of Liberty Road at its intersection with the Central California Traction Railroad (JSA-EBMUD-1). The road consists of two lanes with no shoulders. It appears to have a developed road prism.

*P3b. Resource Attributes: (List attributes and codes) HP37. Highway/Trail
*P4. Resources Present: ☐ Building ☒ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects)

P5b. Description of Photo: (View, date, etc.)

*P6. Date Constructed/Age and Sources:
☐ Prehistoric ☒ Historic ☐ Both
Road appears on 1880 Thompson and West San Joaquin Co. map

*P7. Owner and Address:
San Joaquin County
P.O. BOX 1810
Stockton, CA. 95201
C--County

*P8. Recorded by:(Name, affiliation, address)
Christopher Dore, W.L. Norton
Jones & Stokes Associates
2600 V Street, Suite 100
Sacramento, CA. 95818-1914

*P9. Date Recorded: 07/08/1997

*P10. Survey Type:(Describe)
Reconaissance:
Pedestrian survey

*P11. Report Citation: (Cite survey report/other sources or "none") Interim Cultural Resources Inventory Report for the EBMUD Folsom South Canal Connection Project, Sacramento & San Joaquin Co.'s CA.

*Attachments: ☐ NONE ☒ Location Map ☐ Sketch Map ☐ Continuation Sheet ☐ Building, Structure and Object Record
☐ Archaeological Record ☐ District Record ☒ Linear Feature Record ☐ Milling Station Record ☐ Rock Art Record ☐ Artifact Record
☐ Photograph Record ☐ Other: (List) _____

*Required information

Not on file; see attached

State of California -- The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LINEAR FEATURE RECORD

Primary # P-39-004983
HRI #
Trinomial CA-SJO-326H

Resource Name or #: JSA-EBMUD-19

L1. Historic and/or Common Name:

L2a. Portion Described: ☐ Entire Resource ☑ Segment ☐ Point Observation Designation:

b. Location of point or segment: (Provide UTM coordinates, legal description, etc. Show field inspected area on a Location Map.)

The resource is a 100 feet long section of Liberty Road where it crosses the Central California Traction Railroad.

L3. Description: (Describe construction details, materials, and artifacts found at this segment or point. Provide plans or sections as appropriate.)

The resource is paved and maintained, and possesses a road prism. No historic features were identified with this resource. Liberty Road beyond this 100 feet long section was not investigated.

L4. Dimensions: (In feet for historic features and meters for prehistoric features.)

a. Top Width Approx. 20 feet
b. Bottom Width N/A
c. Height or Depth N/A
d. Length of Segment 100 feet

L5. Associated Resources:

Central California Traction Railroad (JSA-EBMUD-1)

L4e. Sketch of Cross-Section (include scale) Facing:

L6. Setting: (Describe natural features, landscape characteristics, slope, etc. as appropriate.):

The resource is bordered by rural residences and agricultural fields.

L7. Integrity Considerations:

Being maintained to modern standards, at this writing location appears to be the only historic attribute of this resource.

L8a. Photograph, Map or Drawing

Date of Photo: / /

Photo Number:

Graphics Filename: @ 0DPI

L8b. Description of Photo, Map, or Drawing: (View, scale, etc.)

L9. Remarks:

L10. Form Prepared by: (Name, affiliation & addre

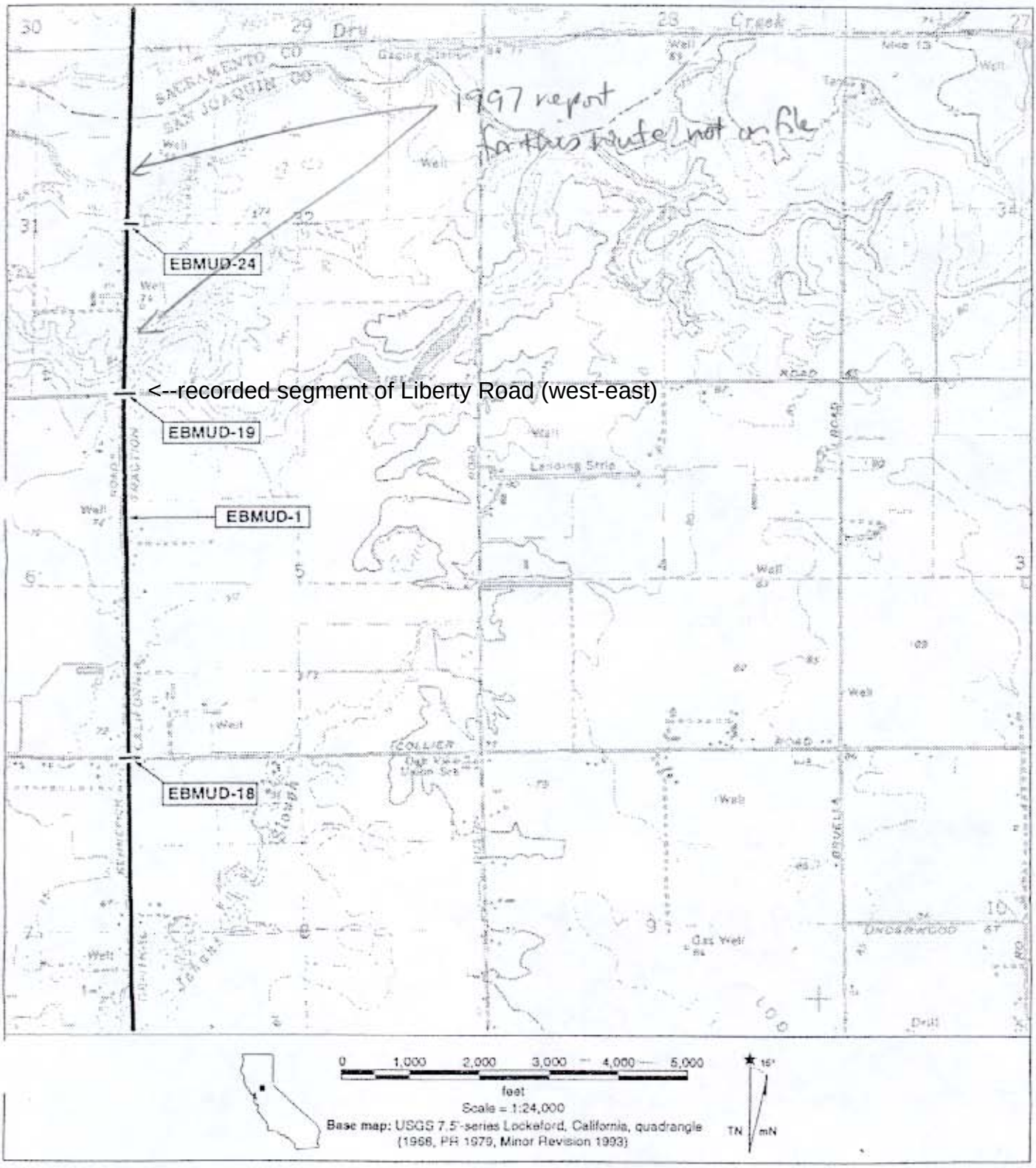
L11. Date: / /

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary # P-39-004903
HRI #
Trinomial CA-SJO-326H

Page 3 of 3
*Resource Name or #: EBMUD-19
*Map Name: Location Map *Scale: 1:24,000 (1"=2,000') *Date of Map: 7/97



DPR 523J (1/95)

*Required information

Jones & Stokes

2006a Memorandum Regarding Revised Area of Potential Effects for the Freeport Regional Water Project, Sacramento and San Joaquin Counties, California. February 15. Jones & Stokes, Sacramento, California. Submitted to Mid-Pacific Region, Bureau of Reclamation, U.S. Department of the Interior, Sacramento, California.

2006b Memorandum Regarding Modification of the Freeport Regional Water Project's Area of Potential Effects, Freeport Regional Water Authority Pipeline Alignment. June 12. Jones & Stokes, Sacramento, California. Submitted to Mid-Pacific Region, Bureau of Reclamation, U.S. Department of the Interior, Sacramento, California.

2006c *Cultural Resources Inventory and Evaluation Report for the Freeport Regional Water Project, Sacramento and San Joaquin Counties, California.* September 26. Jones & Stokes, Sacramento, California. J&S 03072.03. Prepared for Bureau of Reclamation, Sacramento, California.

2008a *Revised Cultural Resources Inventory Report Addendum for Modifications to the Freeport Regional Water Project Area of Potential Effects, Sacramento and San Joaquin Counties, California: Two Spoils Storage and Staging Areas on Segment 2 of the FRWA Pipeline—APE Modification FRWP-2008-01.* May. Jones & Stokes, Sacramento, California. J&S 03072.03. Prepared for Bureau of Reclamation, U.S. Department of the Interior, Sacramento, California, and Freeport Regional Water Authority, Elk Grove, California.

2008b Memorandum Regarding APE Modification FRWP-2008-02, Additional Spoils, Storage, and Staging Areas on Segments 1 and 2 of the FRWA Pipeline and the Northern Pipeline Segment of the Folsom South Canal Connection, Freeport Regional Water Project—Revision. March 18. Jones & Stokes, Sacramento, California. J&S 03072.03 and 01160.07. Submitted to Mid-Pacific Region, Bureau of Reclamation, U.S. Department of the Interior, Sacramento, California.

Jones & Stokes Associates

1997 *East Bay Municipal Utility District Supplemental Water Supply Project: Draft Interim Cultural Resources Inventory Report for the East Bay Municipal Utility District Folsom South Canal Project in Sacramento and San Joaquin Counties, California.* July. Jones & Stokes Associates, Sacramento, California. JSA 96-157 and 97-022. Prepared for East Bay Municipal Utility District, Oakland, California.

Not on file @ CCIC

COPY

Appendix D

NATIVE AMERICAN CORRESPONDENCE

Date:	February 25, 2020
To:	California Native American Heritage Commission
From:	NCE
Subject:	Kennefick Road Flood Control Project, Galt, San Joaquin County

Ms. Cynthia Gomez, Executive Secretary
California Native American Heritage Commission
1550 Harbor Boulevard, Suite 100
West Sacramento, California 95691

Dear Ms. Gomez:

The County of San Joaquin (County) proposes to conduct the Kennefick Road Flood Control Project (Project) in order to reconstruct a segment of Kennefick Road. The work includes raising the roadway, pavement and culvert reconstruction along approximately 400 feet of Kennefick Road. The Project is located in an unincorporated area of San Joaquin County in Galt, California. The Project encompasses improvements within the roadway, County right-of-way (ROW), and adjacent privately-owned parcels. NCE has been retained to complete technical studies in in compliance with the California Environmental Quality Act (CEQA) including Native American consultation under Assembly Bill 52 (AB-52).

The area for proposed improvement encompasses approximately 0.5 acres within a larger 16.1-acre project area that incorporates staging areas and a potential temporary alternate route. Two maps are enclosed for your review. Figure 1 is a location map of the project area at a 1:24,000 scale with a USGS 7.5' quadrangle background (Lockeford). Figure 2 provides more detail of the project area using an aerial basemap.

A records search request using a quarter mile buffer was submitted to the Central California Information Center (CCIC) to determine the nature of previous cultural resource inventories and previously recorded archaeological and/or architectural resources within the project area. After receipt of the updated records search results and in consultation with the County, a field visit will be conducted to perform a pedestrian survey and photo document the project area. At this time, it is anticipated that results of the preliminary cultural resources assessment will be drafted in a cultural resources inventory report in support of the CEQA environmental document.

Please provide a Native American contact list for the portion of San Joaquin County in the vicinity of the project area. We also request that you conduct a search of your Sacred Lands database for any places of concern that may be located within or adjacent to the proposed project area.

If you have any questions, please feel free to contact me via email at mlaitinen@ncenet.com or by telephone (775-588-2505). I appreciate your assistance and look forward to hearing from you soon.

Sincerely,

Molly Laitinen
NCE | Staff Scientist
PO Box 1760
Zephyr Cove, NV 89448
(775) 588-2505
mlaitinen@ncenet.com

Enclosed: Tribal Consultation List Request Form; Figure 1 – Location Map; Figure 2 – Detail Map

Local Government Tribal Consultation List Request

Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691
916-373-3710
916-373-5471 – Fax
nahc@nahc.ca.gov

Type of List Requested

☑ **CEQA Tribal Consultation List (AB 52)** – ***Per Public Resources Code § 21080.3.1, subs. (b), (d), (e) and 21080.3.2***

☑ **General Plan (SB 18)** - ***Per Government Code § 65352.3.***

Local Action Type:

___ General Plan ___ General Plan Element ___ General Plan Amendment

___ Specific Plan ___ Specific Plan Amendment ☑ Pre-planning Outreach Activity

Required Information

Project Title: Kennefick Road Flood Control Project

Local Government/Lead Agency: County of San Joaquin/FEMA

Contact Person: Molly Laitinen, Cultural Resources Specialist, NCE

Street Address: P.O. Box 1760

City: Zephyr Cove, NV **Zip:** 94804

Phone: 755-885-2305 **Fax:**

Email: mlaitinen@ncenet.com

Specific Area Subject to Proposed Action

County: San Joaquin County **City/Community:** Galt

Project Description:

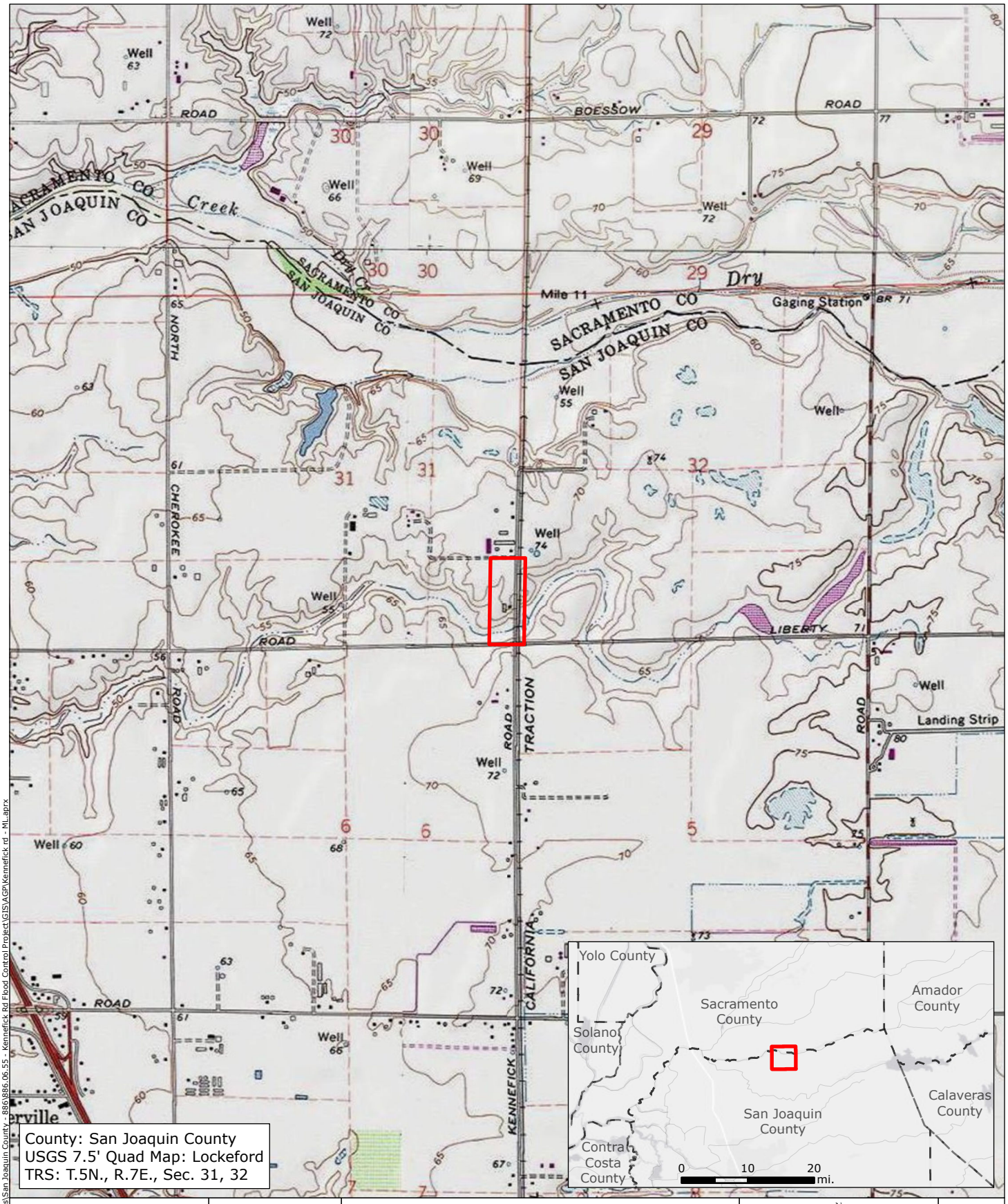
See attached letter.

Additional Request

☑ **Sacred Lands File Search** - ***Required Information:***

USGS Quadrangle Name(s): Lockeford 7.5'

Township: T.5N. **Range:** R.7E. **Section(s):** 31, 32



County: San Joaquin County
USGS 7.5' Quad Map: Lockeford
TRS: T.5N., R.7E., Sec. 31, 32

Legend

Project Area

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Area Location Map

N

1:24,000

0 1,000 2,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USA Topo Maps, NCE	886.06.55	mlaitinen	2/13/2020	2/25/2020	-

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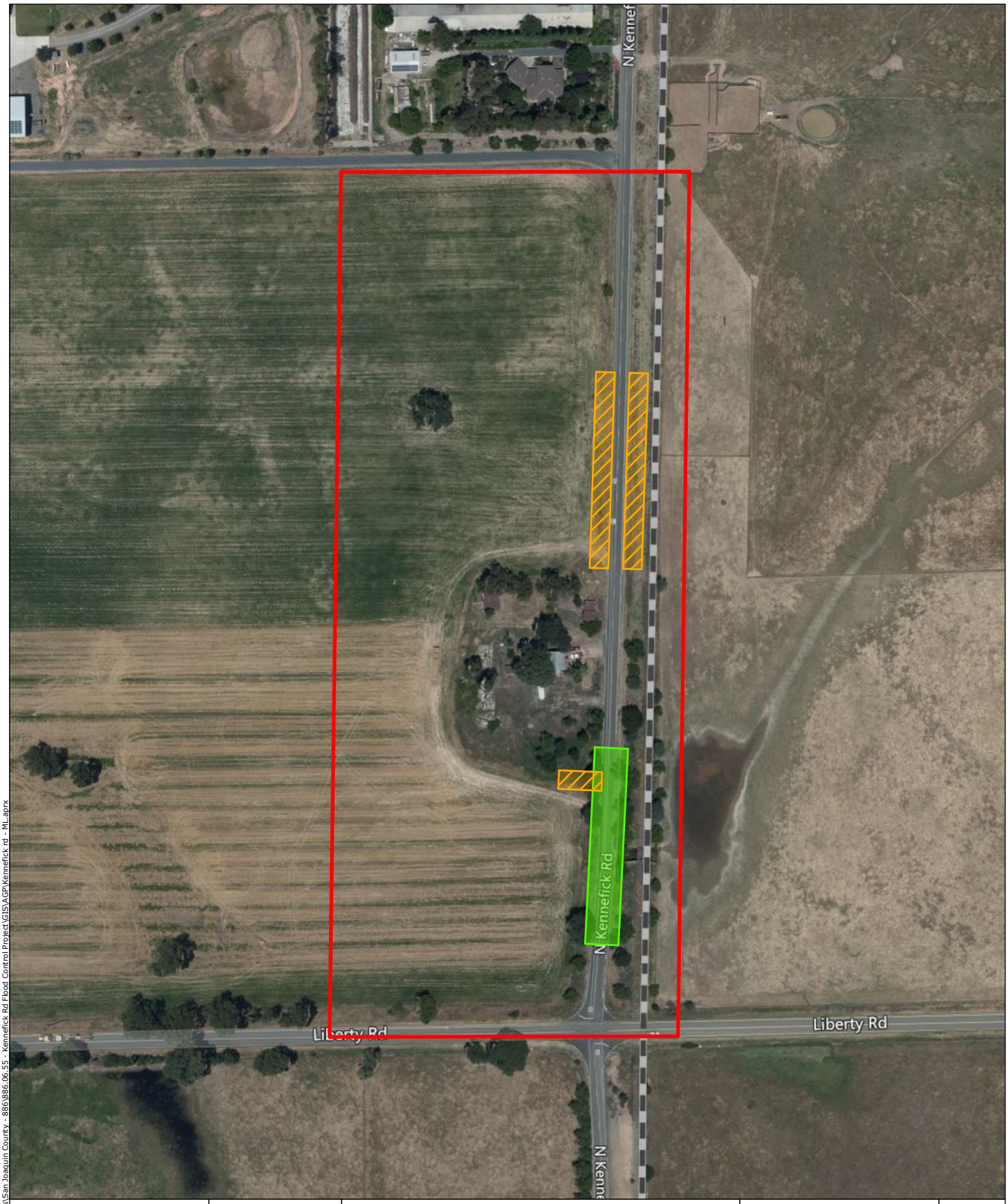

Legend

- Project Area
- Proposed Improvements Area
- Staging Area

NCE

Kennefick Road Flood Control Project

Project Area Detail Map

N

1 in. = 200 ft.

0 100 200 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Hybrid Map, NCE	886.06.55	mlaitinen	2/25/2020	-	-

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NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

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Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
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William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Joseph Myers
Pomo

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

March 3, 2020

Molly Laitinen

NCE

Via Email to: mlaitinen@ncenet.com

Re: Native American Consultation, Pursuant to Senate Bill 18 (SB18), Government Codes §65352.3 and §65352.4, as well as Assembly Bill 52 (AB52), Public Resources Codes §21080.1, §21080.3.1 and §21080.3.2, Kennefick Road Flood Control Project, San Joaquin County

Dear Ms. Laitinen:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties or projects.

Government Codes §65352.3 and §65352.4 require local governments to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to cultural places when creating or amending General Plans, Specific Plans and Community Plans.

Public Resources Codes §21080.3.1 and §21080.3.2 requires public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose of avoiding, protecting, and/or mitigating impacts to tribal cultural resources as defined, for California Environmental Quality Act (CEQA) projects.

The law does not preclude local governments and agencies from initiating consultation with the tribes that are culturally and traditionally affiliated within your jurisdiction. The NAHC believes that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

Best practice for the AB52 process and in accordance with Public Resources Code §21080.3.1(d), is to do the following:

Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section.

The NAHC also recommends, but does not require that lead agencies include in their notification letters, information regarding any cultural resources assessment that has been completed on the area of potential affect (APE), such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE, such as known archaeological sites;
    - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
    - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the APE; and
    - If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

    - Any report that may contain site forms, site significance, and suggested mitigation measures.

      All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure in accordance with Government Code Section 6254.10.

3. The result of the Sacred Lands File (SFL) check conducted through the Native American Heritage Commission was negative.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a tribal cultural resource. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the event, that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance we can assure that our consultation list remains current.

If you have any questions, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez

Cultural Resources Analyst

Attachment

Native American Heritage Commission
Tribal Consultation List
San Joaquin County
3/3/2020

Buena Vista Rancheria of Me-Wuk Indians
Rhonda Morningstar Pope, Chairperson
1418 20th Street, Suite 200 — Me-Wuk
Sacramento, CA, 95811
Phone: (916) 491 - 0011
Fax: (916) 491-0012
rhonda@buenavistatribe.com

Ione Band of Miwok Indians
Sara Setchwaelo, Chairperson
9252 Bush Street, Suite 2 — Miwok
Plymouth, CA, 95669
Phone: (209) 245 - 5800
sara@ionemiwok.net

North Valley Yokuts Tribe
Katherine Perez, Chairperson
P.O. Box 717 — Costanoan
Linden, CA, 95236 — Northern Valley
Phone: (209) 887 - 3415 — Yokut
canutes@verizon.net

United Auburn Indian Community of the Auburn Rancheria
Gene Whitehouse, Chairperson
10720 Indian Hill Road — Maidu
Auburn, CA, 95603 — Miwok
Phone: (530) 883 - 2390
Fax: (530) 883-2380
bguth@auburnrancheria.com

Ralph Hatch, Cultural Preservation Department
9415 Rancheria Drive — Miwok
Wilton, CA, 95693
crd@wiltonrancheria-nsn.gov

Wilton Rancheria
Raymond Hitchcock, Chairperson
9728 Kent Street — Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
Fax: (916) 683-6015
rhitchcock@wiltonrancheria-nsn.gov

Wilton Rancheria
Antonio Ruiz, Cultural Resources Officer
9728 Kent Street — Miwok
Elk Grove, CA, 95624
Phone: (916) 683 - 6000
aruiz@wiltonrancheria-nsn.gov

The Confederated Villages of Lisjan
Corrina Gould, Chairperson
10926 Edes Avenue — Bay Miwok
Oakland, CA, 94603 — Ohlone
Phone: (510) 575 - 8408 — Delta Yokut
cvltribe@gmail.com

This list is current only 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 and Section 5097.98 of the Public Resources Code.

This list is applicable only for consultation with Native American tribes under Government Code Sections 65352.3, 65352.4 et seq. and Public Resources Code Sections 21080.3.1 for the proposed Kennefick Road Flood Control Project, San Joaquin County.

SAN JOAQUIN COUNTY
Greatness grows here.

Public Works
Working for YOU

Department of Public Works

Kris Balaji, Director of Public Works
Fritz Buchman, *Deputy Director/Development*
Jim Stone, *Deputy Director/Operations*
Najee Zarif, *Interim Deputy Director/Engineering*
Kristi Rhea, *Manager of Strategic Initiatives*

March 26, 2020

Corrina Gould, Chairperson
The Confederated Villages of Lisjan
10926 Edes Avenue
Oakland, California 94603

SUBJECT: INVITATION TO PROVIDE CONSULTATION FOR THE KENNEFICK ROAD FLOOD CONTROL PROJECT, GALT, SAN JOAQUIN COUNTY

Dear Ms. Gould:

The San Joaquin County Department of Public Works (County) proposes to conduct the Kennefick Road Flood Control Project (Project) in order to reconstruct a segment of Kennefick Road. The work includes raising the roadway, pavement and culvert reconstruction along approximately 400 feet of Kennefick Road. The Project is located in an unincorporated area of the County in Galt, California. The Project encompasses improvements within the roadway, County right-of-way, and adjacent privately-owned parcels.

Funding has been allocated from the Federal Emergency Management Agency. Pursuant to 36 Code of Federal Regulations Section 800.2(a)(2), the Federal Emergency Management Agency is responsible for fulfilling compliance requirements with Section 106 National Historic Preservation Act.

NCE has been retained to complete technical studies in compliance with the California Environmental Quality Act (CEQA) including Native American consultation under Assembly Bill 52 (AB-52). NCE Cultural Resources Specialist, Molly Laitinen, is a consultant representing the County and is seeking any information you may have regarding tribal cultural resources (as defined under Public Resources Code (PRC) § 21074) within the Project area. This information is needed so that all concerns may be incorporated into the environmental documents. Information provided to the consulting archaeologist will remain confidential and exempt from public disclosure pursuant to PRC §5097.9 and §5097.993.

The area for proposed improvement encompasses approximately 0.5 acres within a larger 16.1-acre Project area that incorporates staging areas and a potential temporary alternate route. Two maps are enclosed for your review. Figure 1 is a location map of the Project area at a 1:24,000 scale with a United States Geological Survey 7.5 foot quadrangle background (Lockeford). Figure 2 provides more detail of the Project area using an aerial basemap.

The Native American Heritage Commission Sacred Lands File results were negative. A records search request using a quarter mile buffer was submitted to the Central California Information Center to determine the nature of previous cultural resource inventories and previously recorded archaeological and/or architectural resources within the Project area. Receipt of the records search indicated segments of Liberty Road adjacent to the Project were previously recorded. In

consultation with the County, a field visit was conducted to perform a pedestrian survey and photo document the Project area, resulting in negative findings. At this time, it is anticipated that results of the preliminary cultural resources assessment will be drafted in a cultural resources inventory report in support of the CEQA environmental document.

Please consider this letter and preliminary Project information as the formal notification of a proposed project as required under CEQA, specifically PRC 21080.3.1 and Chapter 532 Statutes of 2014 (i.e., AB 52). Please respond within 30 days, pursuant to PRC 21080.3.1(d), if you would like to consult on this Project and provide a designated lead contact person if you have not provided that information already.

The County appreciates your assistance and looks forward to hearing from you soon. Should you have any questions, please contact me at (209) 468-2153, or by email at tsessoms@sjgov.org, or Max Serikov, Project Engineer, at (209) 468-3020, or by email at mserikov@sjgov.org.

Sincerely,

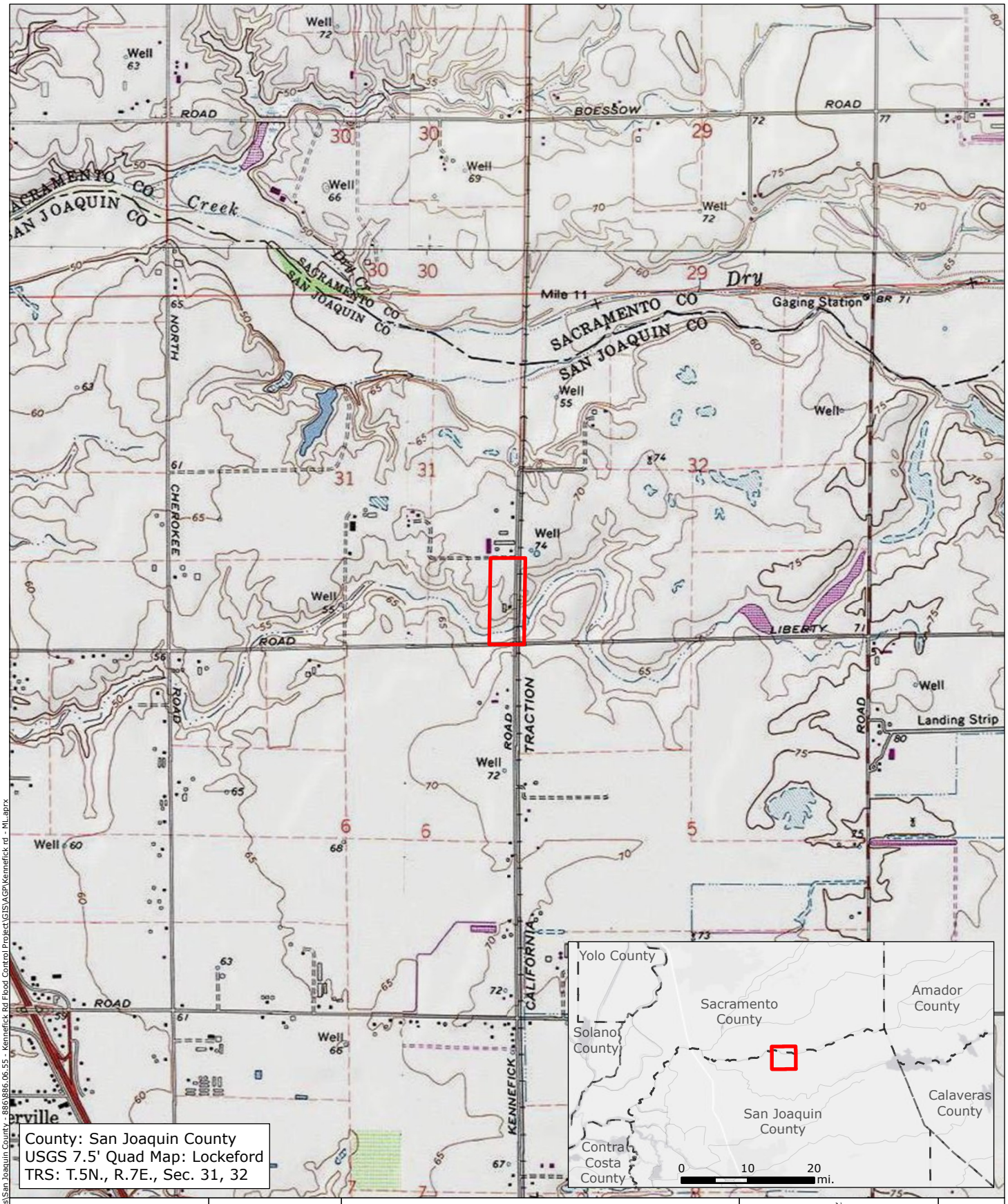
T. Sessoms

TOSHIRO SESSOMS
Engineering Assistant III

TS:me
DE-20C037-ME1

Enclosures

c: Max Serikov, Project Engineer



County: San Joaquin County
USGS 7.5' Quad Map: Lockeford
TRS: T.5N., R.7E., Sec. 31, 32

Legend

Project Area

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Area Location Map

N

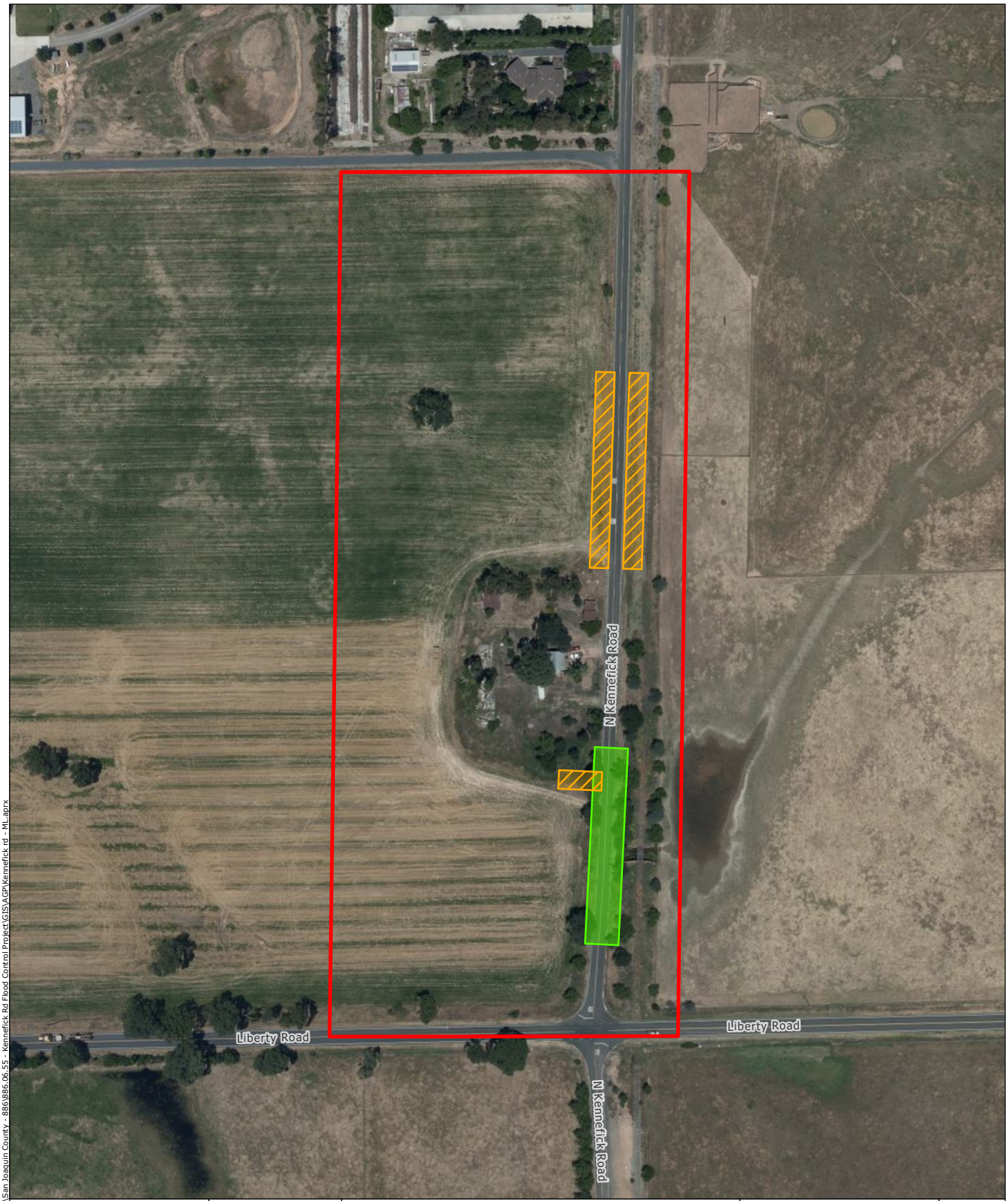
1:24,000

0 1,000 2,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
ESRI USA Topo Maps, NCE	886.06.55	mlaitinen	2/13/2020	3/24/2020	jhall

Document Path: P:\Active Projects\San Joaquin County - 886\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick_rd - ML.aprx



Legend

- Project Area
- Proposed Improvements Area
- Staging Area

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Area Detail Map

N

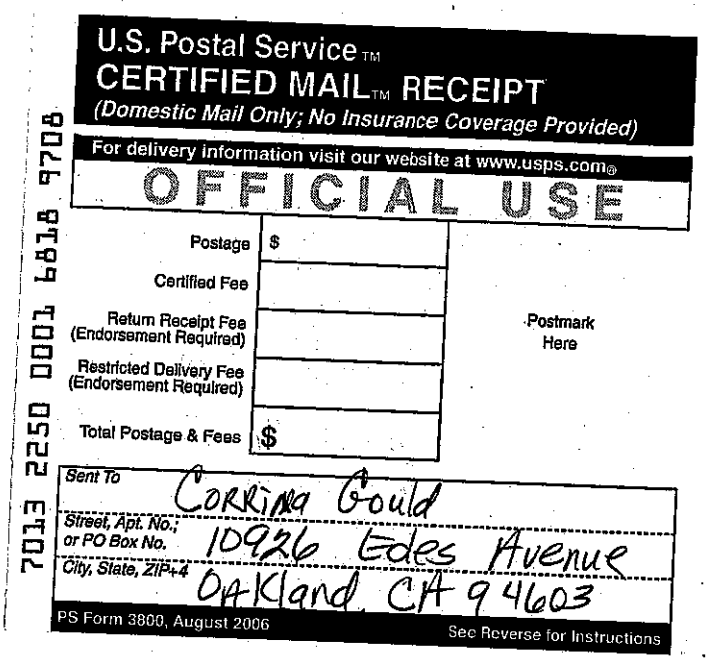
1 in. = 200 ft.

0 100 200 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Map, NCE	886.06.55	mlaitinen	2/25/2020	3/24/2020	jhall

Document Path: P:\Active Projects\San Joaquin County - 886\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick rd - ML.aprx



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Total Postage & Fees	$

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7013 2250 0001 6818 9708

Sent To: Corrina Gould
Street, Apt. No.; or PO Box No.: 10926 Edes Avenue
City, State, ZIP+4: Oakland, CA 94603

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Corrina Gould
(Kennefick Road Project)
10926 Edes Avenue
Oakland, CA 94603

9590 9402 5124 9092 6911 98

2. Article Number *(Transfer from service label)*
7013 2250 0001 6818 9708

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* [signature] C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ [illegible]ail
- ☐ [illegible]ail Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Tracking Number: 70132250000168189708

Remove X

Feedback

Your item was delivered to an individual at the address at 11:10 am on March 31, 2020 in OAKLAND, CA 94603.

Delivered

March 31, 2020 at 11:10 am
Delivered, Left with Individual
OAKLAND, CA 94603

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

March 31, 2020, 11:10 am
Delivered, Left with Individual
OAKLAND, CA 94603
Your item was delivered to an individual at the address at 11:10 am on March 31, 2020 in OAKLAND, CA 94603.

Product Information

See Less

Feedback

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

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7013 2250 0001 6818 9715

Sent To: Ralph Hatch
Street, Apt. No.; or PO Box No.: 9415 Rancheria Drive
City, State, ZIP+4: Wilton CA 95693

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ralph Hatch
(Kennefick Road Project)
9415 Rancheria Drive
Wilton, CA 95693

9590 9402 5124 9092 6911 81

2. Article Number *(Transfer from service label)*

7013 2250 0001 6818 9715

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X
☐ Agent
☐ Addressee

B. Received by *(Printed Name)* C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

WILTON, CA 95693 APR 2 USPS

3. Service Type
- ☑ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☑ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Mail
- ☐ Mail Restricted Delivery
- 0)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☑ Signature Confirmation Restricted Delivery

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Tracking Number: 70132250000168189715

Remove X

Feedback

Your item was delivered at 2:47 pm on April 2, 2020 in WILTON, CA 95693.

Delivered

April 2, 2020 at 2:47 pm
Delivered
WILTON, CA 95693

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

April 2, 2020, 2:47 pm
Delivered
WILTON, CA 95693
Your item was delivered at 2:47 pm on April 2, 2020 in WILTON, CA 95693.

March 30, 2020, 5:28 pm
Available for Redelivery or Pickup
WILTON, CA 95693

March 30, 2020, 11:44 am
Notice Left (No Authorized Recipient Available)
WILTON, CA 95693

March 30, 2020, 7:10 am
Out for Delivery
WILTON, CA 95693

March 30, 2020, 6:52 am
Arrived at Unit
WILTON, CA 95693

March 29, 2020, 8:53 pm
Departed USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 29, 2020
In Transit to Next Facility

Feedback

March 28, 2020, 8:59 pm
Arrived at USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

Product Information

See Less

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Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

7013 2250 0001 6818 9722

Sent To: Raymond Hitchcock
Street, Apt. No.; or PO Box No.: 9728 Kent Street
City, State, ZIP+4: Elk Grove, CA 95624

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Raymond Hitchcock
(Kennefick Road Project)
9728 Kent Street
Elk Grove, CA 95624

9590 9402 5124 9092 6911 74

2. Article Number *(Transfer from service label)*
7013 2250 0001 6818 9722

PS Form 3811, July 2015 PSN 7530-02-000-9053 — Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
x Cindy Gómez
☐ Agent
☐ Addressee

B. Received by *(Printed Name)*: Cindy Gómez
C. Date of Delivery: 4/1/2020

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Mail
- ☐ Mail Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Tracking Number: 70132250000168189722

Remove X

Feedback

Your item has been delivered to an agent for final delivery in ELK GROVE, CA 95624 on March 30, 2020 at 2:45 pm.

Delivered to Agent

March 30, 2020 at 2:45 pm
Delivered to Agent for Final Delivery
ELK GROVE, CA 95624

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

March 30, 2020, 2:45 pm
Delivered to Agent for Final Delivery
ELK GROVE, CA 95624
Your item has been delivered to an agent for final delivery in ELK GROVE, CA 95624 on March 30, 2020 at 2:45 pm.

March 30, 2020, 7:54 am
Out for Delivery
ELK GROVE, CA 95624

March 30, 2020, 7:43 am
Arrived at Unit
ELK GROVE, CA 95624

March 29, 2020, 9:11 pm
Departed USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 29, 2020
In Transit to Next Facility

March 28, 2020, 12:04 pm
Arrived at USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 27, 2020, 9:57 pm
Arrived at USPS Regional Facility
RENO NV DISTRIBUTION CENTER

Feedback

7013 2250 0001 6818 9692

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: Rhonda Mornmgstar Pope
Street, Apt. No.; or PO Box No.: 1418 20th St. #200
City, State, ZIP+4: Sacramento CA 95811

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Rhonda Mornmgstar Pope
(Kennefick Road Project)
1418 20th St. #200
Sacramento, CA 95811

9590 9402 5124 9092 6912 04

2. Article Number *(Transfer from service label)*
7013 2250 0001 6818 9692

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* [illegible] 7-19 C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ [illegible]ail
- ☐ [illegible]ail Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Tracking Number: 70132250000168189692

Remove X

Feedback

Your item was delivered to an individual at the address at 10:22 am on March 31, 2020 in SACRAMENTO, CA 95811.

Delivered

March 31, 2020 at 10:22 am
Delivered, Left with Individual
SACRAMENTO, CA 95811

Get Updates ⌄

Text & Email Updates ⌄

Tracking History ⌃

March 31, 2020, 10:22 am
Delivered, Left with Individual
SACRAMENTO, CA 95811
Your item was delivered to an individual at the address at 10:22 am on March 31, 2020 in SACRAMENTO, CA 95811.

March 29, 2020, 12:28 pm
Departed USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 28, 2020, 11:58 am
Arrived at USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 27, 2020, 9:43 pm
Arrived at USPS Regional Facility
RENO NV DISTRIBUTION CENTER

Feedback

Product Information

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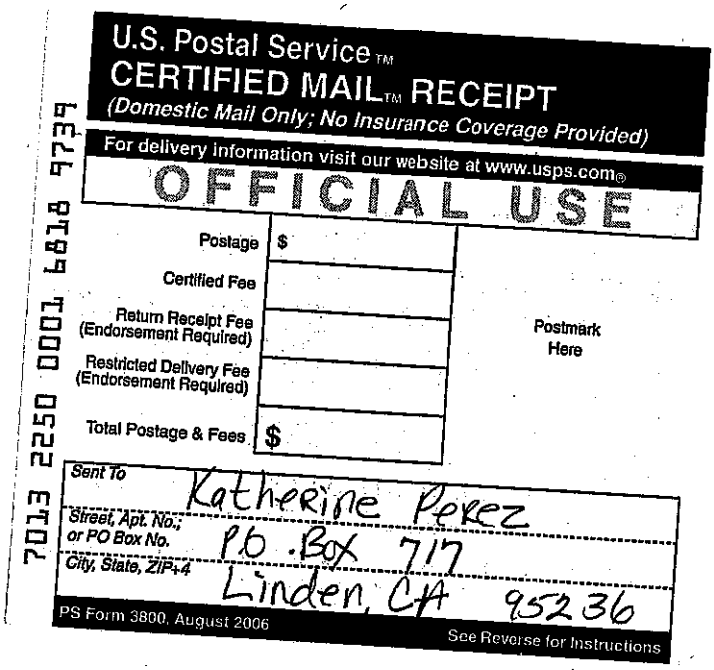

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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

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7013 2250 0001 6818 9739

Sent To: Katherine Perez
Street, Apt. No.; or PO Box No.: PO. Box 717
City, State, ZIP+4: Linden, CA 95236

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Katherine Perez
P.O. Box 717
Linden CA 95236
(Kennefick Road Project)

9590 9402 5124 9092 6911 67

2. Article Number *(Transfer from service label)*

7013 2250 0001 6818 9739

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Raoul Perez ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* RAOUL PEREZ C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Tracking Number: 70132250000168189739

Remove X

Feedback

Your item was delivered at 12:05 pm on April 1, 2020 in LINDEN, CA 95236.

Delivered

April 1, 2020 at 12:05 pm
Delivered
LINDEN, CA 95236

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

April 1, 2020, 12:05 pm
Delivered
LINDEN, CA 95236
Your item was delivered at 12:05 pm on April 1, 2020 in LINDEN, CA 95236.

March 30, 2020, 8:34 am
Available for Pickup
LINDEN, CA 95236

March 30, 2020, 8:00 am
Arrived at Unit
LINDEN, CA 95236

March 29, 2020, 9:32 pm
Departed USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

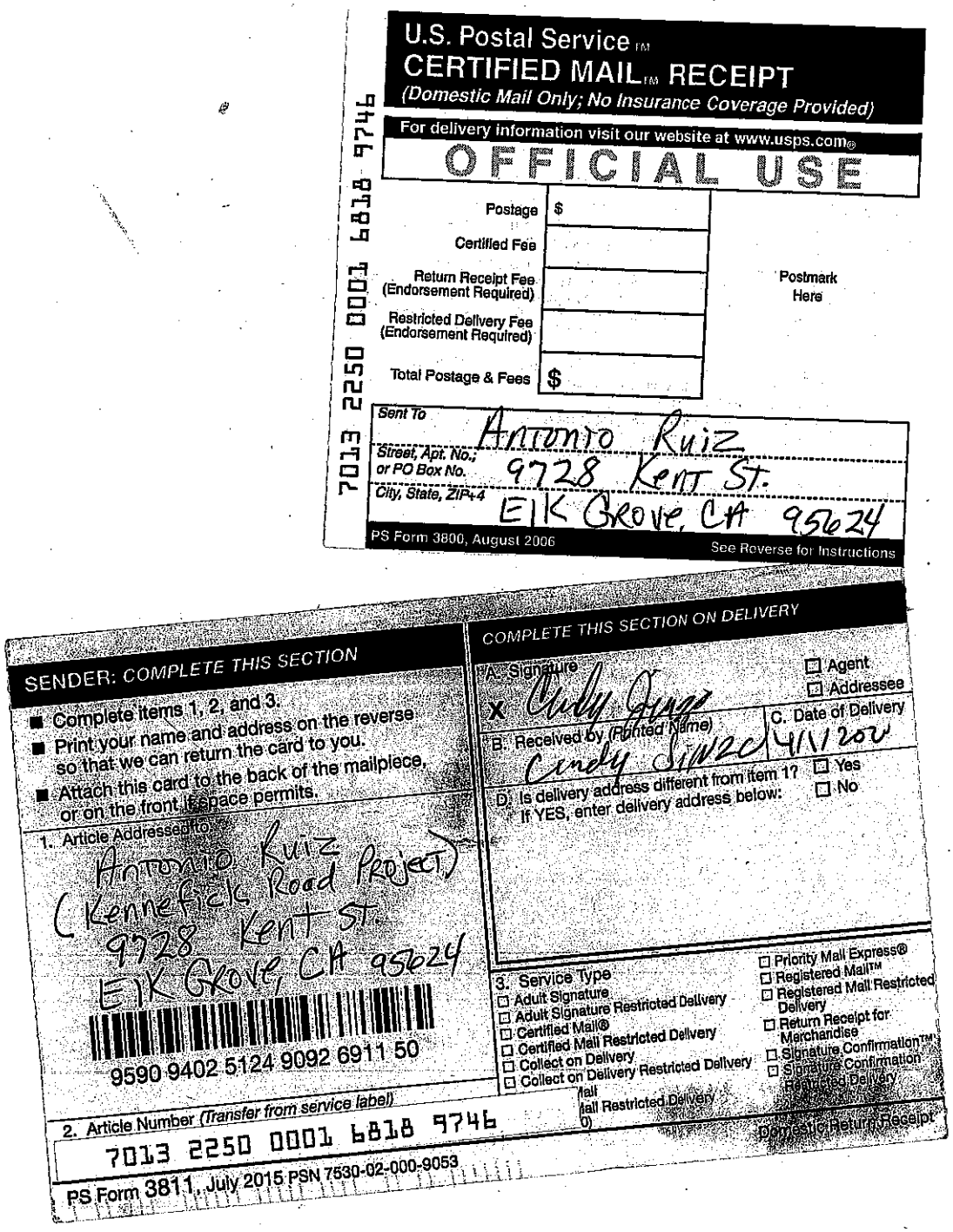
March 29, 2020
In Transit to Next Facility

March 28, 2020, 8:59 pm
Arrived at USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

Feedback

Product Information

See Less



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Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

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7013 2250 0001 6818 9746

Sent To: Antonio Ruiz
Street, Apt. No.; or PO Box No.: 9728 Kent St.
City, State, ZIP+4: Elk Grove, CA 95624

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Antonio Ruiz (Kennefick Road Project)
9728 Kent St.
Elk Grove, CA 95624

9590 9402 5124 9092 6911 50

2. Article Number (Transfer from service label)
7013 2250 0001 6818 9746

PS Form 3811, July 2015 PSN 7530-02-000-9053 — Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
x Cindy Ruiz
☐ Agent
☐ Addressee

B. Received by (Printed Name): Cindy Ruiz — C. Date of Delivery: 4/1/20

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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Tracking Number: 70132250000168189746

Remove X

Feedback

Your item has been delivered to an agent for final delivery in ELK GROVE, CA 95624 on March 30, 2020 at 2:45 pm.

Delivered to Agent

March 30, 2020 at 2:45 pm
Delivered to Agent for Final Delivery
ELK GROVE, CA 95624

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

March 30, 2020, 2:45 pm
Delivered to Agent for Final Delivery
ELK GROVE, CA 95624
Your item has been delivered to an agent for final delivery in ELK GROVE, CA 95624 on March 30, 2020 at 2:45 pm.

March 30, 2020, 7:54 am
Out for Delivery
ELK GROVE, CA 95624

March 30, 2020, 7:43 am
Arrived at Unit
ELK GROVE, CA 95624

March 29, 2020, 9:09 pm
Departed USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 29, 2020
In Transit to Next Facility

March 28, 2020, 8:59 pm
Arrived at USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

Feedback

Product Information

See Less

7013 2250 0001 6818 9753

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Certified Fee	
Return Receipt Fee (Endorsement Required)	
Restricted Delivery Fee (Endorsement Required)	
Total Postage & Fees	$

Postmark Here

Sent To: SARA SETCHWAELO
Street, Apt. No.; or PO Box No.: 9252 Bush St. #2
City, State, ZIP+4: Plymouth, CA 95669

PS Form 3800, August 2006 — See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
Sara Setchwaelo
(Kennefick Road Project)
9252 Bush St., #2
Plymouth, CA 95669

9590 9402 5124 9092 6911 43

2. Article Number *(Transfer from service label)*
7013 2250 0001 6818 9753

PS Form 3811, July 2015 PSN 7530-02-000-9053 — Domestic Return Receipt

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Anne Boyd — ☑ Agent ☐ Addressee

B. Received by *(Printed Name)*: Anne Boyd
C. Date of Delivery: 3-30-20

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery
- Mail
- Mail Restricted Delivery
- 00)

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Tracking Number: 70132250000168189753

Remove X

Feedback

Your item was delivered at 2:28 pm on March 30, 2020 in PLYMOUTH, CA 95669.

Delivered

March 30, 2020 at 2:28 pm
Delivered
PLYMOUTH, CA 95669

Get Updates ∨

Text & Email Updates ∨

Tracking History ∧

March 30, 2020, 2:28 pm
Delivered
PLYMOUTH, CA 95669
Your item was delivered at 2:28 pm on March 30, 2020 in PLYMOUTH, CA 95669.

March 30, 2020, 9:34 am
Available for Pickup
PLYMOUTH, CA 95669

March 30, 2020, 9:29 am
Available for Pickup
PLYMOUTH, CA 95669

March 30, 2020, 8:28 am
Out for Delivery
PLYMOUTH, CA 95669

March 30, 2020, 8:17 am
Arrived at Unit
PLYMOUTH, CA 95669

March 29, 2020, 8:25 pm
Departed USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 29, 2020
In Transit to Next Facility

Feedback

March 28, 2020, 12:04 pm
Arrived at USPS Regional Facility
SACRAMENTO CA DISTRIBUTION CENTER

March 27, 2020, 9:57 pm
Arrived at USPS Regional Facility
RENO NV DISTRIBUTION CENTER

Product Information

See Less

Feedback

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FAQs

7013 2250 0001 6818 9760

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From:	Katelyn Williams
To:	Molly Laitinen
Subject:	FW: Kennefick Road Flood Control Project
Date:	Friday, April 17, 2020 11:32:08 AM
Attachments:	image001.png

FYI for Kennefick

From: Sessoms, Toshiro [PW] <tsessoms@sjgov.org>
Sent: Wednesday, April 15, 2020 7:47 AM
To: Katelyn Williams <KWilliams@ncenet.com>
Cc: Taha, Awni [PW] <ataha@sjgov.org>; Serikov, Max [PW] <mserikov@sjgov.org>; Mike Leacox <MLeacox@ncenet.com>
Subject: FW: Kennefick Road Flood Control Project

Good morning Katelyn-

Please see email below for response from Buena Vista Rancheria.

I responded to Mr. Hawkins to thank him for his email.

Thank you,

Toshiro Sessoms
Engineering Asst. III
Design Engineering
San Joaquin County Public Works
1810 E Hazelton Ave.
Stockton, CA 95205
Phone (Direct): 209-468-2153

SAN JOAQUIN COUNTY
Greatness grows here.

From: Richard Hawkins <richardh@buenavistatribe.com>
Sent: Tuesday, April 14, 2020 2:28 PM
To: Sessoms, Toshiro [PW] <tsessoms@sjgov.org>
Cc: Mike DeSpain <mike@buenavistatribe.com>
Subject: Kennefick Road Flood Control Project

April 14, 2020

Mr. Toshiro Sessoms
Engineering Assistant III
San Joaquin County
Department of Public Works
1810 Hazelton Avenue
Stockton, CA 95205

Dear Mr. Sessoms,

Thank you for the notification dated March 26, 2020 and received March31, 2020 about the flood control project on Kennefick Road near Liberty Road and Galt, San Joaquin County, California.

This office has no tribal knowledge of cultural resources that might be impacted or compromised at the project site.
After review of the notification and the enclosed maps of the area, it is determined the Buena Vista Rancheria has no objection to commencement of the project.

Should cultural resources be encountered during the work, this office requests additional notification so to initiate action for their protection and preservation.

Respectfully,

Richard Hawkins
THPO Coordinator
Buena Vista Rancheria
1418 20th Street, Suite 200
Sacramento, CA 95811
richardh@buenavistatribe.com
Office: (916) 941-0011 ext. 255
Cell: (209) 890-5685
Fax: (916) 941-0012

From:	Katelyn Williams
To:	Molly Laitinen
Subject:	FW: Consultation for the Kennefick Road Flood Control Project, Galt
Date:	Monday, May 4, 2020 4:27:22 PM
Attachments:	image001.png image002.png

Similarly, this one.

From: Sessoms, Toshiro [PW] <tsessoms@sjgov.org>
Sent: Tuesday, April 28, 2020 3:32 PM
To: 'Anna Starkey' <astarkey@auburnrancheria.com>
Cc: Rebecca Allen <rallen@auburnrancheria.com>; Katelyn Williams <KWilliams@ncenet.com>; Mike Leacox <MLeacox@ncenet.com>; Serikov, Max [PW] <mserikov@sjgov.org>
Subject: RE: Consultation for the Kennefick Road Flood Control Project, Galt

Good afternoon Anna-

We appreciate you taking time to research and reply to our letter for the subject project.

I am forwarding, to our consultants, your request concerning the inclusion of information in the cultural report as stated and your request of forwarding a copy of the cultural report and CEQA documents once drafted.

Thank you,

Toshiro Sessoms
Engineering Asst. III
Design Engineering
San Joaquin County Public Works
1810 E Hazelton Ave.
Stockton, CA 95205
Phone (Direct): 209-468-2153

From: Anna Starkey <astarkey@auburnrancheria.com>
Sent: Tuesday, April 28, 2020 10:19 AM
To: Sessoms, Toshiro [PW] <tsessoms@sjgov.org>
Cc: Rebecca Allen <rallen@auburnrancheria.com>
Subject: Consultation for the Kennefick Road Flood Control Project, Galt

Dear Toshiro,
Thank you for the notification letter requesting information for the above referenced project. We are unaware of any previously recorded tribal cultural resources in the project area. Buried sites in this area are often found on the geologic landform called Dunes as they provided high ground during flood events. UAIC has not check the project area against geologic maps and request that the cultural report includes this as part of their investigation. We also request a copy of the cultural report and the CEQA document once it is drafted. We are happy to provide our preferred mitigation measures for the Tribal Cultural Resources section of the CEQA document. If any cultural resources are discovered in the project area, tribal values must be included through consultation in evaluating the significance of these resources.

Thank you,
Anna Starkey

Anna M. Starkey, M.A., RPA
Cultural Regulatory Specialist
Tribal Historic Preservation Department| UAIC
10720 Indian Hill Road
Auburn, CA 95603
Direct line: (916) 251-1565 | Cell: (530) 863-6503
astarkey@auburnrancheria.com |www.auburnrancheria.com

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From: Molly Laitinen
To: Katelyn Williams
Cc: Sarah Anderson
Subject: RE: Kennefick Road flood control project
Date: Monday, April 20, 2020 3:59:00 PM
Attachments: image001.png

Hi Katelyn,

If the County does not have any issue with the wording in the mitigation language, then it can be included as an attachment to my report and it should be added to the CEQA and NEPA documents. I believe that is how Sarah A. has handled them in the past, but I have cc'd her in case I have it wrong.

For the records search request: Because it does not contain sensitive location information, I can put it our results from CCIC on sharefile and you can either have the County send it to Wilton Rancheria, or I can send it directly to the tribe. Let me know what they prefer and I'll get the link ready.

Thank you,

Molly

From: Katelyn Williams <KWilliams@ncenet.com>
Sent: Saturday, April 18, 2020 8:26 PM
To: Molly Laitinen <MLaitinen@ncenet.com>
Subject: FW: Kennefick Road flood control project

Hi Molly – more tribe responses. Is there anything the County needs to do in particular, as per their question below?

Thank you,
Katelyn

From: Serikov, Max [PW] <mserikov@sjgov.org>
Sent: Friday, April 17, 2020 1:51 PM
To: Katelyn Williams <KWilliams@ncenet.com>
Cc: Sessoms, Toshiro [PW] <tsessoms@sjgov.org>
Subject: FW: Kennefick Road flood control project

Hi Katelyn,

Please see the response provided from Wilton Rancheria. In addition is there any particular way you'd like us to respond to the tribe's emails?

Thank You,
Max

From: Cultural Resource Department Inbox <crd@wiltonrancheria-nsn.gov>
Sent: Friday, April 17, 2020 11:14 AM
To: Sessoms, Toshiro [PW] <tsessoms@sjgov.org>
Cc: Cultural Resource Department Inbox <crd@wiltonrancheria-nsn.gov>; Serikov, Max [PW] <mserikov@sjgov.org>
Subject: Kennefick Road flood control project

Good morning,

Thank you for the notification regarding the Kennefick Road Flood Control Project in the City of Galt. Attached are some mitigation measures we would like to include and we would also like to request any reports or record searches done on the project.

Thank you

Mariah Mayberry
Wilton Rancheria
Tel: 916.683.6000 ext 2023 | Fax: 916.683.6015
9728 Kent Street | Elk Grove | CA | 95624
mmayberry@wiltonrancheria-nsn.gov
wiltonrancheria-nsn.gov

Tribal Cultural Resource Avoidance Mitigation Measure

Avoidance and preservation in place is the preferred manner of mitigating impacts to tribal cultural resources and will be accomplished by several means, including:

- Planning construction to avoid tribal cultural resources, archaeological sites and/ or other resources; incorporating sites within parks, green-space or other open space; covering archaeological sites; deeding a site to a permanent conservation easement; or other preservation and protection methods agreeable to consulting parties and regulatory authorities with jurisdiction over the activity. Recommendations for avoidance of cultural resources will be reviewed by the CEQA lead agency representative, interested Native American Tribes and the appropriate agencies, in light of factors such as costs, logistics, feasibility, design, technology and social, cultural and environmental considerations, and the extent to which avoidance is consistent with project objectives. Avoidance and design alternatives may include realignment within the project area to avoid cultural resources, modification of the design to eliminate or reduce impacts to cultural resources or modification or realignment to avoid highly significant features within a cultural resource. Native American Representatives from interested Native American Tribes will be allowed to review and comment on these analyses and shall have the opportunity to meet with the CEQA lead agency representative and its representatives who have technical expertise to identify and recommend feasible avoidance and design alternatives, so that appropriate and feasible avoidance and design alternatives can be identified.

- If the resource can be avoided, the construction contractor(s), with paid Native American monitors from culturally affiliated Native American Tribes present, will install protective fencing outside the site boundary, including a buffer area, before construction restarts. The construction contractor(s) will maintain the protective fencing throughout construction to avoid the site during all remaining phases of construction. The area will be demarcated as an "Environmentally Sensitive Area". Native American representatives from interested Native American Tribes and the CEQA lead agency representative will also consult to develop measures for long term management of the resource and routine operation and maintenance within culturally sensitive areas that retain resource integrity, including tribal cultural integrity, and including archaeological material, Traditional Cultural Properties and cultural landscapes, in accordance with state and federal guidance including National Register Bulletin 30 (*Guidelines for Evaluating* and *Documenting Rural Historic Landscapes*), Bulletin 36 (*Guidelines for Evaluating and Registering Archaeological Properties*), and Bulletin 38 (*Guidelines for Evaluating and Documenting Traditional Cultural Properties*); National Park Service Preservation Brief 36 (*Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes*) and using the Advisory Council on Historic Preservation (ACHP) *Native American Traditional Cultural Landscapes Action Plan* for further guidance. Use of temporary and

permanent forms of protective fencing will be determined in consultation with Native American rrepresentatives from interested Native American Tribes.

Native American Monitoring Mitigation Measure

To minimize the potential for destruction of or damage to existing or previously undiscovered burials, archaeological and tribal cultural resources and to identify any such resources at the earliest possible time during project-related earthmoving activities, THE PROJECT PROPONENT and its construction contractor(s) will implement the following measures:

- Paid Native American monitors from culturally affiliated Native American Tribes will be invited to monitor the vegetation grubbing, stripping, grading or other ground-disturbing activities in the project area to determine the presence or absence of any cultural resources. Native American representatives from cultural affiliated Native American Tribes act as a representative of their Tribal government and shall be consulted before any cultural studies or ground-disturbing activities begin.

- Native American representatives and Native American monitors have the authority to identify sites or objects of significance to Native Americans and to request that work be stopped, diverted or slowed if such sites or objects are identified within the direct impact area. Only a Native American representative can recommend appropriate treatment of such sites or objects.

- If buried cultural resources, such as chipped or ground stone, historic debris, building foundations, or bone, are discovered during ground-disturbing activities, work will stop in that area and within 100 feet of the find until a archaeologist who meets the Secretary of the Interior's qualification standards can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the Caltrans, the SHPO, and other appropriate agencies. Appropriate treatment measures may include development of avoidance or protection methods, archaeological excavations to recover important information about the resource, research, or other actions determined during consultation.

- In accordance with the California Health and Safety Code, if human remains are uncovered during ground disturbing activities, the construction contractor or the County, or both, shall immediately halt potentially damaging excavation in the area of the burial and notify the County coroner and a qualified professional archaeologist to determine the nature of the remains. The coroner shall examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands, in accordance with Section 7050(b) of the Health and Safety Code. If the coroner determines that the remains are those of a Native American, he or she shall contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). After the coroner's findings are presented, the County, the archaeologist, and the NAHC-designated Most Likely Descendant (MLD) shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed.

Tribal Cultural Resource – Awareness Training - Mitigation Measure

A consultant and construction worker tribal cultural resources awareness brochure and training program for all personnel involved in project implementation will be developed in coordination with interested Native American Tribes. The brochure will be distributed and the training will be conducted in coordination with qualified cultural resources specialists and Native American Representatives and Monitors from culturally affiliated Native American Tribes before any stages of project implementation and construction activities begin on the project site. The program will include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site and will outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally-appropriate treatment of any find of significance to Native Americans and behaviors, consistent with Native American Tribal values.

Appendix E

Photo Log

CULTURAL RESOURCES PHOTOGRAPH RECORD

Project Name: Kennefick Road Flood Control Project
Project Number: 866.06.55

Date	Frame Number	Site / Iso Number	Feature Number	Description	View
2/28/2020	IMG_9236.JPG	-	-	Overview from north end of staging area 1 on east side of N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9243.JPG	-	-	Overview from south end of staging area 1 on east side of N Kennefick Road looking away from Liberty Road	N
2/28/2020	IMG_9263.JPG	-	-	Overview from north end of staging area 2 on west side of N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9264.JPG	-	-	Overview from south end of staging area 2 on west side of N Kennefick Road looking away from Liberty Road	N
2/28/2020	IMG_9266.JPG	-	-	Overview from northeast corner of proposed improvement area on east side of N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9267.JPG	-	-	Overview from northeast corner of proposed improvement area on east side of N Kennefick Road looking towards Liberty Road	SW
2/28/2020	IMG_9273.JPG	-	-	Overview of culvert in proposed improvement area on east side of N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9276.JPG	-	-	Overview from southeast corner of proposed improvement area on east side of N Kennefick Road looking away from Liberty Road	N
2/28/2020	IMG_9277.JPG	-	-	Overview from southeast corner of proposed improvement area on east side of N Kennefick Road looking away from Liberty Road	NW
2/28/2020	IMG_9278.JPG	-	-	Overview from southwest corner of proposed improvement area on west side of N Kennefick Road looking away from Liberty Road	N
2/28/2020	IMG_9279.JPG	-	-	Overview from southwest corner of proposed improvement area on west side of N Kennefick Road looking away from Liberty Road	NE
2/28/2020	IMG_9280.JPG	-	-	Overview culvert in proposed improvement area from west side of N Kennefick Road	E
2/28/2020	IMG_9281.JPG	-	-	Overview culvert in proposed improvement area on west side of N Kennefick Road	N
2/28/2020	IMG_9283.JPG	-	-	Overview from northwest corner of proposed improvement area on west side of N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9284.JPG	-	-	Overview from northwest corner of proposed improvement area on west side of N Kennefick Road looking towards Liberty Road	SE
2/28/2020	IMG_9286.JPG	-	-	Overview of third staging area 3 entrance on west side of N Kennefick Road	N
2/28/2020	IMG_9287.JPG	-	-	Overview of third staging area 3 on west side of N Kennefick Road	NW
2/28/2020	IMG_9290.JPG	-	-	Overview from south end of proposed improvement area on N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9291.JPG	-	-	Overview from south end of proposed improvement area on N Kennefick Road looking away from Liberty Road	N
2/28/2020	IMG_9293.JPG	-	-	Overview of third staging area 3 from east side of N Kennefick Road	W
2/28/2020	IMG_9294.JPG	-	-	Overview of third staging area 3 from east side of N Kennefick Road	W
2/28/2020	IMG_9295.JPG	-	-	Overview from north end of proposed improvement area on N Kennefick Road looking towards Liberty Road	S
2/28/2020	IMG_9296.JPG	-	-	Overview from north end of proposed improvement area on N Kennefick Road looking away from Liberty Road	N
2/28/2020	IMG_9307.JPG	-	-	Overview of culvert in proposed improvement area from east side of N Kennefick Road	W



IMG_9236.JPG



IMG_9243.JPG



IMG_9263.JPG



IMG_9264.JPG



IMG_9266.JPG



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Appendix D

AQUATIC RESOURCES DELINEATION

Kennefick Road Flood Control Project



Final Aquatic Resources Delineation Report

Kennefick Road Flood Control Project
September 2020

NCE

Richmond, CA
501 Canal Blvd Suite I
Richmond, CA 94804



San Joaquin County Public Works Department

1810 E. Hazelton Avenue
Stockton, CA 95205

FINAL AQUATIC RESOURCES DELINEATION REPORT

Kennefick Road Flood Control Project

Prepared For:

Najee Zarif, Engineering Services Manager
San Joaquin County Department of Public Works
1810 E. Hazelton Avenue Stockton, CA 95205
(209) 468-2999
nzarif@sjgov.org

Prepared by:

Quinn Radford
Project Scientist

Debra Lemke, PWS, CPESC
Senior Scientist

NCE
501 Canal Blvd
Suite I
Richmond, CA 94804

Executive Summary

NCE performed a field investigation on March 23, 2020 evaluating the potential jurisdictional status of waters of the United States for the Kennefick Road Flood Control Project (Project) in San Joaquin County, California.

Within the survey area, no drainages or aquatic features were mapped by the United States Geological Survey (USGS). A Riverine feature is recognized by the United States Fish and Wildlife Service National Wetlands Inventory.

NCE surveyed a total of approximately 2.05 acres. NCE delineated one drainage (D1) that is a potentially jurisdictional waters of the United States due to the presence of ordinary highwater mark indicators and a hydrologic connection to Dry Creek. Dry Creek is hydrologically connected to the Mokelumne River, a traditionally navigable waterway. D1 is presented in **Appendix A Figure 1**.

- D1 1 had ponding during the survey. This drainage is a non-relatively permanent water, Cowardin classified as Intermittent, Riverine, and is approximately 0.004 acres in size within the survey area.

The delineation was conducted in accordance with the:

- 1987 Corps of Engineers Wetland Delineation Manual; and
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0), May 2010.
- Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West (Version 2.0), May 2010.

These findings should be considered preliminary until the United States Army Corps of Engineers makes a final approved jurisdictional determination in accordance with the United States Environmental Protection Agency.

TABLE OF CONTENTS

1.0 INTRODUCTION 3
1.1 CONTACT AND PROJECT INFORMATION 3
1.2 PURPOSE 3
2.0 BACKGROUND 5
2.1 SITE DESCRIPTION 5
2.1.1 Location 5
2.1.2 Site Access 5
2.1.3 Land Use 5
2.1.4 USGS Topographic Map 5
2.1.5 Vegetation 5
2.1.6 Soils 5
2.1.7 National Wetland Inventory 6
2.1.8 Hydrology 6
3.0 METHODS 7
3.1 LITERATURE REVIEW 7
3.2 RESEARCH AND FIELD METHODOLOGY 8
3.3 SURVEY DATA INTEGRATION 9
3.4 PRIVATE PROPERTY OWNER ACCESS 9
4.0 RESULTS 10
4.1 LANDSCAPE SETTING 10
4.2 AQUATIC RESOURCES 10
4.2.1 Wetlands 10
4.2.2 Unnamed Drainage 10
4.2.3 Aquatic Resources Types and Amounts 11
4.3 SIGNIFICANT NEXUS 11
5.0 REFERENCES 13

LIST OF TABLES

Table 1. Soils within the Proposed Improvement Area 6
Table 2. Aquatic Resources within the Survey Area 11
Table 3. Waters of the U.S Proposed Jurisdictional Status 11

LIST OF APPENDICES

Appendix A – Aquatic Resources Delineation Map
Figure 1. Proposed Delineation Map
Appendix B – Supporting Maps
Figure 1. Project Vicinity Map
Figure 2. Project Survey Area
Figure 3. Topographic Quadrangle Map
Figure 4. CWHR Type (Vegetation Communities)
Figure 5. NRCS Soils Map
Figure 6. National Wetlands Inventory (NWI) Map
Figure 7. Ground Level Photograph Locations and Directions
Appendix C – Property Access Statement (Placeholder)
Appendix D – Plant List
Appendix E – Representative Photographs
Appendix F – Delineation Datasheets
Appendix G – Aquatic Resources Spreadsheet and GIS Metadata

LIST OF ACRONYMS AND ABBREVIATIONS

FEMA	Federal Emergency Management Agency
NHD	National Hydrography Dataset
NWI	National Wetlands Inventory
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
Project	Kennefick Road Flood Control Project
RPW	Relatively Permanent Water
TNW	Traditional Navigable Waterway
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOUS	Waters of the United States

1.0 INTRODUCTION

1.1 CONTACT AND PROJECT INFORMATION

Mr. Najee Zarif of San Joaquin County, Public Works Department, contracted NCE to conduct a formal United States Army Corps of Engineers (USACE) aquatic resources delineation at the Kennefick Road Flood Control Project (Project).

Mr. Zarif's contact information is:

Najee Zarif, Engineering Services Manager
San Joaquin County Department of Public Works
1810 E. Hazelton Avenue Stockton, CA 95205
(209) 468-2999
nzarif@sjgov.org

Quinn Radford of NCE conducted the aquatic resources delineation on March 23, 2020.

The County of San Joaquin (County) proposes to conduct the Kennefick Road Flood Control Project (project) to reconstruct a segment of Kennefick Road with enhanced flood capacity. The work includes raising the roadway, new pavement, and culvert reconstruction.

The Project is located in San Joaquin County, California, east of State Highway 99. The City of Galt is northwest of the survey area (**Appendix B, Figure 1**). The Project is located on Kennefick Road, north of the intersection of Liberty Road and Kennefick Road. Severe road damage occurred in 2017 from storm events that overwhelmed three existing storm drain culverts. The purpose of the Project is to prevent future road failure and to maintain accessibility for emergency services and residents.

Since there is no alternative route to access the residences, farms, and businesses located on this section of Kennefick Road, returning the project to pre-disaster design capacity would likely result in future failures and disruption of access for residents and emergency services. Additionally, over the last 25 years and as recently as 2005, new homes have been built in this area, increasing the affected population. Therefore, the County is seeking to construct repairs that enhance the drainage design capacity to convey the 5-year/7-day regional precipitation event.

The survey area encompasses improvements within the roadway, County right-of-way (ROW), and an adjacent privately-owned parcel. The project involves approximately 285 feet of Kennefick Road as seen in **(Appendix B, Figure 2)**.

The survey area is presented on United States Geological Survey (USGS) Lockeford 7.5-minute series topographic quadrangle map (**Appendix B, Figure 3**).

1.2 PURPOSE

The purpose of this report is to identify and describe aquatic resources and known sensitive plant, fish, wildlife species, and cultural/historic resources in the survey area. This report provides the necessary documentation to:

- Avoid or minimize impacts to aquatic resources during the Project development process
- Document aquatic resource boundary determinations for review by the USACE

- Provide early indications of known sensitive species and historic/cultural properties within the survey area
- Provide background information

2.0 BACKGROUND

2.1 SITE DESCRIPTION

2.1.1 Location

The Project is located in San Joaquin County, California, east of State Highway 99, and north of Liberty Road (**Appendix B, Figure 1**). The survey area is located in Sections 31 and 32 in Township 5 North and Range 7 East of the Mt. Diablo Meridian which is found on the USGS 7.5-minute Lockeford quadrangle map. The city of Galt is northwest of the survey area.

2.1.2 Site Access

To access the Project from Galt, drive south on State Highway 99 for 1.2 miles to Exit 273 for Liberty Road. Turn east onto Liberty Road for two miles, then turn north onto Kennefick Road. This is the southern access point into the survey area (**Appendix B, Figure 2**).

2.1.3 Land Use

The land within the survey area contains roadway publicly owned land by San Joaquin County and one private parcel used with a private residence and cropland.

2.1.4 USGS Topographic Map

The USGS quadrangle map does not recognize any drainages within the survey area (**Appendix B, Figure 3**).

2.1.5 Vegetation

The area within the survey area is completely characterized by Annual Grassland (**Appendix B, Figure 4**).

2.1.6 Soils

The soils within the survey area have been mapped by the Department of Agriculture, Natural Resources Conservation Service (NRCS) and were downloaded from the Web Soil Survey (NRCS 2020a). NRCS identified three soil types within the survey area (**Appendix B, Figure 5**). Only one soil type is presented within the proposed improvement area; this soil (San Joaquin loam, 2 to 8% slopes, eroded) is on the national hydric soils list (NRCS 2020b). The soil type within the proposed improvement area and its hydric status is presented below and in **Table 1**.

<u>San Joaquin loam, 2 to 8% slopes, eroded</u>
This complex is a soil component that occurs on low terraces and dissected terraces. The parent material formed in alluvium derived from grantic rock sources. Depth to a restrictive layer is 20 to 40 inches to duripan. The natural drainage class is moderately well drained. This soil is considered hydric (NRCS 2020b).

Table 1. Soils within the Proposed Improvement Area

Map Unit Symbol	Name	Percent of Soil Within Proposed Improvement Area	National Hydric List
239	**San Joaquin loam, 2 to 8 percent slopes, eroded**	**100%**	**Yes**

2.1.7 National Wetland Inventory

Within the survey area, a riverine drainage feature is identified by the United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) (**Appendix B, Figure 6**).

2.1.8 Hydrology

The sources of water for the survey area include surface water from irrigation, direct precipitation, and stormwater runoff from Kennefick Road.

3.0 METHODS

3.1 LITERATURE REVIEW

Available information pertaining to the natural resources of the region was reviewed. References reviewed for this delineation are listed in Section 5.0. Pertinent site-specific reports and general references utilized for the delineation include the following:

- USFWS NWI mapping
- USGS National Hydrography Dataset (NHD) mapping
- Google Earth
- United States Department of the Interior, USGS. Lockeford, California 7.5-minute series topographic quadrangle
- United States Department of Agriculture (USDA), NRCS. 2020a. Soils survey data for the Project site accessed online at: *http://websoilsurvey.nrcs.usda.gov/app/*
- USDA, NRCS. 2020b. National and State of California hydric soils for the Project study area accessed online at: *http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/*
- USGS National Hydrography Dataset. *https://nhd.usgs.gov/tools.html#MDTool*
- Federal Emergency Management Agency (FEMA) mapping
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS
- USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0)
- USACE. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* Region (Version 2.0)
- USACE U.S. Environmental Protection Agency. 2007. *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States*
- USDA, NRCS. 2010. *Field Indicators of Hydric Soils in the United States*, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds). USDA, NRCS in cooperation with the National Committee for Hydric Soils
- Gretag, Macbeth. 2000. *Munsell Soil Color Charts*. New Windsor, NY
- Cowardin, *et al*. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Fish and Wildlife Service, Washington D.C.

- California Department of Fish and Wildlife. California Interagency Wildlife Task Group. 2014. CWHR version 9.0 personal computer program. Sacramento, CA

- USACE. 2020. *National Wetland Plant List, version 3.3.* Accessed online at: http://wetland_plants.usace.army.mil/

3.2 RESEARCH AND FIELD METHODOLOGY

Prior to the field investigation, USGS topographic maps and NHD mapping, aerial photographs, USFWS NWI mapping, and a NRCS custom soil report of the survey area were reviewed for indications of ephemeral, intermittent, and perennial drainages as well as mapped wetlands and spring locations.

Wetlands
The survey area was delineated for the presence of wetlands utilizing the USACE 1987 three-parameter (vegetation, hydrology, and soils) methodology. This methodology was refined in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region and Arid West Region (Version 2.0), May 2010 and requires the collection of data on soils, vegetation, and hydrology at several locations to establish the potential jurisdictional boundary of wetlands.

NCE identified representative locations for data collection. A soil pit was dug, and data was collected on vegetation, hydrology, and soils. Soils were examined and correlations were developed between the three parameters to make wetland determinations. Data points were evaluated to determine the composition and identification of dominant plant species. The indicator status of all dominant plant species, as determined by the 2016 National Wetland Plant List, version 3.3, was applied and evaluated as part of the vegetation assessment portion of the wetland determination process. Additionally, immediate subsurface soil conditions were examined for hydric attributes or a lack thereof. Observations were made and recorded for both primary and secondary wetland hydrology indicators if present. Soil pit locations were recorded with a Trimble Geo7x GPS unit and were documented with representative photographs.

Drainages
The survey area was delineated for drainages utilizing the presence of ordinary high water mark (OHWM) indicators, evidence of frequent surface water flows, and a connection to a navigable waterway. These characteristics were considered to be indicative of a jurisdictional waters of the United States (WOUS). Arid West Ephemeral and Intermittent Stream OHWM Data Sheets were completed for each drainage with the presence of OHWM indicators. If the drainage had OHWM indicators present, the drainage was followed to determine if the drainage flowed into another drainage with OHWM indicators or if these indicators terminated. Where the drainage exhibited OHWM indicators, width measurements were taken to be used in determining an average width of the drainage and height measurements from the OHWM to the drainage bottom were taken. When drainages with OHWM indicators left the area, an attempt was made to follow the drainage to determine if OHWM indicators terminated or a connection to a navigable waterway. Ordinary high water mark indicator locations were recorded with a Trimble Geo7x GPS unit and representative photographs were taken.

3.3 SURVEY DATA INTEGRATION

Boundaries of the potential aquatic resources within the survey area were mapped using a Trimble Geo7x GPS unit and digitized in ESRI ArcGIS Pro 2.4.0 software. The horizontal datum is NAD 1983.

3.4 PRIVATE PROPERTY OWNER ACCESS

A signed letter from the private property owner allowing USACE personnel to enter the property during business hours will be needed as the survey area includes private property.

This letter will be provided to the private landowner by the County. Once this letter is received it will be forwarded to the Sacramento USACE office. **Appendix C** is a placeholder for this signed letter.

4.0 RESULTS

4.1 LANDSCAPE SETTING

The survey area is approximately 2.05 acres. The entire survey area was field delineated by NCE. The survey area includes San Joaquin County publicly-owned land. The survey area also includes and abuts private parcels. Kennefick Road slopes from the north and south down toward the three existing storm drain culverts which are located approximately 67 feet above mean sea level.

There are no NWI mapped wetlands within the survey area, but there is an NWI mapped riverine within the survey area (**Appendix B, Figure 6**). There are no USGS 'blue line' drainages within the survey area (**Appendix B, Figure 3**).

Vegetation types were initially identified with the CALVEG GIS data (USDA 2009), and then verified based on an NCE reconnaissance-level botanical field survey (**Appendix D, Plant List**).

4.2 AQUATIC RESOURCES

4.2.1 Wetlands

Within the survey area, a data point (SP1) was taken in the survey area on the east side of the road near the culverts. The vegetation at SP1 consisted of 60% farmer's foxtail (*Hordeum murinum)*, 10% soft chess grass (*Bromus hordeaceus*) and 5% crane's bill geranium (*Geranium molle*), all of which are non-native plants. SP1 is not within a wetland because there are neither signs of wetland hydrology, hydrophytic vegetation, nor hydric soils.

Appendix A, Figure 1 depicts the location of the data point SP1. **Appendix B, Figure 7** presents the ground photograph locations and directions. A plant list of the entire survey area is located in **Appendix D**. Representative photographs are in **Appendix E.** The wetland datasheet is in **Appendix F.**

4.2.2 Unnamed Drainage

There is an unnamed drainage that flows west and travels through a series of three storm drain culverts under Kennefick Road. There are two 18-inch corrugated metal pipes and one 12-inch corrugated metal pipe under Kennefick Road.

Data Points OHWM UTR-L and UTR-R were collected. D1 presented the following OHWM indicators: change in average sediment texture, change in vegetation species, and a break in bank slope. The OHWM width was 14 inches and the depth was 10 inches. The drainage was dry during the delineation, but there was a pocket of standing water in a low spot on the east side of Kennefick Road.

The drainage is assumed to be intermittent within the survey area. D1 is known to convey seasonal precipitation and flood overflow from Dry Creek, as well as irrigation waters. NCE chose not to trespass private property to track the drainage west to where it meets up with Dry Creek. Using aerial maps, FEMA flood maps, USGS topographic maps, and NHD data, NCE tracked D1 west about 2.5 miles to where it meets up with Dry Creek near the intersection of Liberty Road and North Lower Sacramento Road. Dry Creek is a tributary of Molekumne River, a traditionally navigable waterway. Due to the presence of OHWM indicators, and it being a

tributary to Dry Creek, NCE believes that D1 is potentially federally jurisdictional. Within the survey area, D1 is 137.36 linear feet, and 0.004 acres in size (**Appendix A, Figure 1**).

For the Unnamed Drainage (D1):

- **Appendix A, Figure 1** depicts the location of the data points
- **Appendix B, Figure 7** presents the ground level photograph locations and directions
- A plant list of the entire survey area is located in **Appendix D**
- Representative photographs are in **Appendix E**
- The OHWM datasheet is in **Appendix F**

4.2.3 Aquatic Resources Types and Amounts

Below are two tables with the aquatic resources identified within the survey area (**Table 2**) and the proposed jurisdictional status (**Table 3**).

Table 2. Aquatic Resources within the Survey Area

Aquatic Resource Name	Aquatic Resources Classification		Aquatic Resource Size (acre)	Aquatic Resource Size (linear feet) (Culvert and Drainage Length)
	Cowardin	Location (lat/long)		
D1	R1 – Intermittent Riverine	38º14"03.39"N 121º14"42.33"W	0.004	137.36
Total			0.004	137.36

Table 3. Waters of the U.S Proposed Jurisdictional Status

Class	Total Acres	Jurisdictional	Non-Jurisdictional
D1 – Non-Relatively Permanent Water	0.004	0.004	0.0
Total	0.004	0.004	0.0

4.3 SIGNIFICANT NEXUS

The U.S Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (USACE 2007) was consulted to aid the preliminary determination whether an area would be subject to USACE jurisdiction under Section 404 of the Clean Water Act. The significant nexus test, outlined in a memorandum jointly authored by the U.S. Environmental Protection Agency and USACE, was applied to each potentially jurisdictional habitat type (Grumbles and Woodley 2008). To facilitate jurisdictional determination consistent with the guidance, each water body delineated was evaluated as a Traditional Navigable Waterway (TNW), Relatively Permanent Water (RPW), or non-RPW, based on the following definitions:

- TNWs include all waters subject to the ebb and flow the tide, or waters that are presently used, have been used in the past, or may be used in the future to transport interstate or foreign commerce, and all waters that are navigable in fact under federal law for any purpose

- RPWs are waters that flow continuously at least seasonally (typically at least 3 months of the year) and are not TNWs

- Non-RPWs are waters that do not have continuous flow at least seasonally

The following types of water bodies are subject to Clean Water Act jurisdiction:

- All TNWs and adjacent wetlands

- Relatively permanent tributaries of TNWs and wetlands with a continuous surface connection to such tributaries

- Non-relatively permanent tributaries of TNWs and adjacent wetlands if they have a significant nexus to a TNW. Non-RPWs and adjacent wetlands are determined to have a significant nexus to a TNW if they significantly affect the chemical, physical, or biological integrity of a downstream TNW

NCE's professional opinion is that D1 is a non-RPW which is connected to Dry Creek, and Dry Creek is a tributary to Mokelumne River, a TNW. D1 functions primarily as a storm water drainage, an irrigation ditch, and occasionally as a flood channel. D1 receives overflow from Dry Creek which is approximately 1.4 miles to the northeast. The overflow from Dry Creek flows through several neighboring properties before passing through the culverts in the Project's survey area. From the survey area the drainage flows west to Dry Creek which is about 2.5 miles to the west.

Appendix G contains the Aquatic Resource Excel Sheet and the GIS metadata.

The above findings should be considered preliminary until the USACE makes a final approved jurisdictional determination in coordination with the United States Environmental Protection Agency. Areas deemed jurisdictional will then be subject to the regulatory requirements of the federal Clean Water Act.

5.0 REFERENCES

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United States Geological Survey. National Hydrography Dataset. https://nhd.usgs.gov/tools.html#MDTool

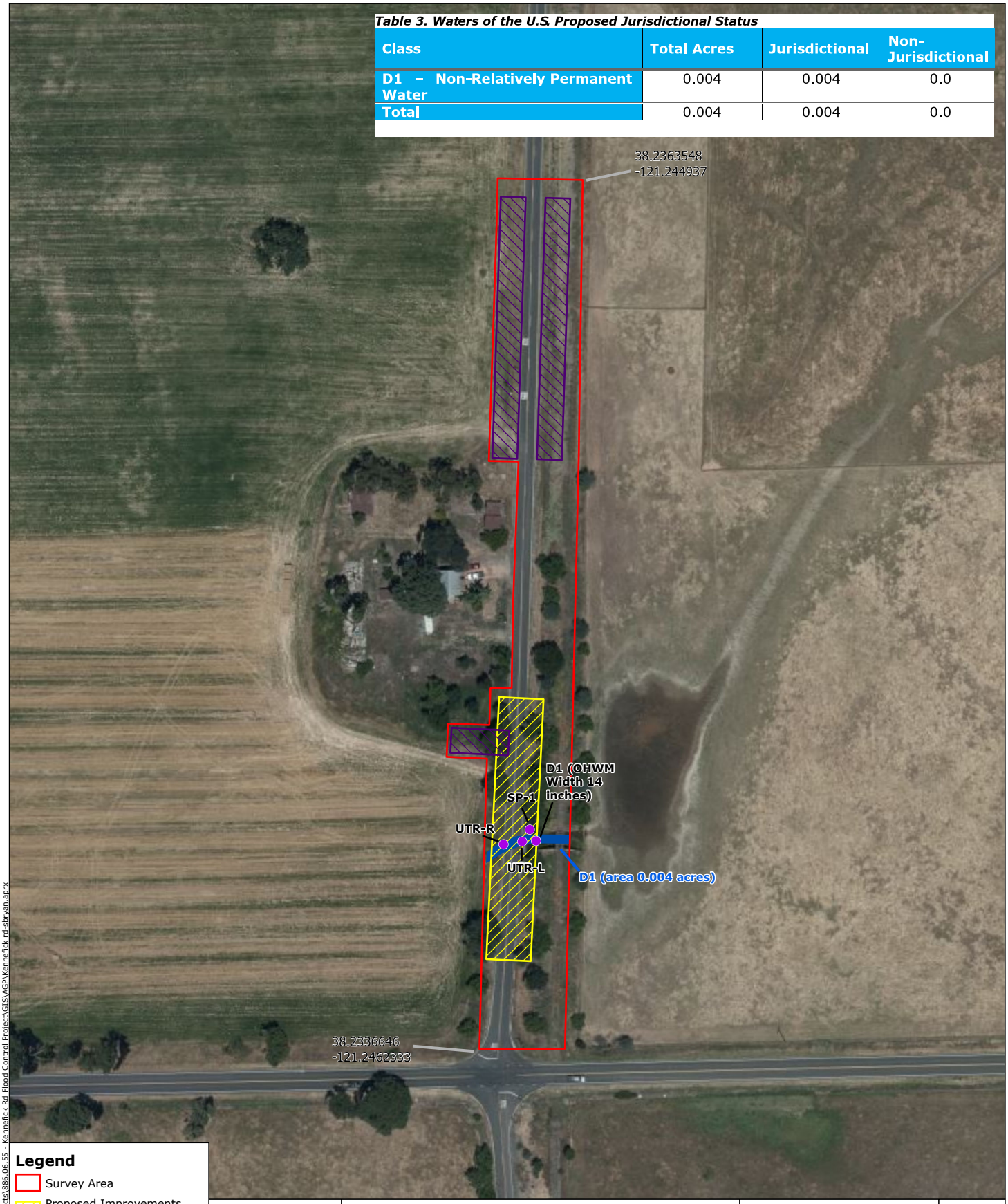
United States Geological Survey. Lockeford, California 7.5-minute series topographic quadrangle. U.S. Department of the Interior.

Appendix A

Proposed Delineation Map

Table 3. Waters of the U.S. Proposed Jurisdictional Status

Class	Total Acres	Jurisdictional	Non-Jurisdictional
D1 – Non-Relatively Permanent Water	0.004	0.004	0.0
Total	0.004	0.004	0.0



Legend

- Survey Area
- Proposed Improvements Area
- Staging Areas
- Data Points

Proposed Jurisdictional Feature

- Riverine

Document Path: E:\PW\Active Projects\886.06.55 - Kennefick Rd Flood Control Project\GIS\AGP\Kennefick rd-sbryan.aprx

NCE

Kennefick Road Flood Control Project

Proposed Delineation Map

N

1 in. = 150 ft.

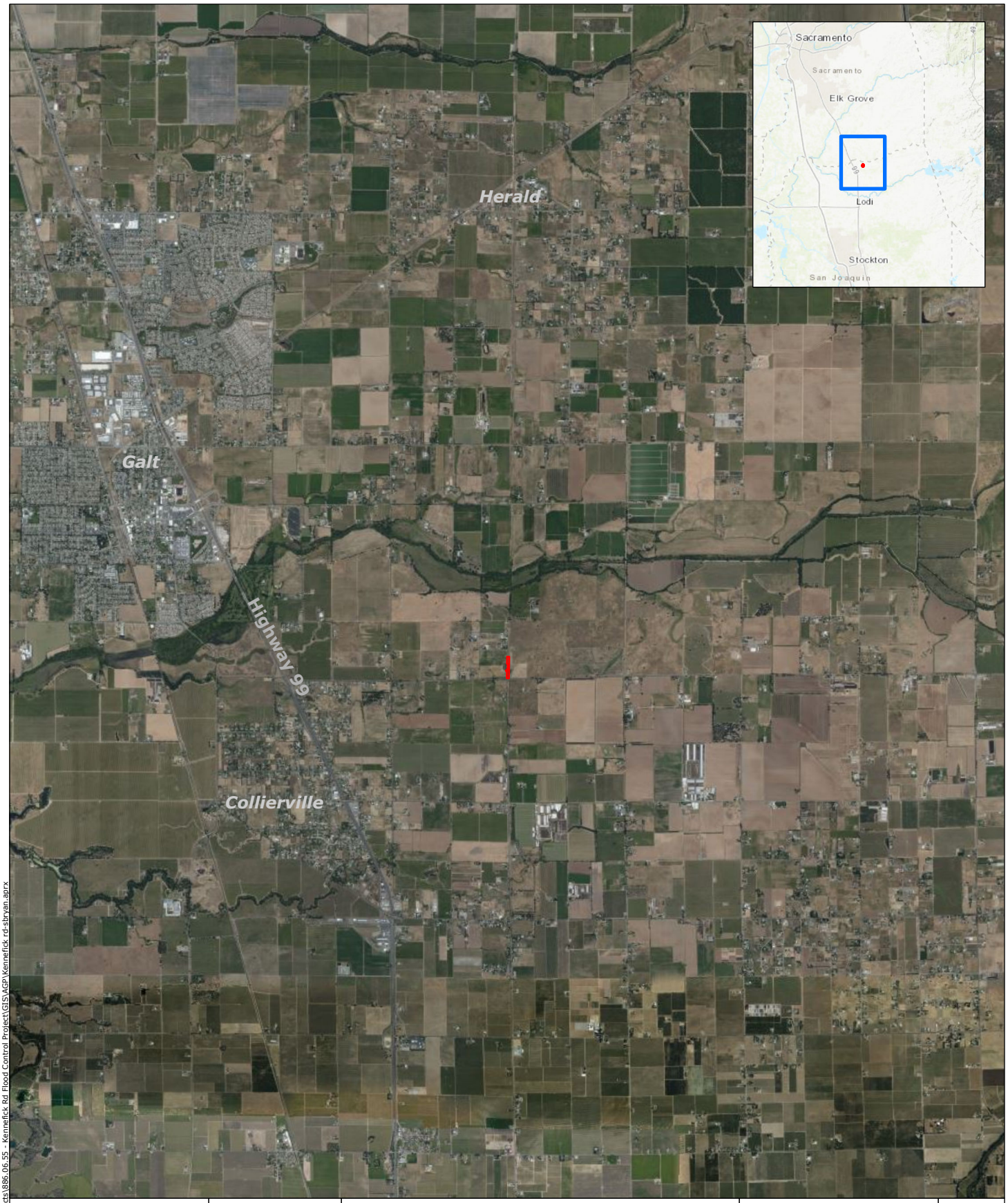
0 50 100 150 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Maps Aerial; NCE 2020	886.06.55	sbryan	9/2/2020	9/17/2020	drios

Appendix B

Supporting Maps



Legend

Survey Area

NCE

Kennefick Road Flood Control Project

Project Vicinity Map

N

1 in. = 6,000 ft.

0 2,000 4,000 6,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2020	886.06.55	cvaz/sbryan	4/7/2020	9/14/2020	drios

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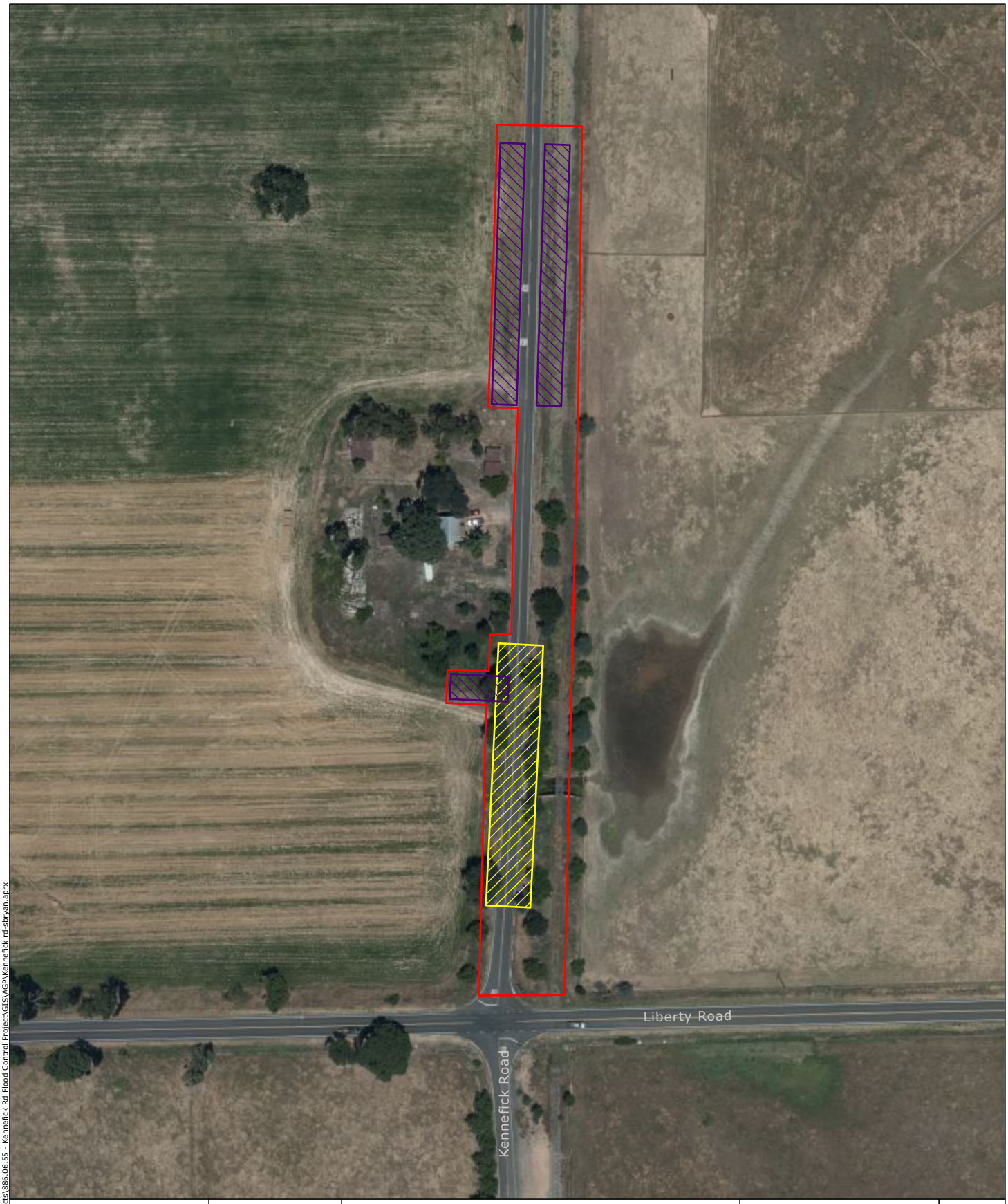

Legend

- Survey Area
- Proposed Improvements Area
- Staging Areas

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

Project Survey Area

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap; NCE 2020	886.06.55	cvaz/sbryan	6/2/2020	9/14/2020	drios

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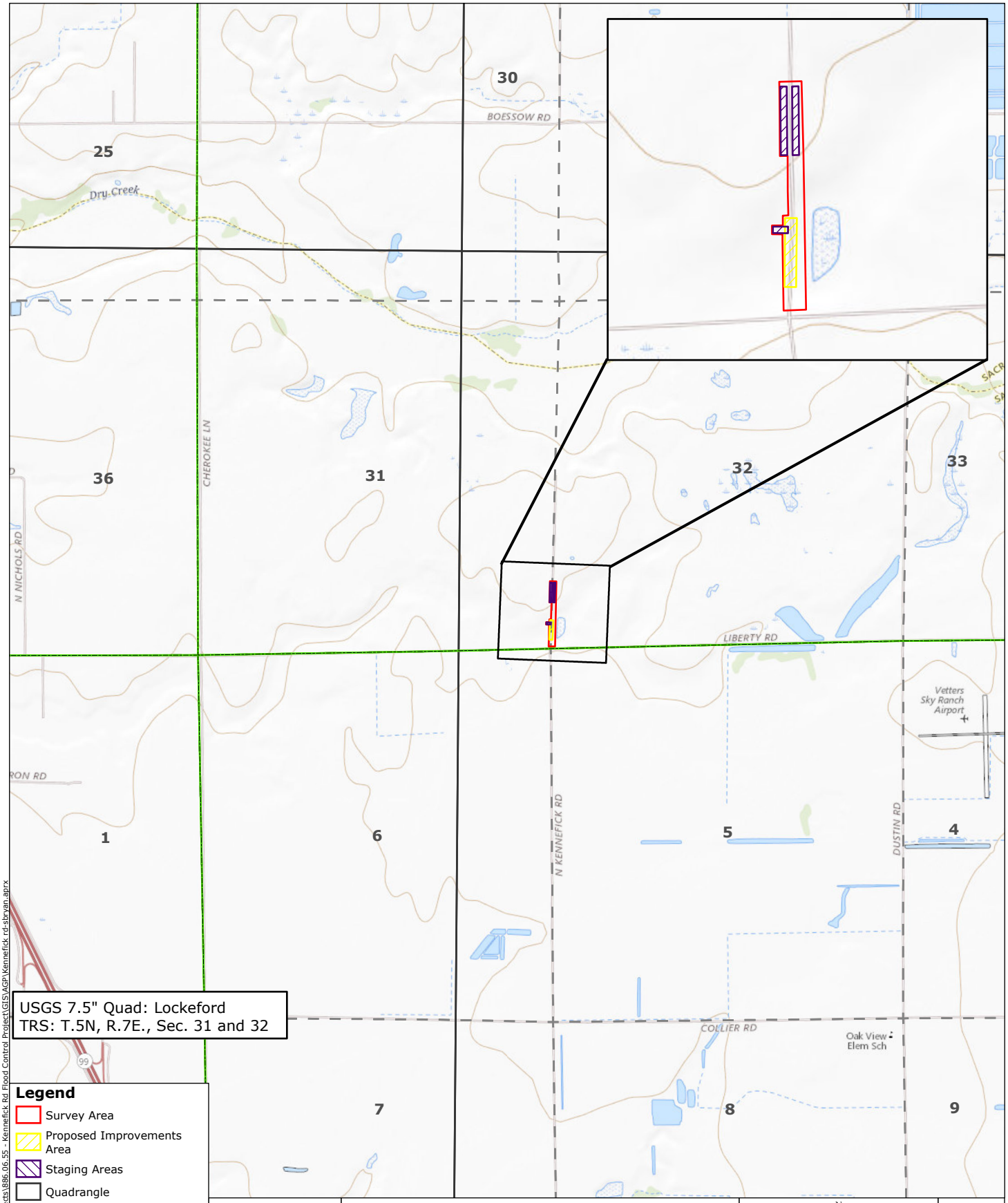

USGS 7.5" Quad: Lockeford
TRS: T.5N, R.7E., Sec. 31 and 32

Legend

- Survey Area
- Proposed Improvements Area
- Staging Areas
- Quadrangle
- Township
- Section
- Perennial Pond/Lake
- Perennial River
- Intermittent River
- Marsh or Swamp

NCE

Kennefick Road Flood Control Project

Topographic Quadrangle Map

N

1 in. = 2,000 ft.
0 1,000 2,000 ft.

FIGURE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
USGS Topographic Map; NCE 2020	886.06.55	cvaz/sbryan	6/9/2020	9/17/2020	drios

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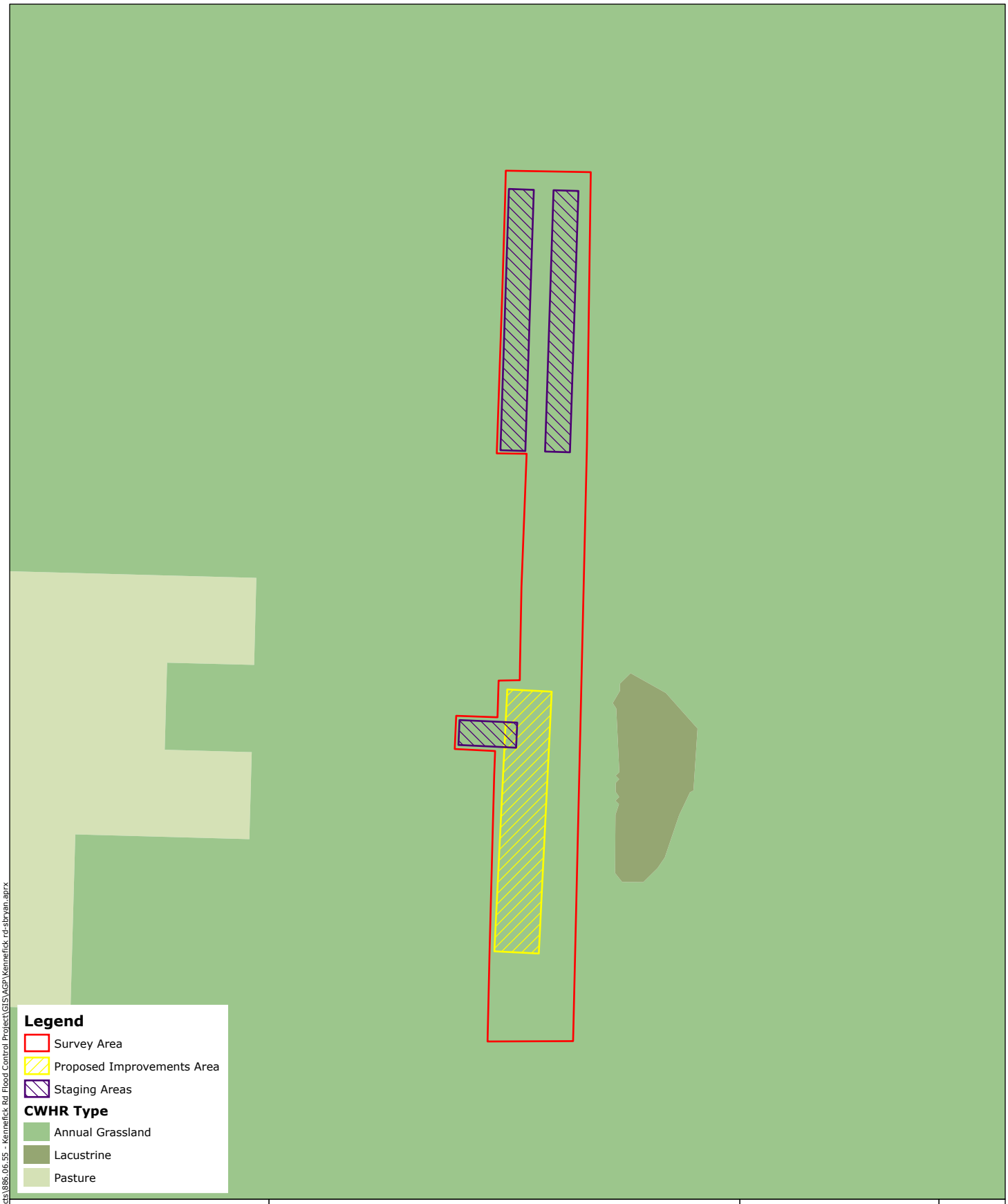

Kennefick Road Flood Control Project

CWHR Type (Vegetation Communities)

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 4

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
NCE 2020; California Wildlife Habitat Relationships Dataset	886.06.55	cvaz/sbryan	6/3/2020	9/14/2020	drios

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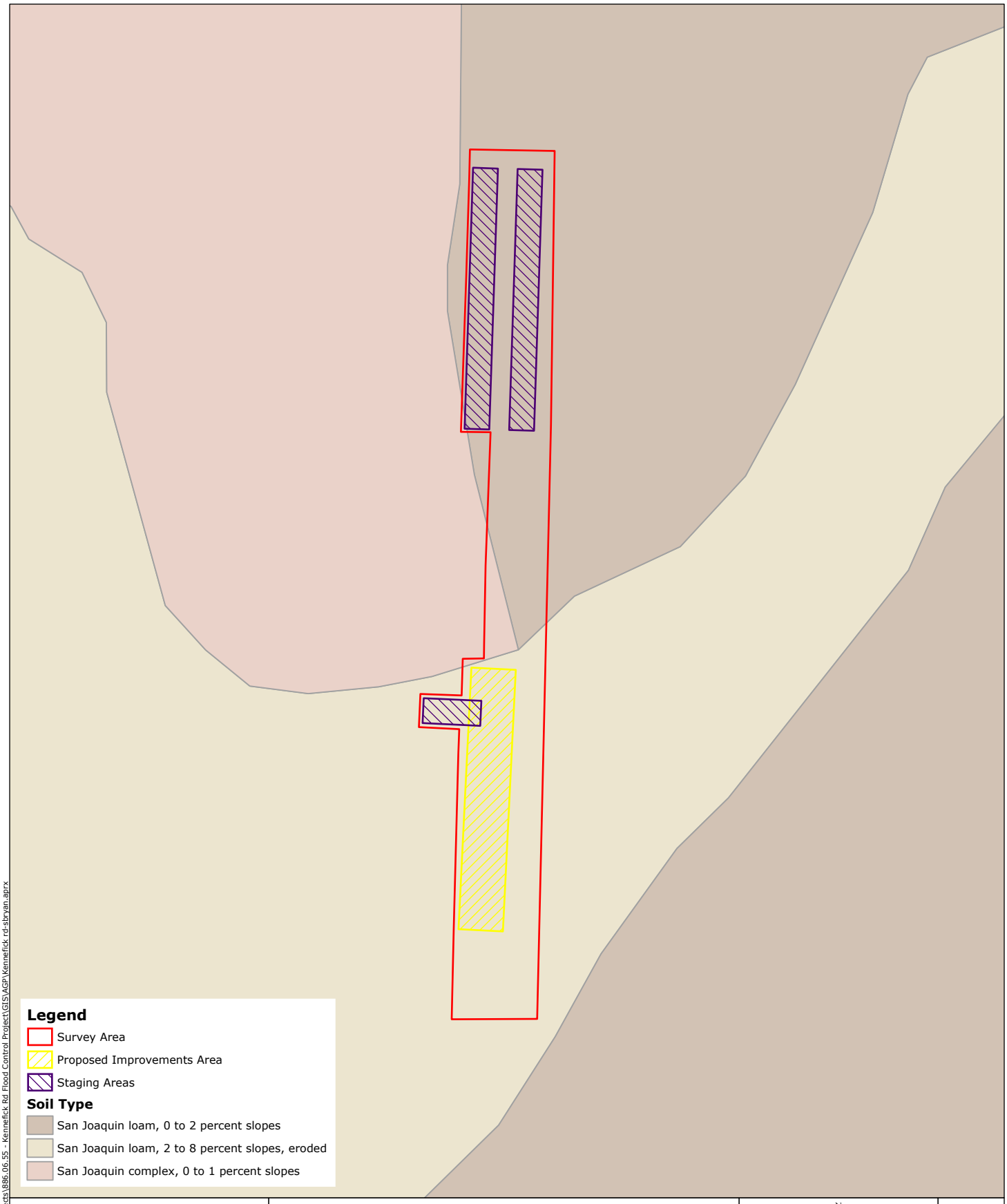

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

NRCS Soils Map

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 5

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
NCE 2020; NRCS Soils	886.06.55	cvaz/sbryan	6/2/2020	9/14/2020	drios

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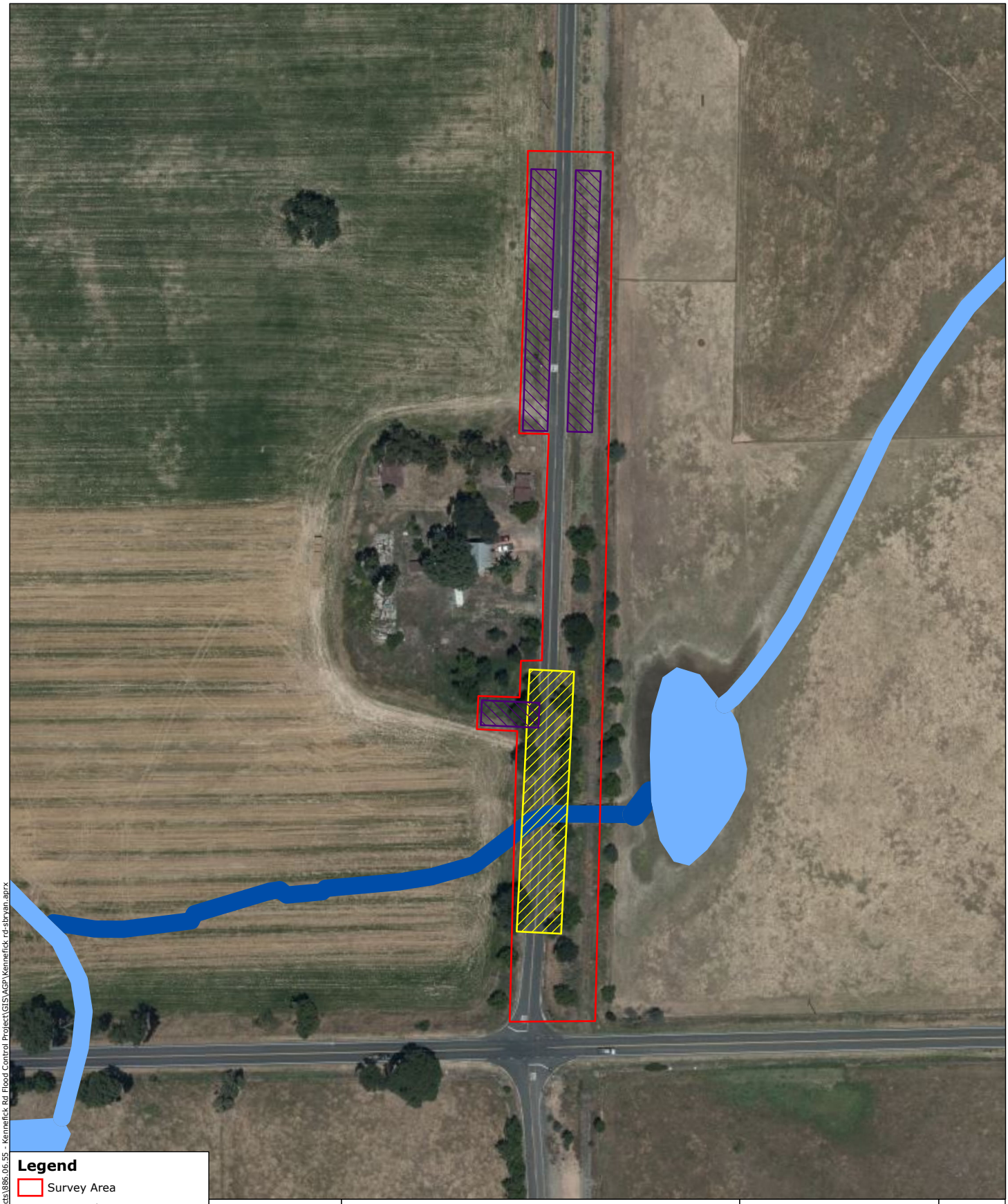

NCE

SAN JOAQUIN COUNTY CALIFORNIA

Kennefick Road Flood Control Project

National Wetlands Inventory (NWI) Map

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 6

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Maps Aerial; NWI; NCE 2020	886.06.55	cvaz/sbryan	6/9/2020	9/14/2020	drios

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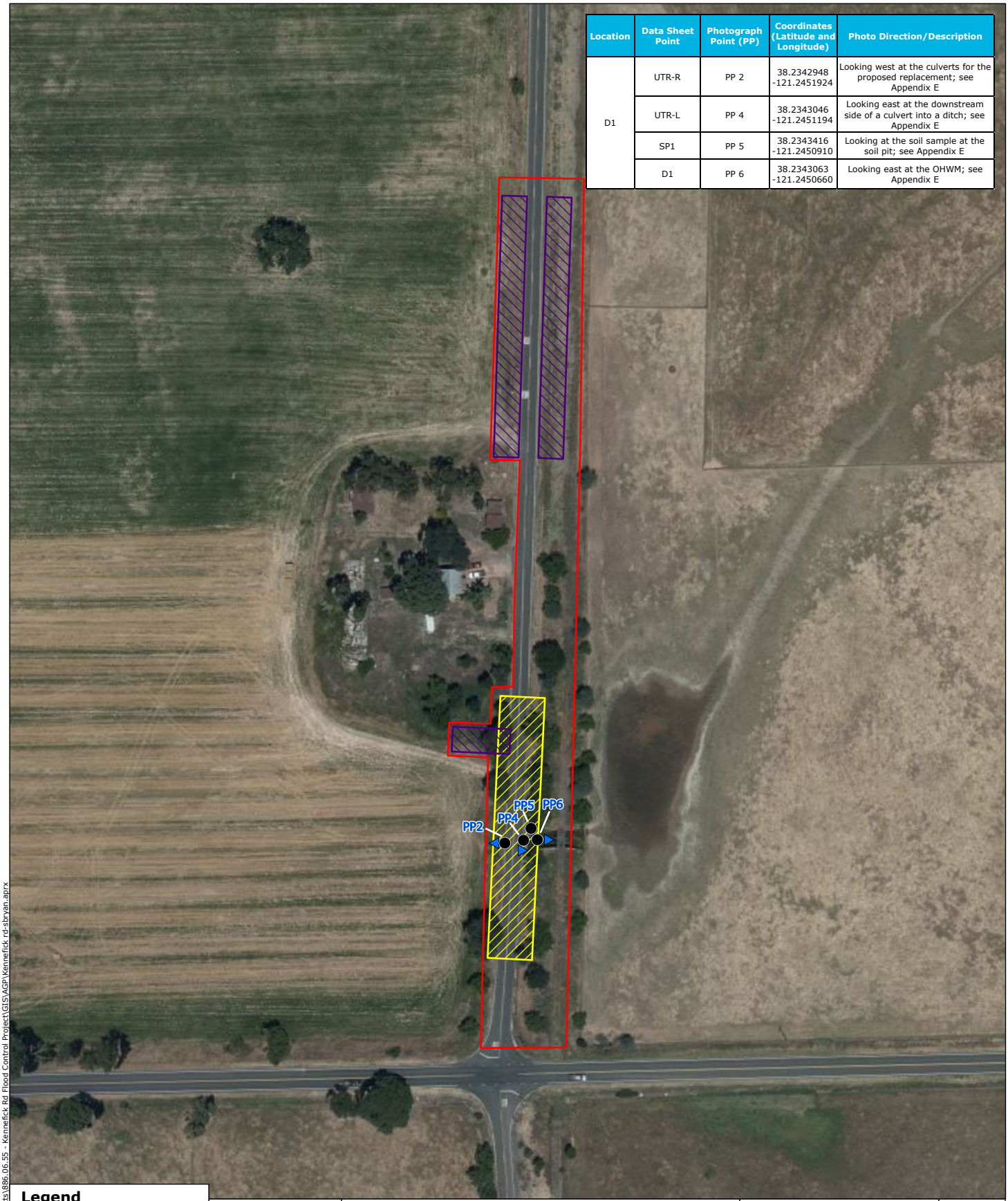

Location	Data Sheet Point	Photograph Point (PP)	Coordinates (Latitude and Longitude)	Photo Direction/Description
D1	UTR-R	PP 2	38.2342948 -121.2451924	Looking west at the culverts for the proposed replacement; see Appendix E
	UTR-L	PP 4	38.2343046 -121.2451194	Looking east at the downstream side of a culvert into a ditch; see Appendix E
	SP1	PP 5	38.2343416 -121.2450910	Looking at the soil sample at the soil pit; see Appendix E
	D1	PP 6	38.2343063 -121.2450660	Looking east at the OHWM; see Appendix E

Legend

- Survey Area
- Proposed Improvements Area
- Staging Areas
- Photograph Points
- Photo Direction

NCE

Kennefick Road Flood Control Project

Ground Level Photograph Locations and Directions

N

1 in. = 150 ft.

0 50 100 150 ft.

FIGURE 7

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Maps Aerial; NCE 2020	886.06.55	sbryan	9/2/2020	9/17/2020	drios

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Appendix C

Property Access Statement (Placeholder)

Appendix D

Plant List

Plant Species Identified Within the Survey Area – March 2020

Scientific Name	Common Name	Native: Y, N	Wetland Indicator Status*
Amsinkia grandiflora	Large-flowered fiddleneck	Y	UPL
Avena barbata	Wild oat	N	NL
Bromus diandrus	Ripgut brome	N	NL
Bromus hordeaceus	Soft chess	N	FACU
Conium maculatum	Poison hemlock	N	FACW
Eleocharis macrostachya	Spike rush	Y	NL
Juglans californica	California walnut	Y	FACU
Plantago lanceolata	Plantain	N	FAC
Raphanus sativus	Wild radish	N	NL
Rumex crispus	Curly dock	N	FAC
Stellaria media	Chickweed	N	FACU
Sonchus oleraceus	Common sow thistle	N	UPL
Vicia villosa	Spring vetch	N	NL

* Wetland Indicator Status:

OBL	=	Obligate wetland; occurs in aquatic resources > 99% of time
FACW	=	Facultative wetland; occurs in aquatic resources 67-99% of time
FAC	=	Facultative; occurs in aquatic resources 34-66% of time
FACU	=	Facultative upland; occurs in aquatic resources 1-33% of time
UPL	=	Obligate upland; occurs in uplands > 99% of time
NL	=	Not listed

Appendix E

Representative Photographs



Photograph 1: Looking north toward culverts near the Liberty Road and Kennefick Road intersection.



Photograph 2: UTR-R, looking west at the culverts for the proposed replacement.



Photograph 3: Middle of Kennefick Road, looking east at the railroad crossing.



Photograph 4: UTR-L, looking east at the downstream side of a culvert into a ditch.



Photograph 5: SP1, looking at the soil sample taken at soil pit 1.



Photograph 6: Unnamed Drainage 1, looking down at the OHWM.

Appendix F

DELINEATION DATASHEETS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Kennefick Road Repair City/County: San Joaquin Sampling Date: 3-23-20

Applicant/Owner: San Joaquin County State: CA Sampling Point: #1

Investigator(s): Quinn Redford Section, Township, Range: Section 6 T4N R7E

Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: San Joaquin (239) NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? NO Are "Normal Circumstances" present? Yes ○ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ○	
Hydric Soil Present?	Yes ○	No ○	**Is the Sampled Area within a Wetland?** Yes ○ No ○
Wetland Hydrology Present?	Yes ○	No ○	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover: %			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover: %			
Herb Stratum			
1. Hordeum	60		FACU
2. Bromus hordeaceus	10		FACU
3. Geranium	5		UL
4.			
5.			
6.			
7.			
8.			
Total Cover: 75 %			
Woody Vine Stratum			
1.			
2.			
Total Cover: %			

% Bare Ground in Herb Stratum 5 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	0
FACW species	x 2 =	0
FAC species	x 3 =	0
FACU species	x 4 =	0
UPL species	x 5 =	0
Column Totals: (A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ○

Remarks:

SOIL

Sampling Point: Soil Pit 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture[3]	Remarks
6	2.5 2						Sandy loam	
12	2.5 2							
18	2.5 2							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils:[4]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ✓ Depth (inches):

Water Table Present? Yes ○ No ✓ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ✓ Depth (inches):

Wetland Hydrology Present? Yes ○ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photos

Remarks:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Kennetick Road HGMP Project
Project Number: 986.06.55
Stream: Unnamed drainage
Investigator(s): Q. Kedford

Date: 3.23.20
Town: Galt, CA
Photo begin file#:

Time: 1201
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☐ Is the site significantly disturbed?

Location Details: Galt, CA

Projection: **Datum:** NAD1983
Coordinates: 38°14'03.34"N 121°14'42.33"W

Potential anthropogenic influences on the channel system:
The entire channel system is man made for collecting irrigation overflow + storm water.

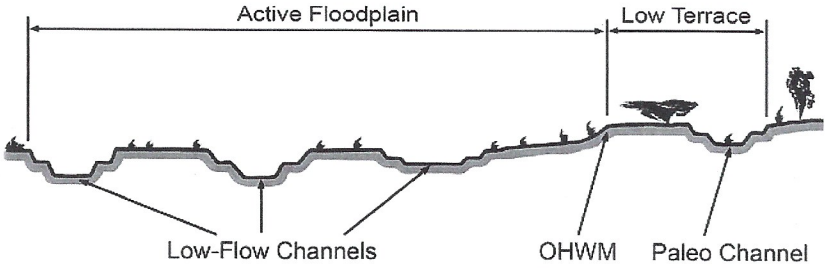
Brief site description:
Irrigation ditch with standing water from recent rains.

Checklist of resources (if available):

- ☑ Aerial photography
  Dates:
- ☑ Topographic maps
- ☐ Geologic maps
- ☑ Vegetation maps
- ☑ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☑ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

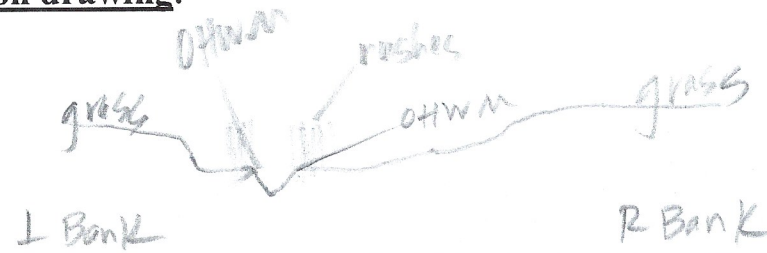


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ GPS
   - ☐ Digitized on computer
   - ☐ Other:

Project ID: 846.0655 **Cross section ID:** **Date:** 3.23.20 **Time:** 1201

Cross section drawing:



OHWM

GPS point: UTR-L + UTR-R
left bank right bank

Indicators:

- [x] Change in average sediment texture
- [x] Change in vegetation species
- [ ] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: _____
- [ ] Other: _____

Comments:

Flows to West. Standing water on East side of Rd from Spring precipitation. Clear OHWM channel.

Floodplain unit:

- [x] Low-Flow Channel
- [ ] Active Floodplain
- [ ] Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: Sandy loam

Total veg cover: 60 % Tree: _____% Shrub: _____% Herb: 60 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [ ] Soil development
- [x] Surface relief
- [ ] Other: _____
- [ ] Other: _____
- [ ] Other: _____

Comments:

Appendix G

AQUATIC RESOURCES SPREADSHEET AND GIS METADATA

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Appendix E

GEOTECHNICAL REPORT

Kennefick Road Flood Control Project

MGE ENGINEERING, INC.
7415 Greenhaven Drive • Suite 100 • Sacramento, CA 95831
TEL (916) 421-1000 • FAX (916) 421-1002

October 22, 2020

NCE
Attn: Ms. Katelyn Williams
8795 Folsom Blvd. Suite 250
Sacramento, CA 95826

SUBJECT: **GEOTECHNICAL REPORT**
Kennefick Road Culvert Repair Project
San Joaquin County, California

Dear Ms. Williams:

Transmitted herewith is our geotechnical report for the Kennefick Road Culvert Replacement Project. We prepared this report in accordance with your request under Work Authorization WA 20-03, dated February 27, 2020 as part of our Master Subconsultant Agreement SC#285-20.

As questions arise concerning subsurface conditions during planning and design, please call us. We have enjoyed this opportunity to provide engineering services for this project.

Very truly yours,
MGE Engineering

Martin W. McIlroy
MWM/mwm

Distribution: Client (1 PDF transmitted electronically)

MGE ENGINEERING, INC.

7415 Greenhaven Drive • Suite 100 • Sacramento, CA 95831 *TEL (916) 421-1000 • FAX (916) 421-1002*

KENNEFICK ROAD CULVERT REPAIR PROJECT
GEOTECHNICAL REPORT



Prepared for:

NCE

Prepared by:

MGE ENGINEERING, INC.

OCTOBER 22, 2020
MGE PROJECT NO. 627

Geotechnical Report
Kennefick Road Culvert Repair Project
San Joaquin County, California

1.0 INTRODUCTION/BACKGROUND

MGE completed a limited study of subsurface materials and conditions at the above site in accordance with the Work Authorization agreement between NCE and MGE Engineering. The purpose of this study is to provide foundation and earthwork recommendations for the culvert repair on Kennefick Road after damage caused by a storm event.

Evaluating the presence or absence of hazardous materials at the site is excluded from our scope of services. The project location is shown on Figure 1, Vicinity Map. Limitations of this study are discussed in Section 13.0, Limitations. This report supersedes any of our previous geotechnical reports and recommendations.

2.0 SITE DESCRIPTION



Exhibit 1 – Looking north on Kennefick Road

MGE understands that on February 10, 2017, culvert w232 was washed out on Kennefick Road. County road crews installed temporary repairs on February 13 and 22, 2017. Exhibit 1 shows the storm flow and resulting damage. The undersized culvert (s) were damaged and overwhelmed during the storm. During a flood event the water flow was intended to flow over the road without destroying it.

Immediately upstream from the Kennefick Road culverts is a railroad bridge and railroad embankment that parallels Kennefick Road on the east side. The railroad bridge opening directs surface water under the railroad towards Kennefick Road. The Railroad bridge is approximately 23-feet long and 14-feet wide with abutment walls that are approximately 15-feet tall. From Google Earth historic aerial photos, it appears that the railroad embankment impounds water on the east side of the track before the surface water flows under the railroad.

The project location is approximately 250-feet north of the intersection of Kennefick Road and Liberty Road. Kennefick Road is a two-lane road that is aligned approximately north south. Kennefick Road provides access to residences, farms, and businesses near the project area.

Adjacent to the project area is a westerly draining ephemeral tributary that conveys overflow from a nearby creek (Dry Creek) across agricultural land. It crosses under Kennefick Road at the project site through two 18-inch diameter and one 11-inch diameter corrugated metal pipe culverts that the County placed after the flooding event. Exhibit 2 shows the County temporarily replacing culverts and fill to provide a temporary road re-opening.



Exhibit 2 – looking east; Railroad bridge wingwall in right side of picture.

The original damaged culverts were salvaged and replaced, the embankment restored and the roadway paved to a similar grade and alignment. The replacement culverts appear to function adequately, but do not provide any additional protection from similar or more severe storm events like the storm experienced in 2017.

3.0 SITE GEOLOGY

A geologic map by Marchand (1979) shows alluvial deposits consisting of Holocene/Pleistocene Undifferentiated Alluvium and Colluvium (Qu) and Pleistocene Middle Unit Riverbank Formation (Qr_2) underlie the site. The Qu material is described as Holocene Modesto, and Upper Riverbank Formations that are known as Bear Creek Soils. The Qr_2 unit is described as, "Arkosic alluvium

forming Mokelumne River terraces and alluvial fan; chiefly sand; probably glacial outwash known as San Joaquin soils." Figure 3, Geologic Map shows the site geology.

4.0 PROJECT DESCRIPTION

MGE reviewed a plan sheet provided electronically by NCE, that is titled, "Kennefick Road Flood Control Project" and dated, September 25, 2020, that shows the proposed repairs. MGE understands that the proposed repair includes replacing the existing culverts with six pre-cast reinforced concrete box culverts that will form a three-barrel culvert system. The configuration of the boxes will be two boxes wide and three boxes long that have a total 25-foot wide by 40.25-foot long footprint. Each pre-cast reinforced concrete box is 12.5 feet wide and 13.25 feet long with a culvert opening of 12-feet by 5-feet. From the preliminary plan sheet of the selected alternative, the culvert invert will be at elevation 58.20 feet and the culvert cutoff will be approximately four feet below the culvert invert at elevation 54.20 feet.

To accommodate the larger culvert, the roadway embankment will be raised approximately 4-feet and have 2 horizontal to 1 vertical (2H:1V) side slopes. The replaced roadway will have two 12-foot travel lanes and 4-foot shoulders. The existing pavement (approximately 12,800 square feet) will be removed and replaced. NCE is also considering placing riprap protection at the upstream and downstream sides of the culvert to reduce potential future damage to the culvert and roadway maintenance and repairs.

5.0 EXPLORATION

The subsurface exploration program for the proposed culvert and roadway repairs included drilling and sampling two borings (designated as B-1 and B-2). Figure 2, Site and Exploration plan shows the locations of the borings. The borings were located in the southbound lane away from the high voltage power lines on the east side of the road and in locations that provided safe conditions for drilling.

A representative from MGE was present during field explorations to observe drilling operations, retrieve representative soil samples for laboratory testing, and prepare descriptive field logs for the borings. The encountered soil was field classified in general accordance with the American Society for Testing and Materials (ASTM) International Designation: D 2488, Standard Recommended Practice for Description of Soils (Visual-Manual Procedure). MGE's field representative collected bulk soil samples from auger cuttings and soil samples from driven spilt-spoon samplers at selected depths. After visually classifying and logging the samples, our field representative sealed them in labeled plastic bags to preserve the moisture in the soil samples.

Figure 4 presents the boring log material classification key. We present the boring logs in Figure 5. Depths shown on the boring logs are approximate and relative to the existing ground surface at the time of the explorations. Boring elevations are estimated from the undated NCE preliminary plan topography received electronically from NCE on March 12, 2020.

Geo-Ex Subsurface Exploration of Dixon, California, drilled the borings using a CME-75 truck mounted drill rig. Geo-Ex completed the borings to 20-foot depth and sampled to 21.5 feet depth below existing ground surface. Geo-Ex drilled the borings on April 13, 2020.

After completion of the borings, the contractor backfilled them with grout to ground surface. The boring backfill was witnessed by Daria Afonskaia, the San Joaquin County grout inspector. Geo-Ex drilled in the paved roadway surface and topped off the grout backfill with quickcrete and grout and dyed the surface black.

6.0 LABORATORY TESTING

MGE selected samples for laboratory testing and provided these samples to Gulf Shore Construction Services of Rancho Cordova, California to complete the tests. Laboratory testing included:

- Moisture Content - Unit Dry Weight (ASTM D7263)
- Particle Size Analysis (ASTM D6913)
- Atterberg Limits (ASTM D4318)
- Moisture Content (ASTM D4224)

Results of laboratory tests are included in Figure 6, Laboratory Test Results.

7.0 SUBSURFACE MATERIALS AND CONDITIONS

Native materials encountered in the borings are generally clayey sand and sandy clay with thin lenses of silt and clay below a thin 3 to 5-inch aggregate base and a 2 to 8-inch asphalt layer. The aggregate base and asphalt comprise the fill associated with the roadway embankment section. Cobbles and rock were not encountered in the borings.

We include the Boring Log Legend in Figure 4. We include soil descriptions, the laboratory test locations and results, in Figure 5, Boring Logs, and Figure 6, Laboratory Test Results.

8.0 GROUNDWATER

MGE's field representative did not observe groundwater in the borings. Water was ponded below the railroad bridge on the east side of the roadway. The surface water elevation was below the temporary culvert invert elevations.

9.0 CORROSION EVALUATION

Sunland Analytical completed a corrosivity test (CTM 643, CTM 417, and CTM 422) on one soil sample obtained from our borings. The corrosivity test result is summarized below in Table 1, Soil Corrosivity Test Results.

Table 1 Soil Corrosivity Test Results

Boring/ Sample Number	Depth (feet)	Approximate Elevation (feet)	pH	Minimum Resistivity (ohm-cm)	Chloride (ppm)	Sulfate (ppm)
B-1/Bag A	1 to 5	60.5 to 56.5	6.01	2,680	6.9	31.4

Notes:
1. Caltrans considers a site to be corrosive to foundation elements if one or more of the following conditions exist: chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2,000 ppm, or pH is 5.5 or less (Caltrans, 2018).
ohm-cm = ohm centimeter
ppm = parts per million

The test result indicates that the soil environment is not considered corrosive for steel and concrete elements according to Caltrans criteria (Caltrans, 2018). The boring logs show sample locations and descriptions, and we enclose the original Sunland Analytical laboratory report as part of Figure 6.

10.0 CONCLUSIONS AND DISCUSSION

The roadway subgrade consists of sandy clay and clayey sand. Pictures of the temporary repairs on Kennefick Road show that the County placed 3 to 6-inch drain rock as a foundation for the fill and the temporary culverts at the site. Our explorations did not encounter drain rock but drain rock should be expected at the site based on the repair photos and exposures of drain rock at the ground surface near the temporary culverts. The temporary roadway embankment fill may also contain oversize materials including cobbles, asphalt, and other debris depending on how the roadway was reconstructed. Asphalt debris was visible at the site on the west shoulder.

In our opinion, import engineered fill placed on existing native soil that is processed, compacted, and constructed according to our recommendations can support the proposed culvert and embankment repairs. MGE provides recommendations for preparation of the culvert and embankment foundations and for earthwork in the following sections.

11.0 RECOMMENDATIONS

11.1 Culvert and Embankment Foundation Earthwork

11.1.1 General

The applicability of the foundation and earthwork design parameters recommended depends on quality construction practices. In our opinion, earthwork operations for culvert construction can be accomplished with conventional earthwork equipment. Use the following recommendations for this project.

11.1.2 Clearing and Grubbing

All vegetation and debris should be removed from the areas to be treated and/or filled. The area to receive fill should be free of all roots and other organic material. Underground structures and utilities should be removed/relocated or otherwise abandoned in accordance with public agency requirements and as determined by the Soils Engineer. The fill foundation should be stripped to a depth of at least 6 inches exposing firm foundation material capable of achieving specified compaction.

Debris or materials generated from clearing and grubbing should not be used as fill within the proposed embankment below the culvert foundations or as backfill against the culvert. Debris includes asphalt, glass, and metal scrap or other similar and deleterious materials found in the embankment. This material should be disposed of properly and not used for this project.

11.1.1 Suitability of On-Site Soils

On-site soils are not suitable for use as engineered fill for backfill behind the culvert walls. Onsite soils do not meet Caltrans criteria for Structure Backfill.

11.1.2 Subgrade Preparation/Fill Foundation

Subgrade preparation will consist of excavating and processing the existing soil. Cobbles and debris will likely be present in the excavations. Cobbles should be disposed or re-used in the proposed fill slope outside the limits of the culvert and wingwall subgrade preparation areas and not used in the wall backfill. Prepare the subgrade as follows.

Excavate to three feet below the depth of planned culvert bottom elevation and to three feet below planned base of culvert wingwalls. Soil exposed at subgrade should be compacted to 95 percent relative compaction to between optimum moisture and two percent above optimum moisture content (ASTM 1557) where the culvert and wingwall footprints are proposed. This will prepare the subgrade as a foundation for the imported engineered fill.

Prior to soil subgrade compaction, MGE's field representative should observe the exposed subgrade and confirm subgrade materials and conditions. If the exposed subgrade is considered soft/loose, it should be overexcavated an additional 12 inches. If the newly exposed surface after overexcavation meets the approval of MGE, scarify the soil to a depth of 6 inches, moisture-condition the soil to between optimum moisture and two percent above optimum moisture, and uniformly compact to at least 90 percent relative compaction (CTM 216). The contractor should compact the soil as the engineered embankment is constructed. The overexcavated soil should be properly disposed.

For sloped excavations, benches should be cut into the slope using a 1H:1V temporary slope geometry to provide an adequate surface for fill placement, to help provide a foundation bond between the existing and imported fill materials, and to increase the stability of the fill once placed in the excavations. Benches should conform to Caltrans 2018 Standard Specifications. The roadway embankment should be overbuilt to 1 foot beyond planned slopes and trimmed back to finished grade to achieve the required compaction.

Boring excavation depths may be below the planned culvert or wingwall base. If/where this occurs, excavations to prepare the subgrade should completely remove disturbed soil and grout backfill column to 1 foot below proposed structures before preparing the subgrade as recommended.

11.2 Culvert and Wingwall Foundation

The standard 4-ft depth below slab invert for cutoffs appears adequate. The cutoff excavations should be deepened as needed to engage at least 1-ft of undisturbed soil. The culvert should be founded on a base of at least 6-inches of Caltrans Permeable Material. Placement and recommendations for Caltrans Permeable Material follow.

Spread footing foundations for wingwalls established in engineered fill below elevation 54.5-feet should adequately support the culvert. We include Figure 7, Factored Bearing Resistance Versus Footing Width that shows factored bearing resistance for various footing widths and limiting settlement and strength limit envelopes. The designer should use this graph to size footing dimensions for the wingwalls.

Footing settlement under such loading is expected to be less than 1-inch and to occur as load is applied. Wingwall footings bearing at levels above elevation 55 are not recommended, but if needed, this office should be consulted to develop recommendations for footing support. Footing protection may be required for footings exposed to surface flow and established above elevation 55 feet.

Footing resistance to sliding may be based on friction coefficient of 0.40 times applied load. With minimum 5-ft horizontal clearance between the top of footing and any slope face, footings may be assigned a nominal passive soils resistance of 400 pcf equivalent fluid pressure.

Culvert and wall backfill should consist of Caltrans Structure Backfill and use the lateral earth pressures recommended below. Structure Backfill placed behind the walls should extend horizontally away from the wall a distance equal to at least ¾ the wall height.

11.2.1 Engineered Granular Import Fill

Imported fill should conform to Caltrans 2018 Standard Specifications. Excavations and earthwork should follow Caltrans 2018 Standard Plans and Specifications and Cal-OSHA requirements. Details of materials and placement follow.

11.2.1.1 Caltrans Permeable Material

The contractor should place a minimum 12 inches of Caltrans Class 1, Type B, Permeable Material below the culvert. Caltrans Class 1, Type B, Permeable Material should meet Standard Specification 68-2.02F. Caltrans Permeable Material should be placed to 95% relative compaction (ASTM 1557) to within two percent of optimum moisture.

11.2.1.2 Caltrans Structure Backfill

Import fill is required to provide increased stability for the roadway improvements. We recommend using Caltrans Structure Backfill material as specified in the Caltrans 2018 Standard Specification 19-3.02C. Structure Backfill should be used as the wingwall engineered fill foundation on the prepared subgrade and as backfill behind the culvert walls. Imported material should have low plasticity fines (Plastic Index less than or equal to 6) and sand equivalent (CTM 217) that is greater than or equal to 12.

11.2.2 Placement

Engineered fill should be placed in uniform lifts and compacted to at least 95 percent relative compaction (ASTM 1557). Place engineered fill in uniform, horizontal layers not exceeding 8 inches in loose thickness for heavy compactors, or 4 inches for hand-operated mechanical compactors. The appropriate lift thickness would depend on the contractor's equipment and the import fill moisture content. The geotechnical engineer should test and approve any imported materials used for fill.

The engineered fill should extend to a minimum 3 feet beyond the front and sides of the spread footing foundations and should be a minimum 3 feet below the base of the wall.

If subgrade or placed engineered fill soil becomes loose or disturbed during grading, the affected soil should be excavated to expose competent, undisturbed soil and replaced with properly compacted engineered fill. We recommend that MGE personnel observe engineered fill placement and perform in-place density tests to evaluate whether the specified compaction is achieved.

If time passes due to construction delays, or otherwise, and the site is left exposed, the contractor, upon restarting construction, should recondition and re-compact the soil to depths necessary to meet the project specifications.

11.2.3 Lateral Earth Pressures

We recommend using the equivalent fluid pressures (EFPs) shown in Table 2 to design the culvert wingwalls.

Table 2 Equivalent Fluid Pressures

Active Static EFP (pcf)	At-Rest EFP (pcf)	Passive Static EFP (pcf)	Active Seismic EFP (pcf)
34	54	428	8

Notes:
EFP = equivalent fluid pressure
pcf = pounds per cubic foot

For static design, apply the resultant of the static active earth pressure at a depth of H/3 from the bottom of the wall where H equals the wall height in feet. For seismic design, apply a uniform distributed pressure using the active Seismic EFP in the table. Add the resultant of the seismic earth pressure to the resultant of the static active earth pressure.

The EFP values shown above are consistent with Caltrans standards and practices and assume level backfill conditions using Caltrans Structure Backfill with a soil unit weight of 120 pounds per cubic foot, a minimum angle of internal friction of 34 degrees, and drainage behind walls is placed in accordance with Caltrans Standard Plans and Specifications. Structure Backfill specifications are described in Section 19-3.02C of the 2018 Caltrans Standard Specifications.

For surcharge loads, apply an additional uniform lateral load behind the wall equivalent to 0.3 times the calculated surcharge pressure (minimum surcharge pressure of 240 pounds per square foot). The designer should also account for construction surcharge loads.

11.3 Drainage/Subdrainage

The designer should include drainage per Caltrans "Standard Plan" details or by pervious backfill wrapped in a non-woven geotextile fabric. Drainage is critical to structure performance and MGE should review drainage details when final details are defined.

12.0 ADDITIONAL SERVICES

We recommend that MGE be retained to review the geotechnical aspects of final plans and specifications to determine that they are consistent with our recommendations.

In addition, NCE or the County should retain MGE to observe the geotechnical aspects of construction. Retaining MGE during construction will allow us to evaluate the exposed subsurface conditions and to observe whether the contractor completes the work in accordance with the project plans and specifications, and our recommendations. If others perform construction observation, they should review this report and either accept the conclusions and recommendations herein as their own or provide alternative recommendations.

13.0 LIMITATIONS

MGE prepared this geotechnical report for the exclusive use of the NCE design team for specific application to the culvert and road repairs required for this project. This report is not a warranty of subsurface conditions, such as those interpreted from the discussions of subsurface conditions included in this report. This report is intended only for the purpose, site location and project description indicated and assumes construction in accordance with Caltrans practice.

The analyses, conclusions, and recommendations contained in this report are based on interpreted site conditions, as they presently exist. If conditions different from those described in this report are observed or appear to be present during construction, we should be advised at once so that we can review these conditions and reconsider our recommendations, where necessary. If there is a substantial lapse of time between submission of our report and the start of work at the site (after 2 years have passed), or if conditions have changed because of natural forces, construction operations at or near the site, or any other reason, we recommend that this report be reviewed to evaluate the applicability of the conclusions and recommendations considering the changed conditions and time lapse.

Standards, site conditions, and technical knowledge change with time. MGE should review our recommendations after a period of two years to evaluate applicability of our recommendations. Review after a period of two years is a condition of this report and our recommendations.

Within the limitations of the scope, schedule, and budget, the analyses, conclusions, and recommendations presented in this report were prepared in accordance with generally accepted, professional, geotechnical engineering principles and practices in this area at the time this report was prepared. We make no other warranty, either express or implied. These conclusions and recommendations were based on our understanding of the project as described in this report and the site conditions as interpreted from our office research, site visit, and soil encountered in the borings.

Unanticipated soil conditions are commonly encountered and cannot be fully determined by merely taking soil samples or completing boring excavations. Such unexpected conditions frequently require that additional expenditures be made to attain a properly constructed project. Therefore, a contingency fund is recommended to accommodate such potential extra costs.

The scope of our present services did not include environmental assessments or evaluations regarding the presence or absence of wetlands, or hazardous or toxic substances in the soil, surface water, groundwater, or air, on or below or around this site, or for the evaluation or disposal of contaminated soils or groundwater should any be encountered. MGE has prepared Appendix A, "Important Information About Your Geotechnical/Environmental Report," to help you and others to understand the use and limitations of this report.

MGE ENGINEERING, INC.



Martin McIlroy, PE, CEG
Senior Project Manager

MWM/RES/mwm

Attachments:

Selected References

Figure 1	Vicinity Map
Figure 2	Site and Exploration Plan
Figure 3	Geologic Map
Figure 4	Boring Log Legend
Figure 5	Boring Logs
Figure 6	Laboratory Test Results
Figure 7	Factored Bearing Resistance Versus Footing Width Rectangular Footing, L/B = 2
Appendix A	Important Information About your Geotechnical/Environmental Report

SELECTED REFERENCES

Bortugno, E.J., McJunkin, R.D., and Wagner, D.L., 1990, Map showing recency of faulting, San Francisco-San Jose quadrangle, California, 1:250,000: California Division of Mines and Geology, Regional Geologic Map 5A, scale 1:250,000.

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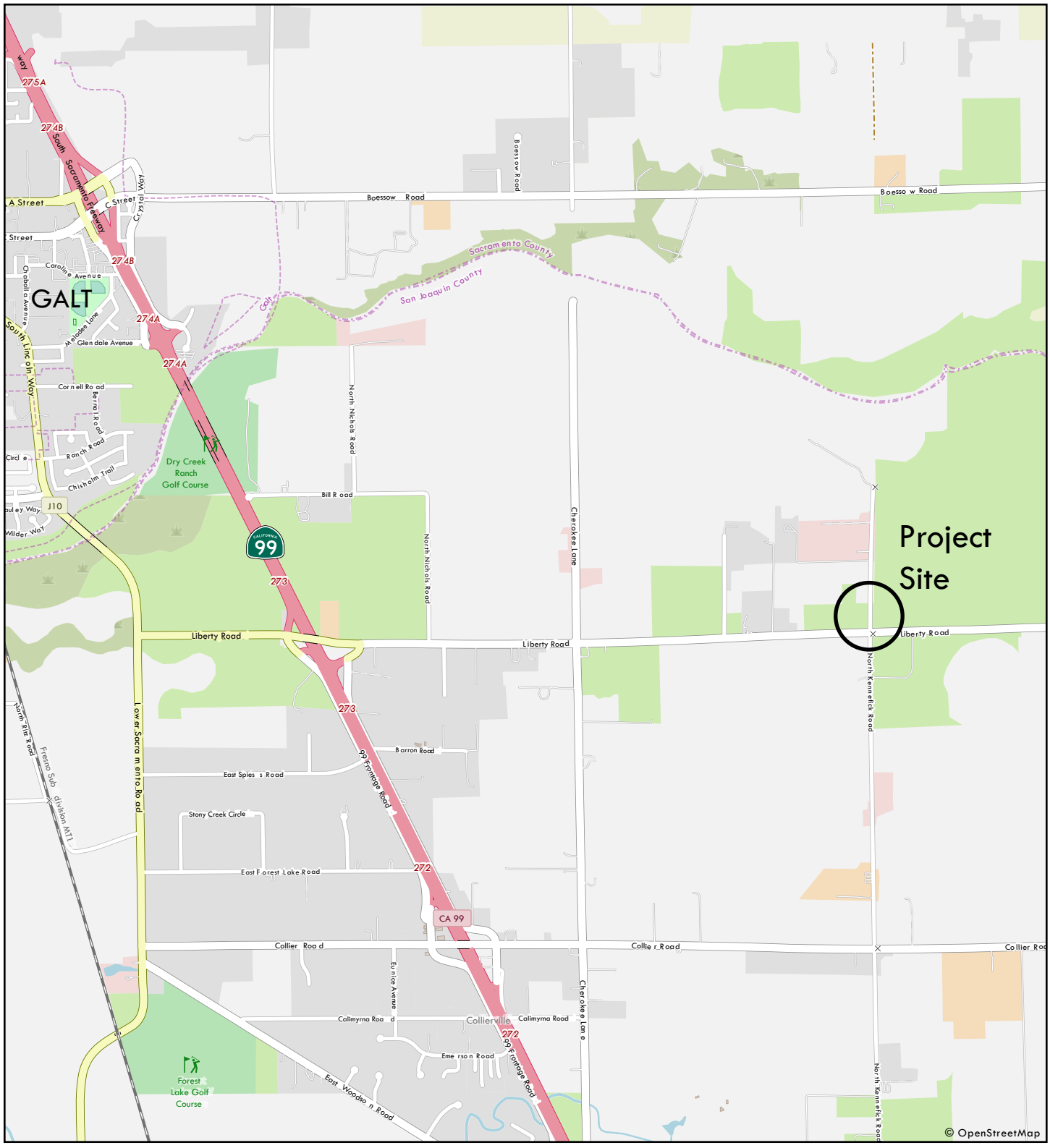
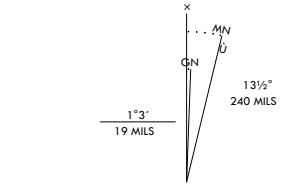
“Earthquake Fault Zone Maps.” CGS Information Warehouse: Regulatory Maps, Web. 13 May 2019. https://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/





UTM GRID AND 2017 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

2500 0 2500 5000
FEET

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route
FS Primary Route
FS Passenger Route
FS High Clearance Route

Notes:
Map adapted from OpenStreetMap.org

Kennefick Road Culvert Repair
San Joaquin County, California

VICINITY MAP

October 2020 Project No. 627

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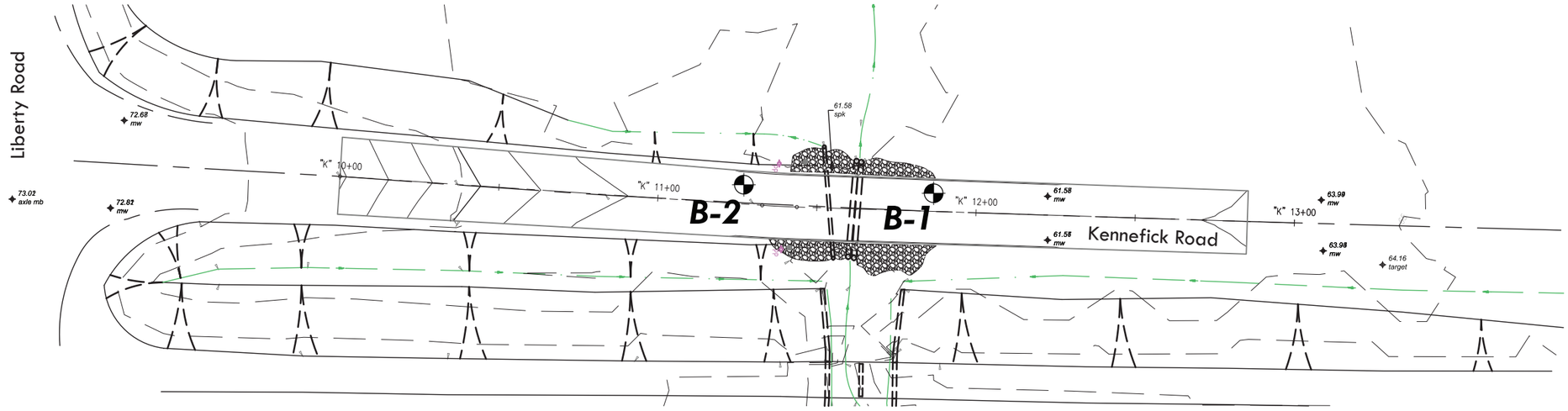
Civil, Structural, and Geotechnical Engineers

FIG. 1



PLAN VIEW
Scale 1" = 40'

NOTES:

1. Borings were located using existing site features.

B-3 Boring Location and Designation

Kennefick Road Culvert Repair
San Joaquin County, California

SITE AND EXPLORATION PLAN

October 2020 Project No. 627

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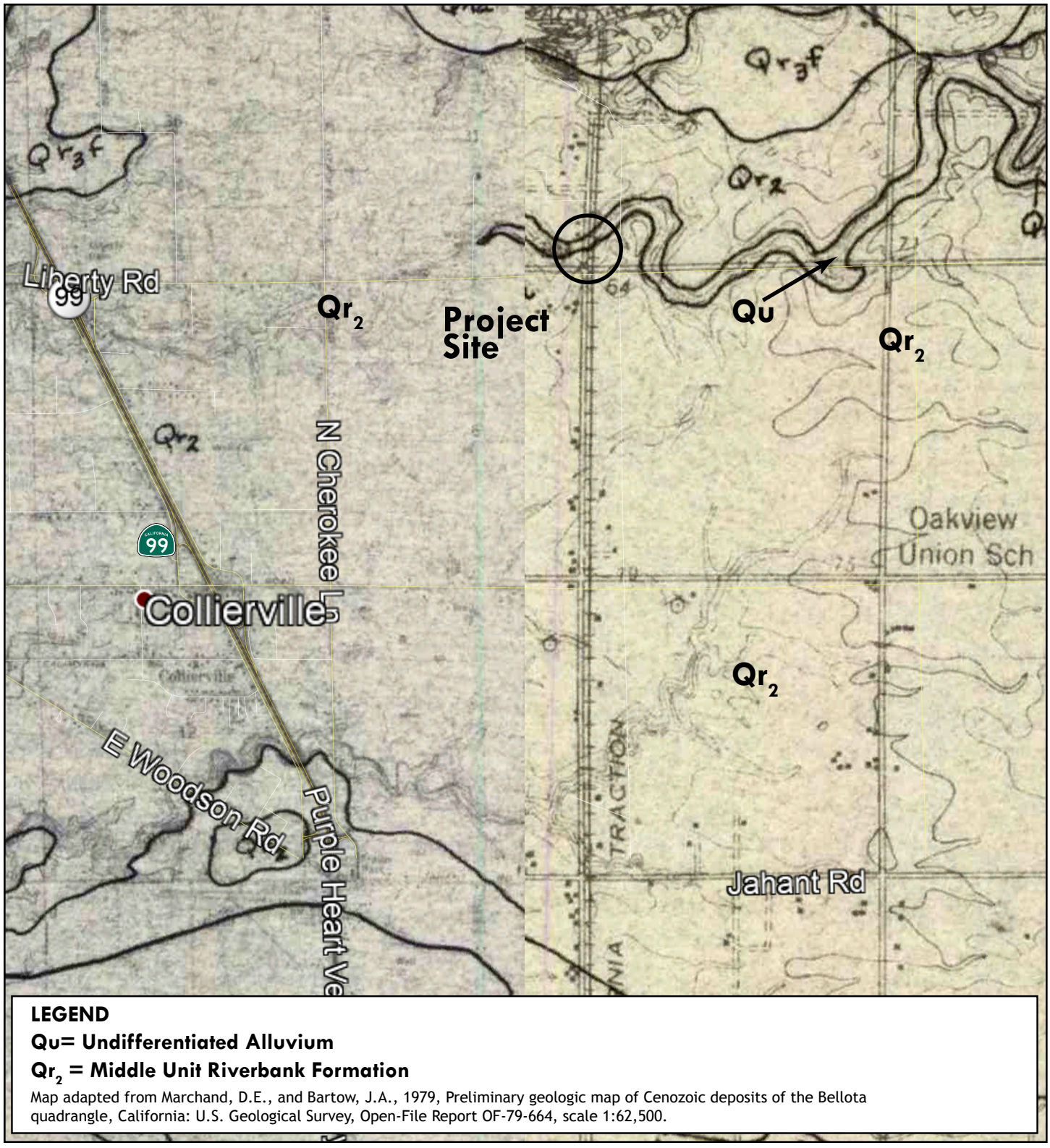
Civil, Structural, and Geotechnical Engineering

FIG. 2

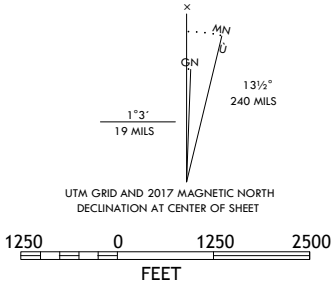


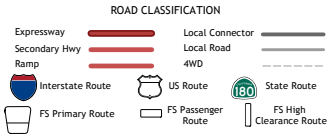
LEGEND

Qu= Undifferentiated Alluvium

Qr_2 = Middle Unit Riverbank Formation

Map adapted from Marchand, D.E., and Bartow, J.A., 1979, Preliminary geologic map of Cenozoic deposits of the Bellota quadrangle, California: U.S. Geological Survey, Open-File Report OF-79-664, scale 1:62,500.





Kennefick Road Culvert Repair
San Joaquin County, California

GEOLOGY MAP

October 2020 Project No. 627

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FIG. 3

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic / Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTS

C	Consolidation (ASTM D 2435-04)
CL	Collapse Potential (ASTM D 5333-03)
CP	Compaction Curve (CTM 216 - 06)
CR	Corrosion, Sulfates, Chlorides (CTM 643 - 99; CTM 417 - 06; CTM 422 - 06)
CU	Consolidated Undrained Triaxial (ASTM D 4767-02)
DS	Direct Shear (ASTM D 3080-04)
EI	Expansion Index (ASTM D 4829-03)
M	Moisture Content (ASTM D 2216-05)
OC	Organic Content (ASTM D 2974-07)
P	Permeability (CTM 220 - 05)
PA	Particle Size Analysis (ASTM D 422-63 [2002])
PI	Liquid Limit, Plastic Limit, Plasticity Index (AASHTO T 89-02, AASHTO T 90-00)
PL	Point Load Index (ASTM D 5731-05)
PM	Pressure Meter
PP	Pocket Penetrometer
R	R-Value (CTM 301 - 00)
SE	Sand Equivalent (CTM 217 - 99)
SG	Specific Gravity (AASHTO T 100-06)
SL	Shrinkage Limit (ASTM D 427-04)
SW	Swell Potential (ASTM D 4546-03)
TV	Pocket Torvane
UC	Unconfined Compression - Soil (ASTM D 2166) Unconfined Compression - Rock (ASTM D 7012)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850-03)
UW	Unit Weight (ASTM D 4767-04)
VS	Vane Shear (AASHTO T 223-96 [2004])

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler (2.5" I.D.)
- Modified California Sampler (2.0" I.D.)
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (short-term)
- Static Water Level Reading (long-term)

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Sacramento, California 95831
(916) 421-1000

LOGGED BY: MWM	REPORT TITLE: BORING RECORD LEGEND				HOLE ID: B-1
BEGIN DATE: 4-13-20	DIST.: 10	COUNTY: SJ	ROUTE: CR	POSTMILE:	PROJECT ID: 627
COMPLETION DATE: 4-13-20	PROJECT OR BRIDGE NAME: Kennefick Road Culvert Repair				
	BRIDGE NUMBER:	PREPARED BY: MWM		DATE: 4-21-20	SHEET: 1 of 3

CONSISTENCY OF COHESIVE SOILS

Descriptor	Unconfined Compressive Strength (tsf)	Pocket Penetrometer (tsf)	Torvane (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 - 0.50	0.25 - 0.50	0.12 - 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 - 1.0	0.50 - 1.0	0.25 - 0.50	Can be penetrated several inches by thumb with moderate effort
Stiff	1.0 - 2.0	1.0 - 2.0	0.50 - 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2.0 - 4.0	2.0 - 4.0	1.0 - 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

APPARENT DENSITY OF COHESIONLESS SOILS

Descriptor	SPT N_{60} - Value (blows / foot)
Very Loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Descriptor	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Descriptor	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

SOIL PARTICLE SIZE

Descriptor		Size
Boulder		> 12 inches
Cobble		3 to 12 inches
Gravel	Coarse	3/4 inch to 3 inches
	Fine	No. 4 Sieve to 3/4 inch
Sand	Coarse	No. 10 Sieve to No. 4 Sieve
	Medium	No. 40 Sieve to No. 10 Sieve
	Fine	No. 200 Sieve to No. 40 Sieve
Silt and Clay		Passing No. 200 Sieve

PLASTICITY OF FINE-GRAINED SOILS

Descriptor	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled, and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll, and not much time is required to reach the plastic limit; it cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

CEMENTATION

Descriptor	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

NOTE: This legend sheet provides descriptors and associated criteria for required soil description components only. Refer to Caltrans Soil and Rock Logging, Classification, and Presentation Manual (July 2007), Section 2, for tables of additional soil description components and discussion of soil description and identification.

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LOGGED BY: MWM	REPORT TITLE: BORING RECORD				HOLE ID: B-1	
BEGIN DATE: 4-13-20	DIST.: 10	COUNTY: SJ	ROUTE: CR	POSTMILE	PROJECT ID: 627	
COMPLETION DATE: 4-13-20	PROJECT OR BRIDGE NAME: Kennefick Road Culvert Repair					
	BRIDGE NUMBER	PREPARED BY: MWM			DATE: 4-21-20	SHEET: 2 of 3

ROCK GRAPHIC SYMBOLS


IGNEOUS ROCK


SEDIMENTARY ROCK


METAMORPHIC ROCK

BEDDING SPACING

Descriptor	Thickness or Spacing
Massive	> 10 ft
Very thickly bedded	3 to 10 ft
Thickly bedded	1 to 3 ft
Moderately bedded	3-5/8 inches to 1 ft
Thinly bedded	1-1/4 to 3-5/8 inches
Very thinly bedded	3/8 inch to 1-1/4 inches
Laminated	< 3/8 inch

WEATHERING DESCRIPTORS FOR INTACT ROCK

	Diagnostic Features					
	Chemical Weathering-Discoloration-Oxidation		Mechanical Weathering and Grain Boundary Conditions	Texture and Solutioning		
Descriptor	Body of Rock	Fracture Surfaces		Texture	Solutioning	General Characteristics
Fresh	No discoloration, not oxidized	No discoloration or oxidation	No separation, intact (tight)	No change	No solutioning	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull	Minor to complete discoloration or oxidation of most surfaces	No visible separation, intact (tight)	Preserved	Minor leaching of some soluble minerals may be noted	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty"; feldspar crystals are "cloudy"	All fracture surfaces are discolored or oxidized	Partial separation of boundaries visible	Generally preserved	Soluble minerals may be mostly leached	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in situ disaggregation (refer to grain boundary conditions)	All fracture surfaces are discolored or oxidized; surfaces are friable	Partial separation, rock is friable; in semi-arid conditions, granitics are disaggregated	Altered by chemical disintegration such as via hydration or argillation	Leaching of soluble minerals may be complete	Dull sound when struck with hammer; usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures or veinlets. Rock is significantly weakened.
Decomposed	Discolored of oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay		Complete separation of grain boundaries (disaggregated)	Resembles a soil; partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes".

Note: Combination descriptors (such as "slightly weathered to fresh") are used where equal distribution of both weathering characteristics is present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, combination descriptors should not be used where significant identifiable zones can be delineated. Only two adjacent descriptors shall be combined. "Very intensely weathered" is the combination descriptor for "decomposed to intensely weathered".

RELATIVE STRENGTH OF INTACT ROCK

Descriptor	Uniaxial Compressive Strength (psi)
Extremely Strong	> 30,000
Very Strong	14,500 - 30,000
Strong	7,000 - 14,500
Medium Strong	3,500 - 7,000
Weak	700 - 3,500
Very Weak	150 - 700
Extremely Weak	< 150

ROCK HARDNESS

Descriptor	Criteria
Extremely Hard	Specimen cannot be scratched with pocket knife or sharp pick; can only be chipped with repeated heavy hammer blows
Very hard	Specimen cannot be scratched with pocket knife or sharp pick; breaks with repeated heavy hammer blows
Hard	Specimen can be scratched with pocket knife or sharp pick with heavy pressure; heavy hammer blows required to break specimen
Moderately Hard	Specimen can be scratched with pocket knife or sharp pick with light or moderate pressure; breaks with moderate hammer blows
Moderately Soft	Specimen can be grooved 1/6 in. with pocket knife or sharp pick with moderate or heavy pressure; breaks with light hammer blow or heavy hand pressure
Soft	Specimen can be grooved or gouged with pocket knife or sharp pick with light pressure, breaks with light to moderate hand pressure
Very Soft	Specimen can be readily indented, grooved, or gouged with fingernail, or carved with pocket knife; breaks with light hand pressure

CORE RECOVERY CALCULATION (%)

$$\frac{\Sigma \text{ Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100$$

RQD CALCULATION (%)

$$\frac{\Sigma \text{ Length of intact core pieces} > 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100$$

FRACTURE DENSITY

Descriptor	Criteria
Unfractured	No fractures
Very Slightly Fractured	Lengths greater 3 ft
Slightly Fractured	Lengths from 1 to 3 ft, few lengths outside that range
Moderately Fractured	Lengths mostly in range of 4 in. to 1 ft, with most lengths about 8 in.
Intensely Fractured	Lengths average from 1 in. to 4 in. with scattered fragmented intervals with lengths less than 4 in.
Very Intensely Fractured	Mostly chips and fragments with few scattered short core lengths

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LOGGED BY **MWM**	REPORT TITLE **BORING RECORD**				HOLE ID **B-1**
BEGIN DATE **4-13-20**	DIST. **10**	COUNTY **SJ**	ROUTE **CR**	POSTMILE	PROJECT ID **627**
COMPLETION DATE **4-13-20**	PROJECT OR BRIDGE NAME **Kennefick Road Culvert Repair**				
	BRIDGE NUMBER	PREPARED BY **MWM**		DATE **4-21-20**	SHEET **3 of 3**

PROJECT OR BRIDGE NAME **Kennefick Road Culvert Repair**	BOREHOLE LOCATION (Lat/Long or North/East and Datum) (Offset, Station, Line) **38° 14' 3.8" / -121° 14' 42.6" NAD83 6' Lt Sta ~11+86**	HOLE ID **B-1**
DRILL CONTRACTOR: **Geo-Ex** DRILLER: **D. Alatorre** DRILL RIG: **CME 75**	DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: --- ; BEARING:	SURFACE ELEVATION **~62 ft NAVD88**
DRILLING METHOD **Solid-Stem Auger**	THICKNESS OF OVERBURDEN; DEPTH DRILLED INTO ROCK **0.0**	BOREHOLE DIAMETER **4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID) **Bulk, Std Cal (2.5"), SPT (1.4")**	SPT HAMMER TYPE AND EFFICIENCY, ERI **Automatic / ERi = 88%**	TOTAL SAMPLES Disturbed **4** Undisturbed **0**
BOREHOLE BACKFILL AND COMPLETION **Grout backfill, witnessed by D. Afonskaia.**	GROUNDWATER READINGS: DURING DRILLING; AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING **21.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	N60 per foot	Recovery (%)	RQD (%)	Laboratory: Gravel	Sand	Fines	LL	PI	MC	DD	ASTM Class	Drilling Method / Casing Depth	Remarks
	0		SANDY lean CLAY (CL); (2-inches of Asphalt); very stiff; reddish brown; moist; mostly medium plasticity fines; little fine SAND; (in-part fill); PP 3.5 - 4.5.																	
	1				Bag A															CR
59.5	2																			
	3																			
57.5	4																			
	5				S-1	8 13 20	**33**	36	100				62	22	9	13	124	CL		PA, PI
55.5	6																			PP 3.5 to 4.5 TSF
	7																			
53.5	8																			easy drilling
	9																			
51.5	10				S-2	5 8 12	**20**	22	100											
	11																			PP 2.5 TO 3.5 TSF
49.5	12																			
	13																			
47.5	14		CLAYEY SAND (SC); medium dense; brown; moist to wet; mostly fine to coarse SAND; few fines; weak cementation; PP 2.5 - 4.5+.																	
	15				S-3	7 8 10	**18**	26	100							11				
45.5	16																			PP 2.5 TO 3.5 TSF
	17																			easy drilling
43.5	18																			
	19																			
41.5	20				S-4	10 12 11	**23**	34	83											
	21																			PP 4.5+ TSF
39.5	22		Bottom of borehole at 21.5 ft bgs No groundwater encountered This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.																	
	23																			
37.5	24																			
	25																			

DRAFT

MGE ENGINEERING, INC.
7415 Greenhaven Drive, Suite 100
Sacramento, California 95831
(916) 421-1000

LOGGED BY: **MWM**	REPORT TITLE: **BORING RECORD**				HOLE ID: **B-1**
BEGIN DATE: **4-13-20**	DIST.: **10**	COUNTY: **SJ**	ROUTE: **CR**	POSTMILE:	PROJECT ID: **627**
COMPLETION DATE: **4-13-20**	PROJECT OR BRIDGE NAME: **Kennefick Road Culvert Repair**				
	BRIDGE NUMBER:	PREPARED BY: **MWM**		DATE: **4-21-20**	SHEET: **1 of 1**

5 BR - STANDARD 11-99_KENNEFICKROAD.GPJ LIBRARY.GLB 4/30/20

PROJECT OR BRIDGE NAME **Kennefick Road Culvert Repair**	BOREHOLE LOCATION (Lat/Long or North/East and Datum) (Offset, Station, Line) **38° 14' 3.2" / -121° 14' 42.6" NAD83 6' Lt Sta ~11+26**	HOLE ID **B-2**
DRILL CONTRACTOR: **Geo-Ex** DRILLER: **D. Alatorre** DRILL RIG: **CME 75**	DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED; DEG FROM VERTICAL: --- ; BEARING:	SURFACE ELEVATION **~62 ft NAVD88**
DRILLING METHOD **Solid-Stem Auger**	THICKNESS OF OVERBURDEN; DEPTH DRILLED INTO ROCK **0.0**	BOREHOLE DIAMETER **4 in**
SAMPLER TYPE(S) AND SIZE(S) (ID) **Std Cal (2.5"), SPT (1.4")**	SPT HAMMER TYPE AND EFFICIENCY, ERI **Automatic / ERi = 88%**	TOTAL SAMPLES Disturbed **4** Undisturbed **0**
BOREHOLE BACKFILL AND COMPLETION **Grout backfill, witnessed by D. Afonskaia.**	GROUNDWATER READINGS: DURING DRILLING; AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING **21.5 ft**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per foot	N60 per foot	Recovery (%)	RQD (%)	Laboratory: Gravel	Sand	Fines	LL	PI	MC	DD	ASTM Class	Drilling Method / Casing Depth	Remarks
	0		Lean CLAY (CL); (8-inches of Asphalt); moderate brown; moist; mostly medium plasticity fines; trace fine SAND; (in-part fill).																	
59.5	2																			
	3																			
57.5	4																			
	5				S-1	7 15 24	**39**	42	100											
55.5	6		SANDY lean CLAY (CL); very stiff; moderate brown; moist; mostly medium plasticity fines; few fine SAND; weak cementation; PP 3.25 - 4.25.																	PP 3.25 TO 4.25 TSF
	7																			
53.5	8																			
	9																			
51.5	10				S-2	6 11 13	**24**	26	100							15	111			Sample 2A lab tests indicated below soil contact line. PP 4.5+ TSF
	11		Poorly graded SAND with SILTY CLAY (SP-SC); medium dense; medium brown; moist; mostly fine to coarse SAND; few low plasticity fines; trace fine, subrounded GRAVEL; weak cementation; interbedded 1/4 to 1/2" thick SILT and CLAY lenses. SILT lenses moderately cemented.; PP 2.5 - 4.5+.																	
49.5	12																			
	13																			
47.5	14																			
	15				S-3	3 5 11	**16**	23	100											
45.5	16																			PP 4 TO 4.5+ TSF
	17																			
43.5	18																			
	19																			
41.5	20				S-4	6 9 11	**20**	29	83							17				
	21																			PP 2.5 TO 2.75 TSF
39.5	22		Bottom of borehole at 21.5 ft bgs No groundwater encountered. This Boring Record was developed in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (2010) except as noted on the Soil or Rock Legend or below.																	
	23																			
37.5	24																			
	25																			

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7415 Greenhaven Drive, Suite 100
Sacramento, California 95831
(916) 421-1000

LOGGED BY **MWM**	REPORT TITLE **BORING RECORD**				HOLE ID **B-2**
BEGIN DATE **4-13-20**	DIST. **10**	COUNTY **SJ**	ROUTE **CR**	POSTMILE	PROJECT ID **627**
COMPLETION DATE **4-13-20**	PROJECT OR BRIDGE NAME **Kennefick Road Culvert Repair**				
	BRIDGE NUMBER	PREPARED BY **MWM**		DATE **4-21-20**	SHEET **1 of 1**

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Gulf Shore Construction Services, Inc.
P.O. Box 1501 Shingle Springs, CA 95682
SBA Hubzone Contractor

Invoice

Date	Invoice #
4/28/2020	4713

Bill To:

MGE Engineering, Inc.
7415 Greenhaven Drive, Suite 100
Sacramento, CA 95831

Project Information

Kennefick Road Culvert Replacement
Project No. 627
PM: Martin McIlroy

GS Project No. 20-147

Sample ID	Item Code	Description	Quantity	Price	Amount
B-1, B-2		Samples received on 4/13/20			
	ASTM D 2216	Moisture Content	2	22.00	44.00
	ASTM D 2937	Moisture Content & Density	2	40.00	80.00
	ASTM D 4318	Atterberg Limits	1	198.00	198.00
	ASTM D 1140	#200 Wash	1	94.00	94.00
	Testing	Corrosivity Testing	1	176.00	176.00

Terms: Net - 30 Days

Total $592.00

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GS GULF SHORE
EXPLORATION AND TESTING

April 28, 2020

Attn: Martin McIlroy
MGE Engineering, Inc.
7415 Greenhaven Drive, Suite 100
Sacramento, CA 95831

Project Name: Kennefick Road Culvert Replacement
Project No. 627
GS Project No. 20-147

RE: Invoice #4713

Dear Mr. McIlroy:

As requested, Gulf Shore Construction Services, Inc performed testing on the following sample set(s) of material from the subject site. The following sample(s) were received on 4/13/20 and identified as:

B-1 (3 samples)
B-2 (2 samples)

The following test(s) were performed:

Moisture Content (ASTM D2216)
Moisture Content & Density (ASTM D2937)
#200 Wash (ASTM D1140)
Atterberg Limits (ASTM D4318)
Corrosivity Testing

The results of the referenced testing are presented within the attached reports.

We appreciate the opportunity to be of service to you on this project and look forward to providing additional service, as needed, in the future. Should you have any questions or require additional information, please contact our office at your convenience.

Respectfully submitted,

4/28/20

Joe Marie Llamas
Project Manager

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MOISTURE CONTENT & UNIT WEIGHT TEST RESULTS

Sample Identification	Depth, ft.	Wet Unit Weight, lb/ft.^{3}	Dry Unit Weight, lb/ft.^{3}	Moisture Content, %
B-1: S-1	5'-6..5'	140.1	123.7	13.2
B-1: S-3	15'-16.5'			10.9
B-2: S-2A	10.5'-11.5'	127.2	110.9	14.7
B-2: S-4	20'-21.5'			16.8

Test Method: ASTM D2216, ASTM D2937

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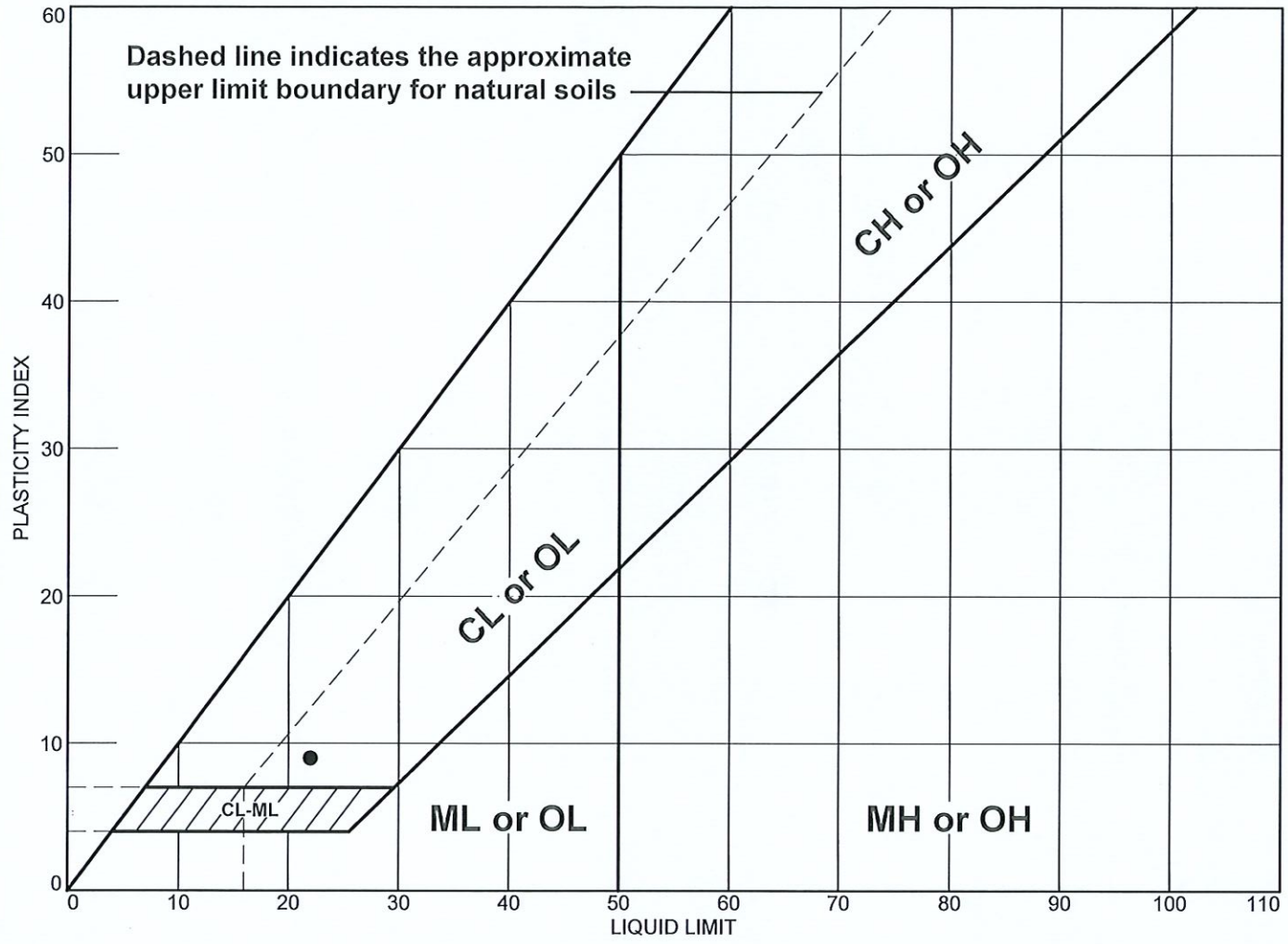
PROJECT NUMBER:	20-147	April 15, 2020	Kennefick Road Culvert Replacement	

GULF SHORE EXPLORATION AND TESTING
3362 Fitzgerald Road
Rancho Cordova, CA 95742
Phone: (916) 939-4117
FAX: (916) 635-4315

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		22	13	9		62	

Project No. 20-147 **Client:** MGE Engineering

Project: Kennefick Road Culvert Replacement

● **Location:** B-1: S-1 **Depth:** 5'-6.5' **Sample Number:** 50803

Remarks:

GULF SHORE EXPLORATION AND TESTING

Figure

Tested By: MM **Checked By:** JML

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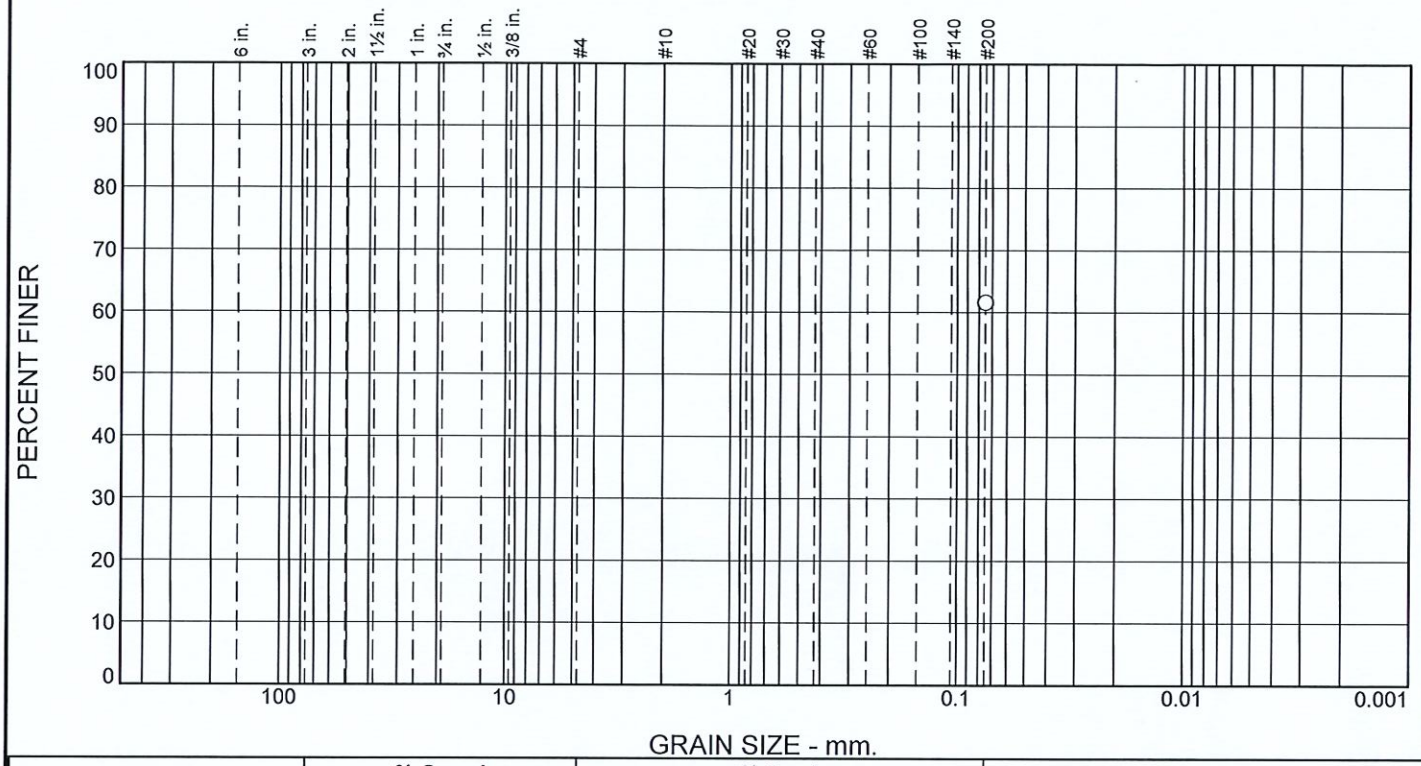
Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
						62

Test Results (ASTM D6913 & ASTM D1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#200	62		

* (no specification provided)

Material Description

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 22 PI= 9

Classification

USCS (D 2487)= AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 4/13/20 **Date Tested:** 4/16/20

Tested By: JB

Checked By: JML

Title: PM

Location: B-1: S-1 **Date Sampled:** -

Sample Number: 50803 **Depth:** 5'-6.5'

GULF SHORE EXPLORATION AND TESTING

Client: MGE Engineering

Project: Kennefick Road Culvert Replacement

Project No: 20-147 **Figure**

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Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 04/22/2020
Date Submitted 04/15/2020

To: Joe Llamas
Gulf Shore Construction Services
3362 Fitzgerald Rd
Rancho Cordova, CA 95742

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : B-1 BAG A @ 1-6FT Site ID : 20-147 .
Thank you for your business.

* For future reference to this analysis please use SUN # 81909-171141.

EVALUATION FOR SOIL CORROSION

Soil pH	6.01		
Minimum Resistivity	2.68 ohm-cm (x1000)		
Chloride	6.9 ppm	00.00069	%
Sulfate	31.4 ppm	00.00314	%

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422m

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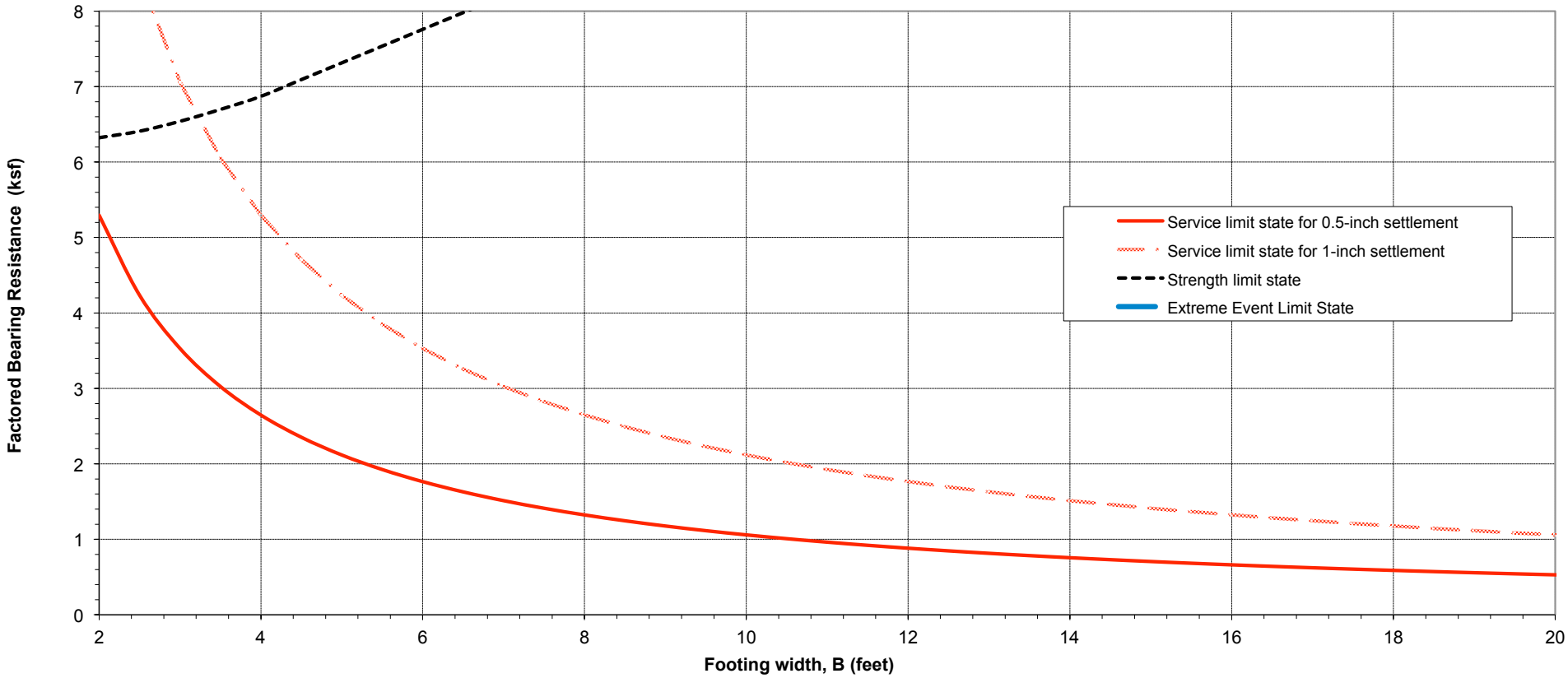

NOTES

1. We recommend using the following resistance factors for footing LRFD design; the plotted bearing capacities use the bearing capacity resistance factors.

Limit State	Sliding Shear	Passive Press.	Bearing Capacity
Service	N/A	N/A	1.0
Strength	0.8	0.5	0.45
Extreme Event	1.0	1.0	1

2. The factored bearing capacities are based on a soil friction angle of 34 degrees, a soil cohesion of 0 psf, a total unit weight of 120 pcf, a Poisson's ratio of 0.3, and a soil elastic modulus of 300 ksf. We assumed that the bottom of the footing was 4 feet below the ground surface, elevation 53 feet.

3. **psf** - pounds per square foot; **pcf** - pounds per cubic foot; **ksf** - kips per square foot (1 kip = 1000 pounds)

FIG. 7

Kennefick Road Culvert Repair
San Joaquin County, California

FACTORED BEARING RESISTANCE VERSUS FOOTING WIDTH RECTANGULAR FOOTING, L/B = 2

April 2020 MGE Project No. 627

MGE Engineering
Civil, Structural and Geotechnical Engineers

FIG. 7

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL/ENVIRONMENTAL REPORT

CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals and projects. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant who prepared the report. The client should not apply this report for any other purpose other than the project for which is intended without conferring with the consultant and gaining the consultant's permission.

THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these project-specific factors may include: the general nature of the structure and property involved; the size and configuration of the proposed improvements; historical site or structure uses; historical practice; the location of proposed site improvements and their orientation; building codes or regulations, other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by client imposed scope-of-service limitations. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations.

Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site, the project changes from commercial to residential development); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when structure loads change (4) when the location or orientation of the proposed project is modified; (5) when there is a change of ownership; or (6) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity over time. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by natural processes or human activity over time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as drought, floods, earthquakes, wildfires, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. Your consultant extrapolated the data and then applied their professional judgment to render an opinion about the overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

A REPORT'S CONCLUSIONS ARE PRELIMINARY.

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which the report and logs were prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

COMMUNICATION

A common theme in each section above is communication. It is important that information is provided to and from the client and consultant. Check with your consultant to determine if proposed project changes, construction methods, or other factors will impact your project. Early communication in a project will help identify potential project impacts and allow time to address them.

The preceding paragraphs are based on information provided by the
Geoprofessional Business Association), Silver Spring, Maryland
(formerly ASFE/Association of Engineering Firms Practicing in the Geosciences)

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