PROJECT REPORT

TO: ENVIRONMENTAL EVALUATION COMMITTEE **AGENDA DATE: March 26, 2026**

FROM: PLANNING & DEVELOPMENT SERVICES **AGENDA TIME 1:30 PM / No.3**

PROJECT TYPE: Brandt Road Bridge Replacement IS#25-0037 SUPERVISOR DIST #4

LOCATION: Brandt Road Bridge APN: 020-160-030-000

Calipatria, CA 92233 PARCEL SIZE: N/A

GENERAL PLAN (existing) Agriculture GENERAL PLAN (proposed) N/A

ZONE (existing) N/A ZONE (proposed) N/A

GENERAL PLAN FINDINGS ☒ CONSISTENT ☐ INCONSISTENT ☐ MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

PLANNING DIRECTORS DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 03/26/2026

INITIAL STUDY: #25-0037

☐ NEGATIVE DECLARATION ☐ MITIGATED NEG. DECLARATION ☐ EIR

DEPARTMENTAL REPORTS / APPROVALS:

PUBLIC WORKS	☒ NONE	☐ ATTACHED
AG	☐ NONE	☒ ATTACHED
APCD	☐ NONE	☒ ATTACHED
E.H.S.	☒ NONE	☐ ATTACHED
FIRE / OES	☐ NONE	☒ ATTACHED
SHERIFF	☒ NONE	☐ ATTACHED
OTHER	Imperial Irrigation District (IID), Quechan Indian Tribe, Agua Caliente Indian Tribe	

REQUESTED ACTION:

(See Attached)

RECON

Draft
Initial Study/Mitigated Negative Declaration
Brandt Road Bridge Replacement Project
Imperial County, California

Prepared for
Imperial County
Department of Public Works
155 South 11th Street
El Centro, CA 92243

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108
P 619.308.9333

March 9, 2026

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APPENDICES (Under Separate Cover)

A: Air Quality Analysis for the Brandt Road Bridge Replacement Project, RECON Environmental, Inc.
B: Natural Environment Study (Minimal Impacts), Brandt Road Bridge Replacement Project, RECON Environmental, Inc.
C: Archaeological Survey Report, Kleinfelder (confidential; not for public review)
D: Preliminary Foundation Report, Kleinfelder
E: Initial Site Assessment, Kleinfelder
F: Hydrology Study, Kleinfelder
G: Noise Modeling Output, RECON Environmental, Inc.

Acronyms and Abbreviations

APE	area of potential effect
AQMD	Air Quality Management District
BMP	best management practice
BSA	Biological Study Area
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNEL	community noise equivalent level
CO	carbon monoxide
County	County of Imperial
CRHR	California Register of Historic Resources
CWA	Clean Water Act
dB	decibel
dB(A)	A-weighted decibel
DOC	California Department of Conservation
DPM	diesel particulate matter
EIR	Environmental Impact Report
EO	Executive Order
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
ICAPCD	Imperial County Air Pollution Control District
in/sec	inch per second
IS/MND	Initial Study/Mitigated Negative Declaration
L_{eq}	one-hour equivalent noise level
L_{max}	maximum equivalent noise level
MND	Mitigated Negative Declaration
MT CO_2E	metric tons carbon dioxide equivalent
NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
NO_2	nitrogen dioxide
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
PIA	project impact area
PM_{10}	10-micron particulate matter
$PM_{2.5}$	2.5-micron particulate matter
PPV	peak particle velocity
project	Brandt Road Bridge Replacement Project

RECON	RECON Environmental, Inc.
ROG	reactive organic gases
RWQCB	Regional Water Quality Control Broad
SCAG	Southern California Association of Governments
SIP	State Implementation Plan
SO_2	sulfur dioxide
SSAB	Salton Sea Air Basin
SWPPP	Stormwater Pollution Prevention Plan
TAC	toxic air contaminants
USACE	U.S. Army Corps of Engineers
WOTS	waters of the State
WOTUS	waters of the U.S.

1.0 Introduction

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared in accordance with relevant provisions of the California Environmental Quality Act (CEQA) of 1970, as amended, and the CEQA Guidelines, as revised. This IS/MND evaluates the environmental effects of the Brandt Road Bridge Replacement Project (project).

The IS/MND includes the following components:

- A Draft IS/MND and the formal findings made by the Imperial County (County) that the project would not result in any significant effects on the environment, as identified in the CEQA IS Checklist.
- A detailed project description.
- The CEQA IS Checklist, which provides standards to evaluate the potential for significant environmental impacts from the project and is adapted from Appendix G of the CEQA Guidelines. The project is evaluated in 21 environmental issue categories to determine whether the project's environmental impacts may be significant in any category. Brief discussions are provided that further substantiate the project's anticipated environmental impacts in each category.

Because the project fits into the definition of a "project" under Public Resources Code Section 21065 requiring discretionary approvals by the County, and because it could result in a significant effect on the environment, the project is subject to CEQA review. The IS Checklist was prepared to determine the appropriate environmental document to satisfy CEQA requirements: an Environmental Impact Report (EIR), a Mitigated Negative Declaration (MND), or a Negative Declaration (ND). The analysis in this IS Checklist supports the conclusion that the project may result in significant environmental impacts, but (1) revisions in the project plans or proposals made by or agreed to by the applicant before a proposed MND and IS are released for public review would avoid the effects or mitigate the effects to appoint where clearly no significant effects would occur, and (2) there is no substantial evidence, in light of the whole record before the County, that the project as revised may have a significant effect on the environment; therefore, an MND has been prepared.

This IS/MND will be circulated for 30 days for public and agency review, during which time individuals and agencies may submit comments on the adequacy of the environmental review. Following the public review period, the County's Board of Supervisors will consider any comments received on the IS/MND when deciding whether to adopt the MND.

2.0 Project Description

1. Project Name:

Brandt Road Bridge Replacement Project (project)

2. Lead Agency:

Imperial County
Planning and Development Services
801 Main Street
El Centro, CA 92243

3. Contact Person and Phone Number:

Luis Bejarano
Imperial County
Planning and Development Services
801 Main Street
El Centro, CA 92243
(442) 265-1736

4. Project Location:

The project is located approximately 2.5 miles southwest of the city of Calipatria and east of the Salton Sea, in Imperial County, California (Figure 1). The project site is located within the U.S. Geological Survey 7.5-minute Westmorland East quadrangle, Township 12 South, Ranges 13 East and 14 East (U.S. Geological Survey 1992; see Figure 2). The project site encompasses the existing right-of-way and approaches of Brandt Road Bridge that spans the Alamo River (Figure 3). Brandt Road is a paved two-lane road that extends north and south of the existing bridge. The southern terminus of the existing bridge is located immediately north of an east/west dirt road that intersects with the paved Brandt Road. The segment extending in a westerly direction is named West Bowles Road, and the segment extending in an easterly direction is also named Brandt Road.

5. Project Applicant/Sponsor:

Imperial County
Department of Public Works
155 South 11th Street
El Centro, CA 92243

6. General Plan Designation:

The project site is located within the existing right-of-way and approaches of Brandt Road Bridge that spans the Alamo River and does not have a General Plan designation.

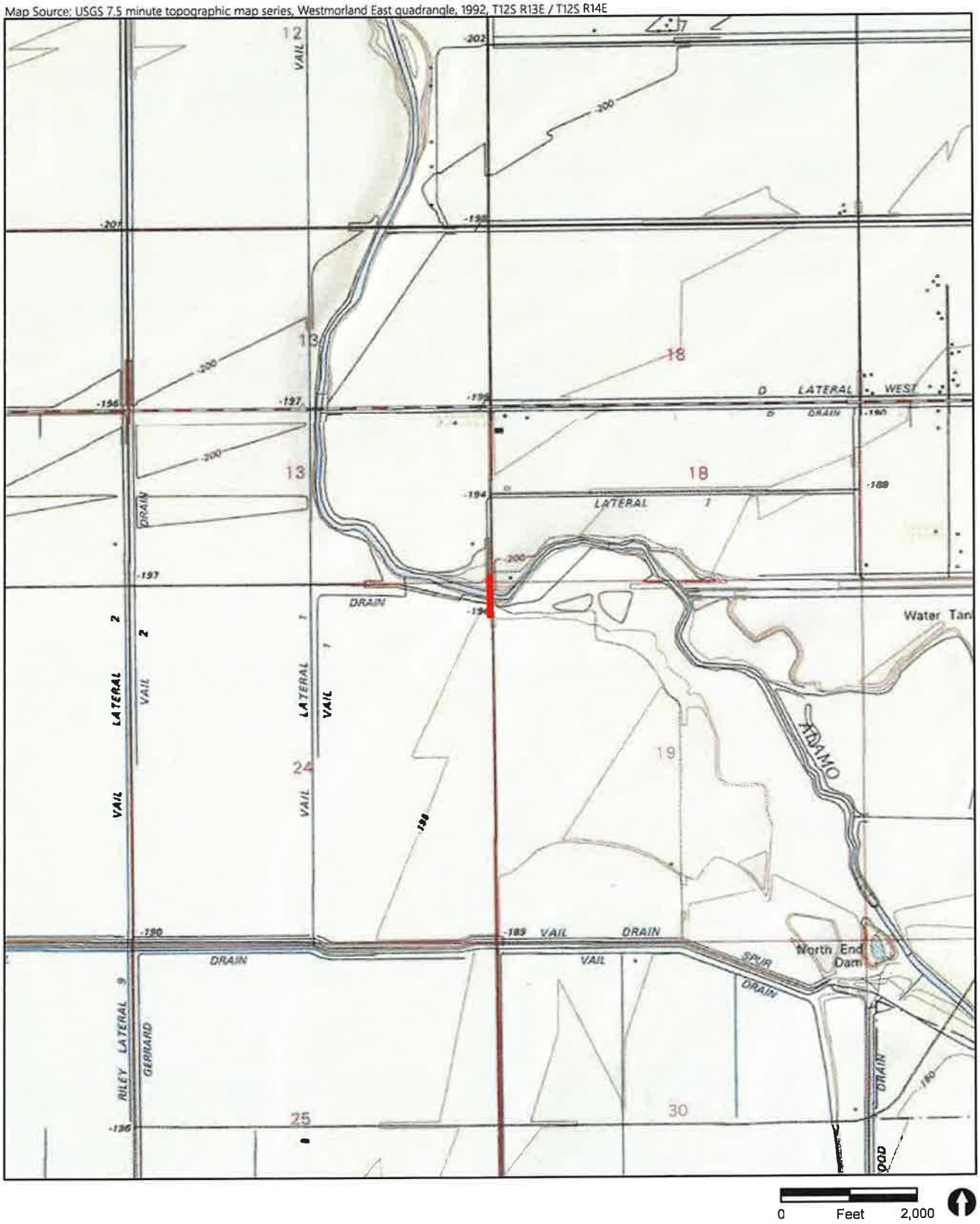


FIGURE 1
Regional Location

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Map Source: USGS 7.5 minute topographic map series, Westmorland East quadrangle, 1992, T12S R13E / T12S R14E

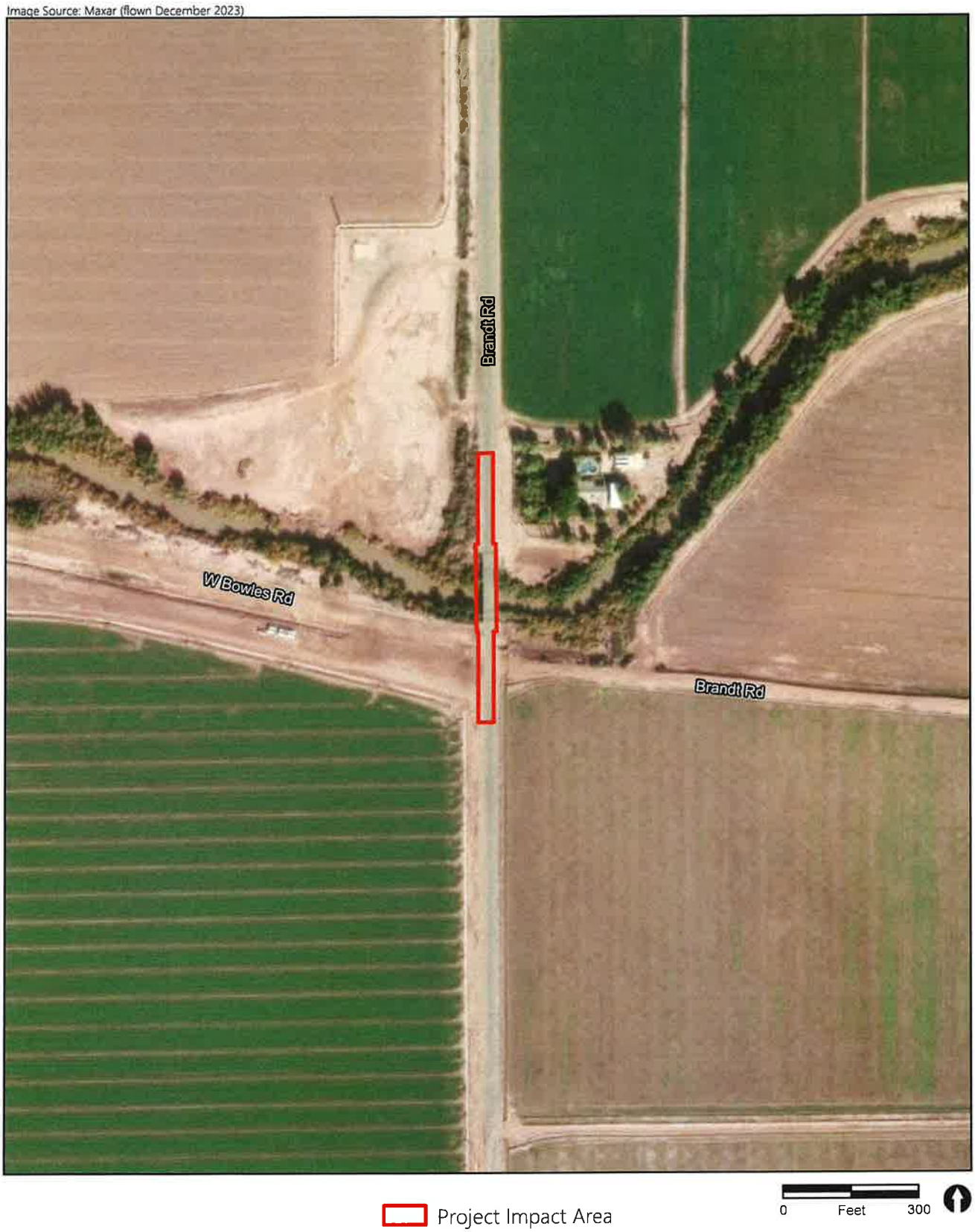


Project Impact Area

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FIGURE 2
Project Location on USGS Map



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FIGURE 3
Project Location on Aerial Photograph

7. Zoning:

The project site is located within the existing right-of-way and approaches of Brandt Road Bridge that spans the Alamo River and does not have a zoning designation.

8. Project Purpose:

Brandt Road predominantly carries traffic generated by the agricultural and nearby geothermal industries. Additionally, its location is critical to the future development within Lithium Valley, an unincorporated area of Imperial County located at the southeast side of the Salton Sea that possesses large lithium deposits. The state recently created the Lithium Valley Commission, directed to review, investigate, and analyze opportunities and benefits for lithium recovery and use in the state, as this and other minerals are being developed from geothermal brine in the Salton Sea Geothermal Resource Area.

As geothermal, mineral and lithium extraction, and related heavy industries are exploring and proposing large projects in the area, transportation infrastructure in Lithium Valley is either lacking, or at risk of inability to serve, this increased development. These areas have been and still are also a significant part of the existing agricultural economy of the region and already at risk of transportation disruption due to an aging transportation infrastructure network.

Brandt Road conveys north-south traffic along a 12-mile route, starting at the south at State Route 78/86, between the cities of Westmorland and Brawley, and finishing north at Sinclair Road where many heavy geothermal industries currently operate and where the future of Lithium Valley is expected to develop.

The purpose of the project is to replace the existing wood bridge with a new crossing that would satisfy current design and seismic standards. Project objectives include providing a safe and reliable crossing for the public that meets all current design standards, supports agricultural and local vehicle traffic, and accommodates heavy vehicle traffic associated with geothermal, lithium, and other metal extraction industries in the surrounding area.

9. Surrounding Land Use(s) and Project Setting:

Brandt Road is a paved two-lane road that extends north and south of the existing bridge. The southern terminus of the existing bridge is located immediately north of an east/west dirt road that intersects with the paved Brandt Road. The segment extending in a westerly direction is named West Bowles Road, and the segment extending in an easterly direction is also named Brandt Road. Agricultural lands are located further to the south. An existing residential use is located immediately northeast of the northern terminus of the bridge, followed by agricultural lands further to the north. Access to the project is provided by the north/south paved Brandt Road from the north or south.

10. Project Description:

The project would replace an existing wood bridge constructed in 1950 that spans the Alamo River. Brandt Road is a two-lane, paved road that extends north and south of the existing bridge. The existing wooden structure consists of an approximately 150-foot-long, ten-span bridge, with pile

bents located within the Alamo River. The project would demolish and dispose of the existing bridge and supporting features, followed by the construction of a new single-span bridge within the same alignment. The proposed single-span bridge would not impede the flow of the Alamo River. Figure 4 presents the proposed bridge plan and section.

Bridge and Approach Road

The proposed two-lane bridge would be located within the same alignment as the existing two-lane bridge. The proposed approaches would consist of two 12-foot-wide lanes and two 8-foot-wide unpaved shoulders with a design speed of 55 miles per hour (mph). The approaches would be tapered to provide a transition between the existing segments of Brandt Road north and south of the project site that have unpaved shoulders and the replacement bridge that would include paved shoulders.

Staging Area Preparation

Staging areas would be used to store project materials and equipment throughout construction. Staging areas would include existing segments of Brandt Road north and south of the project site, as well as segments of the banks of the Alamo River that front the project site. The affected portion of Brandt Road would be closed during the entire duration of construction. Traffic control, barricades, and construction and detour sign plans would be prepared to ensure no public traffic enters this area.

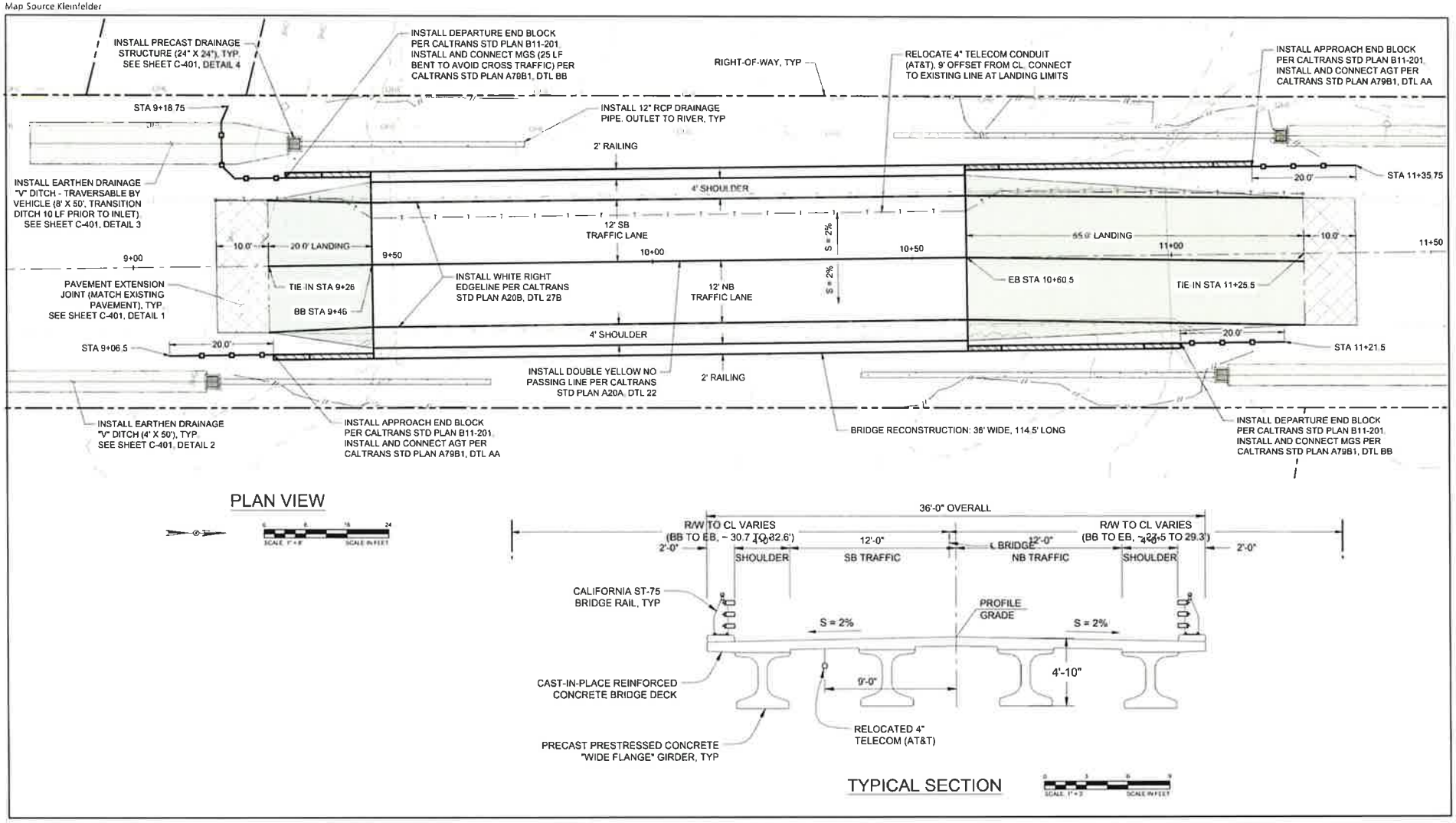
Bridge Demolition/Removal

The existing bridge abutments and associated piles would be demolished and removed prior to vegetation removal and the construction of the new bridge. Demolition activities would be designed to minimize impacts to the Alamo River. Removal of the existing wooden bridge pile supports would consist of breaking them off at, or just under, the channel bottom surface level. The lateral load imposed by a large excavator would fracture the piles near or below the drain bottom. Once the piles are broken off, they would be lifted out of the drain by an excavator with a chain and transported to an appropriate disposal facility. The use of a temporary sheet pile containment system and removal of the temporary sheet piles would result in a larger amount of "dirty water" than breaking them off without containment. The abutment piles, most of which are exposed due to drain bank erosion, would be removed in a similar manner. All work would need to occur while the river is flowing, with no proposed bypass or containment. All equipment required for removal of the existing bridge abutments and piles would be staged and operated from the banks of the river and/or Brandt Road.

Site Preparation

Vegetation would be removed during site preparation to clear the channel for the placement of any slope protection at the proposed bridge abutments. This may be performed after bridge demolition and removal, including the removal of existing wood piles from the Alamo River channel.

Map Source Kleinfelder



RECON

FIGURE 4
Bridge Plan and Section

Road Replacement

After bridge construction is complete, the Brandt Road approaches, extending approximately 200 feet in each direction, would be placed. The structural section of the roadway would consist of aggregate base and asphalt concrete with striping and any signage needed to match existing roadway on each side of the bridge. The approaches would also include drainage features that would prevent erosion of the riverbanks.

Water Consumption

Project construction would use water for dust control during ground-disturbing and earth-compaction activities. Water would likely be obtained from a nearby Imperial Irrigation District canal, through the Imperial Irrigation District encroachment permit process.

Traffic Control and Detour

The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate.

Right-of-Way

The project would not require acquisition of any new right-of-way, as the replacement bridge would be constructed entirely within the existing right-of-way of Brandt Road. Similarly, all construction staging areas would also be located entirely within the right-of-way of existing County roads. The proposed approaches to the replacement bridge would consist of two 12-foot-wide lanes and two 8-foot-wide unpaved shoulders. The approaches would be tapered to provide a transition between the existing segments of Brandt Road north and south of the project site that have unpaved shoulders and the replacement bridge that would include paved shoulders.

11. Have California Native American tribes traditionally 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.?

Per Assembly Bill 52, the County initiated consultation with Native American tribes that are traditionally and culturally affiliated with the geographic area of the project to identify resources of cultural or spiritual value to the tribe. On November 15, 2025, the County sent notification letters to the Agua Caliente Band of Cahuilla Indians, Campo Band of Diegueno Mission Indians, and Quechan Tribe of the Fort Yuma Reservation. The County received a response to the notification letter from the Agua Caliente Band of Cahuilla Indians requesting consultation, which occurred between December 8, 2025, and January 14, 2026. On January 14, 2026, the Agua Caliente Band of Cahuilla Indians submitted a letter to the County requesting that specific protocols be followed in the event that human remains are discovered during construction.

12. Summary of Environmental Factors Potentially Affected:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

3.0 Draft Mitigated Negative Declaration

ENVIRONMENTAL EVALUATION COMMITTEE (EEC) 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 shall be prepared.

☐ I find that, although the proposed project might have a significant effect on the environment, there would not be a significant effect in this case because revisions in the project have been made, or agreed to, by the project proponent. A MITIGATED NEGATIVE DECLARATION shall be prepared.

☐ I find that the proposed project might have a significant effect on the environment and/or deficiencies exist relative to the City's General Plan Quality of Life Standards, and the extent of the deficiency exceeds the levels identified in the City's Environmental Quality Regulations pursuant to Zoning Code Article 47, Section 33-924 (b), and an ENVIRONMENTAL IMPACT REPORT shall be required.

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

☐ I find that, although the proposed project might have a significant effect on the environment, no further documentation is necessary 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.

EEC Votes	YES	NO	ABSENT
PUBLIC WORKS	☐	☐	☐
ENVIRONMENTAL HEALTH SVCS	☐	☐	☐
OFFICE EMERGENCY SERVICES	☐	☐	☐
APCD	☐	☐	☐
AG	☐	☐	☐
SHERRIF DEPARTMENT	☐	☐	☐
ICPDS	☐	☐	☐

Signature

Date

Jim Minnick
Printed Name

Director of Planning/EEC Chairman
Title

4.0 Initial Study Checklist

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved. A "No Impact answer should be explained where it is based on project specific factors as well as general standards.
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or (mitigated) negative declaration. Section 15063(c)(3)(D).
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and
    b. The mitigation measure identified, if any, to reduce the impact to less than significant.

4.1 Aesthetics

Would the project:

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

EXPLANATIONS:

a. Less Than Significant Impact

The project site consists of an existing bridge spanning the Alamo River. The project site is flat and is surrounded by a mixture of active agricultural fields, a single-family home, and the Alamo River. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and the same elevation. Once constructed, the replacement bridge would not alter views across the bridge alignment from any vantage point surrounding the project. Therefore, the project would not have a substantial adverse effect on a scenic vista, and impacts would be less than significant.

b. No Impact

State scenic highways refer to those highways that are officially designated by the California Department of Transportation (Caltrans) as scenic (Caltrans - California Scenic Highway Program). Generally, the area defined within a state scenic highway is the land adjacent to and visible from the vehicular right-of-way. The dimension of a scenic highway is usually identified using a motorist's

line of vision, but a reasonable boundary is selected when the view extends to the distant horizon. The scenic highway corridor extends to the visual limits of the landscape abutting the scenic highway.

The project site is not located within an area visible from a state-designated scenic highway. The closest officially designated scenic highway is a segment of State Route 78 approximately 34 miles west of the project site, which is not visible from the project site (Caltrans 2025). As described in greater detail in Section 4.5a below, the existing bridge does not qualify as a historic resource, and no other historic resources were identified in the surrounding area. The project site does not possess rock outcroppings or mature trees. Therefore, the project would not substantially damage any scenic resources within a state scenic highway. No impact would occur.

c. Less Than Significant Impact

The project site consists of an existing bridge spanning the Alamo River. Project construction (e.g., presence of construction vehicles, excavated materials, laydown areas) would create short-term visual effects for the surrounding residential areas. However, impacts associated with construction would be temporary and confined to the existing roadway alignment. Once constructed, the replacement bridge would not alter the existing visual character as it would be located within the same alignment and elevation as the existing bridge. Therefore, the project would not adversely affect the quality of public views of the project site and its surroundings, and impacts would be less than significant.

d. Less Than Significant Impact

Construction of the replacement bridge would be limited to daytime hours, Monday through Friday between 7:00 a.m. and 7:00 p.m., and 9:00 a.m. to 5:00 p.m. on Saturday. No night construction or lighting would occur. Once constructed, the replacement bridge would not introduce any new source of lighting. Therefore, the project would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area, and impacts would be less than significant.

4.2 Agriculture and Forestry Resources

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act Contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 1220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

EXPLANATIONS:

a. No Impact

The project site consists of the existing right-of-way and approaches of Brandt Road Bridge that spans the Alamo River. The California Department of Conservation (DOC) "California Important Farmland Finder" classifies the project site as Other Land (DOC 2025). Staging areas would include existing segments of Brandt Road north and south of the project site, as well as segments of the banks of the Alamo River that front the project site, which would avoid impacts to land designated as Farmland of Statewide Importance surrounding the project site. Therefore, the project would not

convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses. No impact would occur.

b. No Impact

The project site consists of the existing right-of-way and approaches of Brandt Road Bridge that spans the Alamo River and does not have a General Plan or zoning designation. Staging areas would include existing segments of Brandt Road north and south of the project site, as well as segments of the banks of the Alamo River that front the project site, which would avoid impacts to land zoned for agricultural uses surrounding the project site. Therefore, the project would not conflict with existing zoning for agricultural use or a Williamson Act Contract. No impact would occur.

c. No Impact

The project site does not contain any forest or timberland as defined by Public Resources Code Section 12220[g], Public Resources Code Section 4526, or Government Code Section 51104(g) and is not zoned as forest or timberland. No impact would occur.

d. No Impact

The project site does not contain any forest or timberland as defined by Public Resources Code Section 12220[g], Public Resources Code Section 4526, or Government Code Section 51104(g). No impact would occur.

e. No Impact

There are no forestlands on-site or in the vicinity of the project site. Staging areas would include existing segments of Brandt Road north and south of the project site, as well as segments of the banks of the Alamo River that front the project site, which would avoid impacts to agricultural uses surrounding the project site. Therefore, the project would not result in conversion of farmland or forest land. No impact would occur.

4.3 Air Quality

Would the project:

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

EXPLANATIONS:

The following section is based on the Air Quality Analysis prepared by RECON Environmental, Inc. (RECON) on March 5, 2026 (Appendix A).

a. Less Than Significant Impact

The project is located within the Salton Sea Air Basin (SSAB) under the jurisdiction of the Imperial County Air Pollution Control District (ICAPCD). Air districts are tasked with regulating emissions to ensure that air quality in the SSAB does not exceed National or California Ambient Air Quality Standards (NAAQS and CAAQS). NAAQS and CAAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. NAAQS and CAAQS have been established for six common pollutants of concern known as criteria pollutants, which include ozone, carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead, and respirable particulate matter (PM_{10} and $PM_{2.5}$).

The County is classified as a federal moderate non-attainment area for the 2008 8-hour ozone standards, marginal non-attainment area for the 2015 8-hour ozone standards, and a partial moderate non-attainment area for the $PM_{2.5}$ standards. The County is a non-attainment area for the state ozone standards and the state PM_{10} standard.

The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the NAAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as air quality management plans, monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. The California Air Resources Board (CARB) is the lead agency for preparation of the SIP, which outlines the state measures to achieve NAAQS. CARB delegates responsibility for preparation of SIP elements to local air districts and requires local air districts to prepare Air Quality Attainment Plans outlining measures required to achieve CAAQS.

The ICAPCD is the air district responsible for the project area. Applicable ICAPCD air quality plans include the following:

- Imperial County 2009 State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter;
- Imperial County 2013 State Implementation Plan for the 2006 24-Hour $PM_{2.5}$ Moderate Non-attainment Area;
- Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard;
- Imperial County 2018 State Implementation Plan for the 2012 Annual Standard for Particulate Matter Less Than 2.5 Microns in Diameter; and
- Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter Less Than 10 Microns in Diameter.

The primary concern for assessing consistency with air quality plans is whether the project would induce growth that would result in a net increase in criteria pollutant emissions that exceed the assumptions used to develop the plan. The criteria pollutant emission projections for the ICAPCD air quality plans are based on Southern California Association of Governments' (SCAG) population growth and regional vehicle miles traveled projections, which are based in part on the land uses established by local general plans. As such, projects that propose development that is consistent with the local land use plans would be consistent with growth projections and air quality plans criteria pollutant emissions estimates. In the event that a project would result in development that is less dense than anticipated by the growth projections, the project would be considered consistent with the air quality plans. In the event a project would result in development that results in greater than anticipated growth projections, the project would result in air pollutant emissions that may not have been accounted for in the air quality plans and thus may obstruct or conflict with the air quality plans.

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. Furthermore, the project would not construct housing or any other uses that would result in regional population growth. Therefore, the project would not result in new growth beyond what was originally anticipated in SCAG's growth projections for the County, nor generate criteria pollutants emissions beyond what was projected in the ICAPCD's air quality plans. Additionally, as described in greater detail in Section 4.3b below, project construction would not exceed any of the applicable significance thresholds for criteria pollutants. The project would not be a source of

operational emissions. Therefore, the project would not conflict with or obstruct implementation of any of ICAPCD's air quality plans, and impacts would be less than significant.

b. Less Than Significant Impact

NAAQS and CAAQS have been established for six criteria pollutants (ozone, CO, SO_2, NO_2, lead, and PM). The ICAPCD is the air district responsible for the SSAB, which is in non-attainment areas for NAAQS and CAAQS for ozone and particulate matter. The majority of regional PM_{10} and $PM_{2.5}$ emissions originate from dust stirred up by wind or by vehicle traffic on unpaved roads (ICAPCD 2009). Other PM_{10} and $PM_{2.5}$ emissions originate from grinding operations, combustion sources such as motor vehicles, power plants, wood burning, forest fires, agricultural burning, and industrial processes. Ozone is not emitted directly, but is a result of atmospheric activity on precursors. Oxides of nitrogen (NO_X) and reactive organic gases (ROG) are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone. Approximately 88 percent of NO_X and 40 percent of ROG regional emissions originate from on- and off-road vehicles (ICAPCD 2010). Other major sources include solvent evaporation and miscellaneous processes such as pesticide application.

The ICAPCD has established thresholds of significance for project construction. Table 1 provides general guidelines for determining the significance of impacts based on the total emissions that are expected from project construction.

Table 1
Significance Thresholds for Construction

Pollutant	Thresholds (pounds/day)
PM_{10}	150
ROG	75
NO_X	100
CO	550

SOURCE: ICAPCD 2017.
ROG = reactive organic gas; NO_X = oxides of nitrogen; CO = carbon monoxide; PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less.

Regardless of project size, all feasible standard measures specified by the ICAPCD for construction equipment and fugitive PM_{10} control for construction activities should be implemented at construction sites. Control measures for fugitive PM_{10} construction emissions in Imperial County are found in ICAPCD Regulation VIII and in the ICAPCD CEQA Air Quality Handbook (ICAPCD 2017) and are discussed below.

Project emissions were calculated using California Emissions Estimator Model (CalEEMod) Version 2022.1.1.29 (California Air Pollution Control Officers Association 2022). The CalEEMod program is a tool used to estimate emissions resulting from land development projects in the state of California. CalEEMod was developed with the participation of several state air districts. More details regarding emissions calculations and CalEEMod output files are provided in Appendix A.

Table 2 provides a summary of the daily criteria pollutant emissions that would be generated during project construction. As shown in Table 2, project construction would not exceed the applicable

ICAPCD significance thresholds. These significance thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. The project would implement all standard measures for fugitive PM_{10} control and standard measures for construction combustion equipment. Furthermore, the project would adhere to Regulation VIII, which includes the following specific rules:

- Rule 800–Fugitive Dust Requirements for Control of PM 2.5
- Rule 801–Construction and Earthmoving Activities
- Rule 802–Bulk Materials
- Rule 803–Carry Out and Track Out
- Rule 804–Open Areas
- Rule 805–Paved and Unpaved Roads
- Rule 806–Conservation Management Practices

Additionally, the project would submit a Construction Notification form to the ICAPCD no less than 10 days prior to the start of construction. Therefore, project construction would not result in a cumulatively considerable net increase in emissions of ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

Table 2
Maximum Daily Construction Air Pollutant Emissions

Year	Maximum Daily Emissions (pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2026	2	16	18	<1	96	10
2027	2	16	18	<1	96	10
Max Daily Emissions	**2**	**16**	**18**	**<1**	**96**	**10**
Significance Threshold	*75*	*100*	*550*	-	*150*	-
Exceeds Threshold?	***No***	***No***	***No***	-	***No***	-

SOURCE: Attachment 1.
ROG = reactive organic gas; NOX = oxides of nitrogen; CO = carbon monoxide; PM10 = particulate matter with an aerodynamic diameter 10 microns or less;
PM2.5 = particulate matter with an aerodynamic diameter 2.5 microns or less.

Long-term emissions of regional air pollutants occur from operational sources. The project would not be a source of operational emissions. Therefore, project operation would not result in a cumulatively considerable net increase in emissions of ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

c. Less Than Significant Impact

Sensitive land uses include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities. The nearest sensitive receptor is the residential property located approximately 70 feet northeast of the project footprint.

Diesel Particulate Matter – Construction

Construction of the project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Construction of the project would result in the generation of diesel-exhaust diesel

particulate matter (DPM) emissions from the use of off-road diesel equipment, and on-road diesel equipment used to bring materials to and from the project site.

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction is anticipated to last for approximately 16 months. The dose of DPM to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Office of Environmental Health Hazard Assessment 2015). Thus, if the duration of proposed construction activities near any specific sensitive receptor were five months, the exposure would be four percent (16 months divided by 30 years) of the total exposure period used for health risk calculation. Further, the project would implement the standard measures for construction combustion equipment (see Appendix A, Section 4.1.2). Additionally, with ongoing implementation of U.S. Environmental Protection Agency and CARB requirements for cleaner fuels; off-road diesel engine retrofits; and new, low-emission diesel engine types, the DPM emissions of individual equipment would be reduced over time. All construction equipment would be subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which limits unnecessary idling to five minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment and phases out Tier 1 and Tier 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements. Therefore, due to the limited duration of construction activities, implementation of standard measures for construction combustion equipment, and implementation of the In-Use Off-Road Diesel-Fueled Fleets Regulation, DPM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic toxic air contaminants (TAC) that exceed a Hazard Index greater than 1 for the Maximally Exposed Individual. Therefore, project construction would not expose sensitive receptors to substantial pollutant concentration, and impacts would be less than significant.

Carbon Monoxide Hot Spots

A CO hot spot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near signalized intersections. CO hot spots have the potential to violate state and federal CO standards at intersections, even if the broader basin is in attainment for federal and state levels. Due to increased requirements for cleaner vehicles, equipment, and fuels, CO levels in the state have dropped substantially. All air basins are attainment or maintenance areas for CO. Therefore, recent screening procedures based on more current methodologies have been developed. The Sacramento Metropolitan Air Quality Management District (AQMD) developed a screening threshold in 2011, which states that any project involving an intersection experiencing 31,600 vehicles per hour or more will require detailed analysis. No intersections in the vicinity of the project carry this substantial amount of traffic. Additionally, there are no signalized intersections in

the vicinity of the project site. Traffic generated during construction would not result in any heavily congested intersections. The project would not generate any increase in operational trips. Therefore, project construction and operation would not result in a CO hot spot, and impacts would be less than significant.

d. Less Than Significant Impact

The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between the receptor and odor source, and local meteorological conditions. Project construction would result in the emission of diesel fumes and other odors typically associated with construction activities. Sensitive receptors near the project site include residential uses; however, exposure to odors associated with project construction would be short term (16 months) and temporary in nature. Further, per CARB's Airborne Toxic Control Measures 13 (California Code of Regulations Chapter 10 Section 2485), the applicant shall not allow idling time to exceed five minutes unless more time is required per engine manufacturers' specifications or for safety reasons. Therefore, project construction would not generate odors adversely affecting a substantial number of people, and impacts would be less than significant.

The ICAPCD CEQA Air Quality Handbook provides screening level distances for potential odor sources. If a project is proposed within one mile of a wastewater treatment plant, sanitary landfill, composting station, feedlot, asphalt plant, painting and coating operation, or rendering plant, a potential odor problem may result (ICAPCD 2017). The project does not include the construction of any of these uses. The project would not be a source of operational odors. Therefore, project operation would not generate odors adversely affecting a substantial number of people, and impacts would be less than significant.

4.4 Biological Resources

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have substantial adverse effects, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the CDFW or USFWS?	☐	☒	☐	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?	☐	☒	☐	☐

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No 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?	☐	☐	☐	☒

EXPLANATIONS:

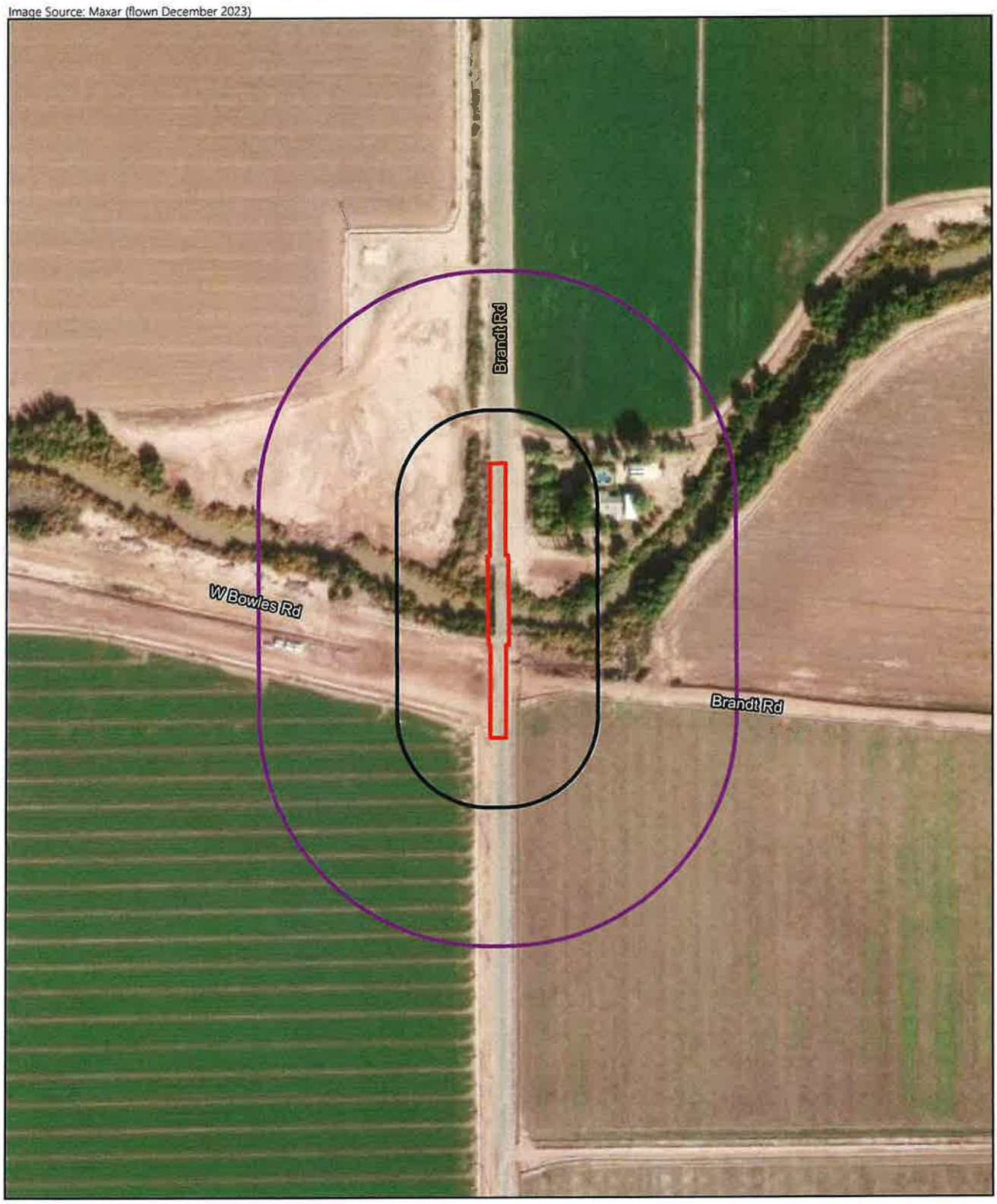
The following section is based on the Natural Environment Study – Minimal Impacts prepared by RECON Environmental, Inc. (RECON) on September 4, 2025 (Appendix B), the Habitat Assessment and Burrowing Owl Focused Survey Results prepared by RECON on August 28, 2025 (see Appendix G of Appendix B), and the Aquatic Resources Delineation Report prepared by RECON on February 4, 2025 (see Appendix F of Appendix B).

a. Less Than Significant With Mitigation Incorporated

RECON performed a general biological survey and focused species surveys of the project site. The Biological Study Area (BSA) consists of the project impact area (PIA) and an approximate 150-foot buffer. The burrowing owl survey area consists of the PIA and a 500-foot buffer per the requirements of the California Department of Fish and Wildlife (CDFW) Staff Report on Burrowing Owl Mitigation (CDFW 2012). Figure 5 presents the BSA and burrowing owl survey area.

Vegetation Communities/Land Cover Types

The following six vegetation communities/land cover types are present within the BSA: tamarisk thickets (*Tamarix* spp. shrubland semi-natural alliance), arrow weed thickets (*Pluchea sericea* shrubland alliance), agriculture, non-vegetated channel, disturbed habitat, and urban/developed Figure 6 presents the locations of each vegetation community/land cover type within the BSA and Table 3 presents the acreages of each vegetation community/land cover type within the BSA. Descriptions of each vegetation community/land cover type are provided below.



RECON

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FIGURE 5
Project Biological Study Area

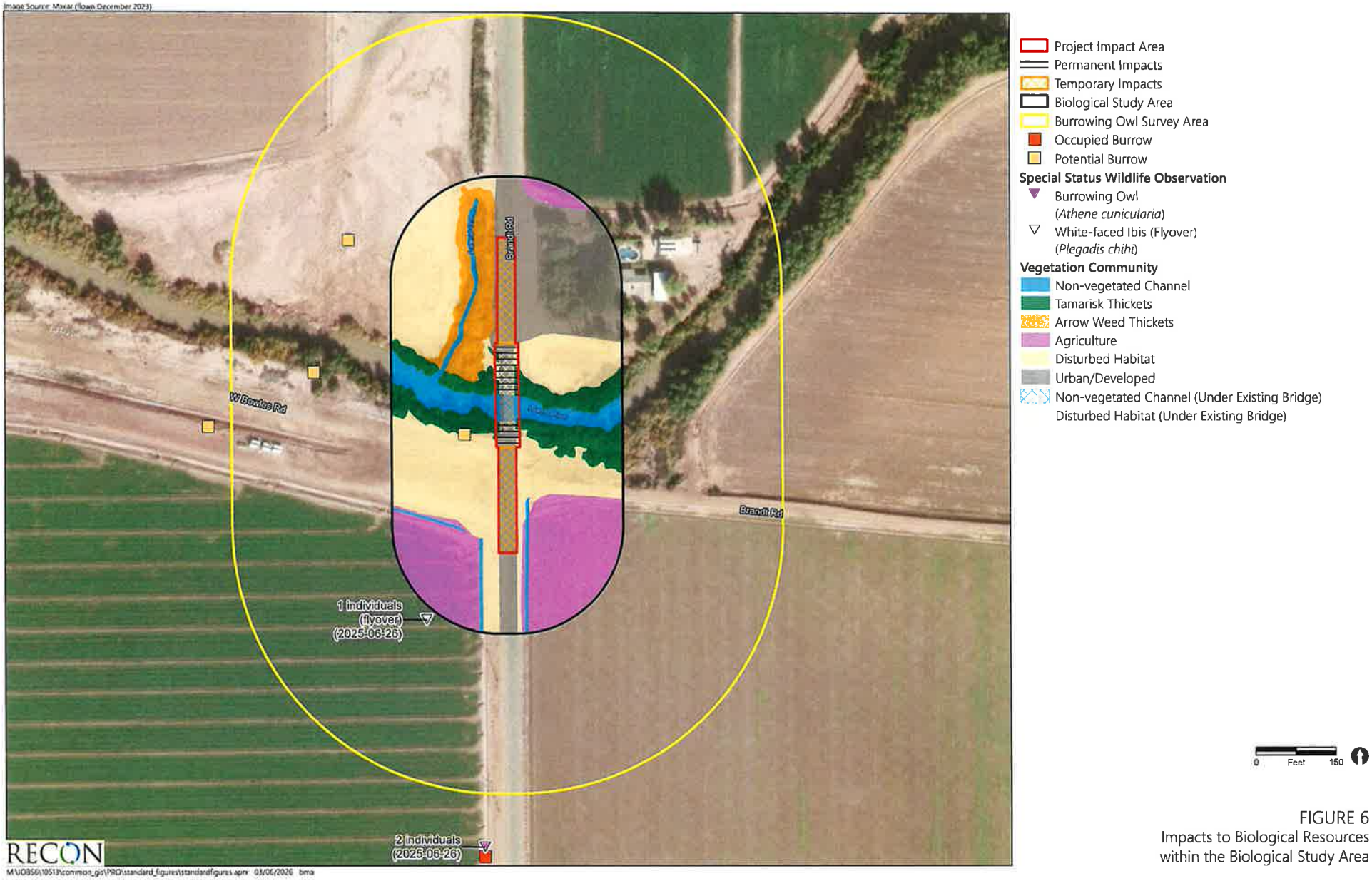


FIGURE 6
Impacts to Biological Resources
within the Biological Study Area

Table 3 Vegetation Communities/Land Cover Types within the BSA		
Vegetation Community/Land Cover Type[1]	PIA (acres)	BSA (PIA plus 150-foot buffer; acres)
Above/Adjacent to Existing Bridge		
Tamarisk Thickets	0.03	0.78
Arrow Weed Thickets	--	0.51
Agriculture	--	1.58
Non-vegetated Channel	0.02	0.52
Disturbed Habitat	0.02	2.58
Urban/Developed	0.35	1.70
Under Existing Bridge		
Non-vegetated Channel	--	0.03
Disturbed Habitat	0.06	0.06
TOTAL	**0.48**	**7.76**

PIA = project impact area; BSA = biological study area
[1]Vegetation community classifications follow Sawyer et al. (2009), with cross reference to Holland (1986) as modified by Oberbauer et al. (2008).

The project would remove all existing pile bents from the Alamo River, and the replacement bridge would not require installation of any new piles or piers within the channel. The remainder of the PIA is included in temporary impact calculations to account for use of construction staging areas, which will occur within Brandt Road within 200 feet of the bridge. Permanent impacts to 0.06 acres of tamarisk thickets would be considered significant. Implementation of mitigation measure BIO-1 would reduce this impact to a level less than significant. Furthermore, the project would implement mitigation measures BIO-2 through BIO-4 to further prevent impacts to tamarisk thickets and other sensitive biological resources to a level less than significant.

Plant Species

Three special status plant species, ribbed cryptantha (*Johnstonella costata*), gravel milk-vetch (*Astragalus sabulonum*), and mud nama (*Nama stenocarpa*), have potential to occur based on the California Native Plant Society database. However, the BSA does not support suitable habitat for ribbed cryptantha or gravel milk-vetch and mud nama has a low potential to occur (Table 4). No additional special status plant species are expected to occur within the BSA due to high levels of disturbance from surrounding agricultural activities, including elevated salinity, altered hydrology, soil compaction and erosion, reduced native vegetation, proliferation of non-native and invasive species, and associated habitat degradation Therefore, the project would not adversely affect any candidate, sensitive, or special status plant species.

Table 4
Vegetation Communities/Land Cover Types, Impacts, and Mitigation

Vegetation Community/ Land Cover Type[1]	Permanent Impacts (acres)	Temporary Impacts (acres)	Mitigation Ratio (Permanent/ Temporary)	Mitigation Requirements (Permanent/ Temporary; acres)
Tamarisk Thickets[2]	0.03	--	2:1 / 1:1	0.06 / --
Arrow Weed Thickets[2]	--	--	2:1 / 1:1	-- / --
Agriculture	--	--	N/A	N/A
Non-vegetated Channel[2]	0.02	--	-- / --	-- / --
Disturbed Habitat	0.08	--	N/A	N/A
Urban/Developed	0.04	0.31	N/A	N/A
TOTAL[3]	**0.17**	**0.31**		**0.06 / --**

[1]Vegetation community classifications follow Sawyer et al. (2009), with cross reference to Holland (1986) as modified by Oberbauer et al. (2008).
[2]Vegetation community/land cover type subject to jurisdiction by U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA), CDFW under Sections 1600-1616 of the State Fish and Game Code, and Regional Water Quality Control Broad (RWQCB) under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. Impacts are addressed further in Appendix B, Section 4.1.5.
[3]Areas are presented in acres rounded to the nearest 0.01. Any discrepancies in the total are due to rounding.

Wildlife

Burrowing Owl

One burrowing owl pair and occupied burrow was observed outside of but adjacent to the burrowing owl survey area during the habitat assessment and breeding surveys (see Figure 6). Detailed results from the habitat assessment and breeding season surveys are presented in the post-survey report (see Appendix B, Appendix G). The owl pair and occupied burrow were observed to the south of the Burrowing Owl Survey Area, along a berm situated between Brandt Road and an active agricultural field. An additional five potential burrows consisting of rodent burrows and man-made structures with cavities of suitable size were observed within the BSA, burrowing owl survey area, and adjacent to the burrowing owl survey area during the habitat assessment and breeding season surveys (see Figure 6).

The project has the potential to result in direct and indirect impacts to burrowing owl. Approximately 0.08 acres of suitable habitat within the PIA would be subject to direct and indirect impacts from vegetation clearing, grubbing, grading, or other construction activities. If occupied burrows are present, owls could be directly impacted through removal of burrows or indirectly impacted through noise and disturbance associated with heavy equipment operation. These impacts would be particularly significant if construction occurs during the nesting season of February 1 through August 31 (CDFW 2012), when disturbance may affect nesting success, or at any time of year if active burrows are present. Impacts to burrowing owl and their habitat would be considered potentially significant. Implementation of mitigation measures BIO-2 through BIO-6 would reduce these impacts to a level less than significant.

Mountain Plover

Mountain plover was not observed and is not expected to occur within the PIA due to lack of suitable habitat. However, this species has a moderate potential to occur within the BSA due to the presence of agricultural fields, including an active agricultural field used for row crops consisting of alfalfa, containing suitable nesting and foraging habitat in the northwestern and southwestern corners of the BSA. No direct impacts are anticipated to occur to mountain plover as a result of the project due to lack of suitable habitat within the PIA. However, indirect impacts could result from project construction noise if this species nests within suitable habitat adjacent to the PIA, which would be considered a significant impact. Implementation of mitigation measures BIO-2 through BIO-4 would reduce this impact to a level less than significant.

Bats

The bat reconnaissance survey conducted within the BSA identified habitat features that may provide suitable roosting and foraging opportunities for special-status bat species. Bat sign (guano) was observed beneath and adjacent to the Brandt Road bridge, suggesting potential use of the structure by bats. Crevices located on the underside of the bridge may provide roosting habitat for crevice-roosting species, including pallid bat and pocketed free-tailed bat. Additionally, riparian trees along the Alamo River corridor may provide suitable roosting habitat for tree-roosting species, including western red bat and western yellow bat. No special-status bat species were observed during the survey. However, due to the availability of suitable roosting and foraging habitat and evidence of bat use within the BSA, pallid bat, western red bat, western yellow bat, and pocketed free-tailed bat all have a moderate potential to occur.

If present, crevice-roosting species including pallid bat and pocketed free-tailed bat could be directly affected during removal of the existing Brandt Road bridge, which contains crevices on the underside that may provide suitable roosting habitat. Similarly, tree-roosting species including western red bat and western yellow bat could be directly impacted if individuals are roosting in riparian trees that may be removed as part of project activities. Indirect impacts could also occur from construction-related noise, lighting, vibrations, and general disturbance within the riparian corridor. Impacts to these bat species would be considered potentially significant. Implementation of mitigation measures BIO-2 through BIO-4 and mitigation measure BIO-7 would reduce these impacts to a level less than significant.

Migratory Birds and Raptors

The Migratory Bird Treaty Act, which is enforced by the United States Fish and Wildlife Service, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The take, possession, import, export, transport, sale, purchase, barter, or offering of these activities is prohibited, except under a valid permit or as permitted in the implementing regulations (50 Code of Federal Regulations [CFR] 21.11).

Nesting birds and raptors (birds of prey) and active raptor nests are also protected by the California Fish and Game Code 3503 and 3503.5, which states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation

made pursuant thereto" and "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird", respectively, unless authorized by CDFW.

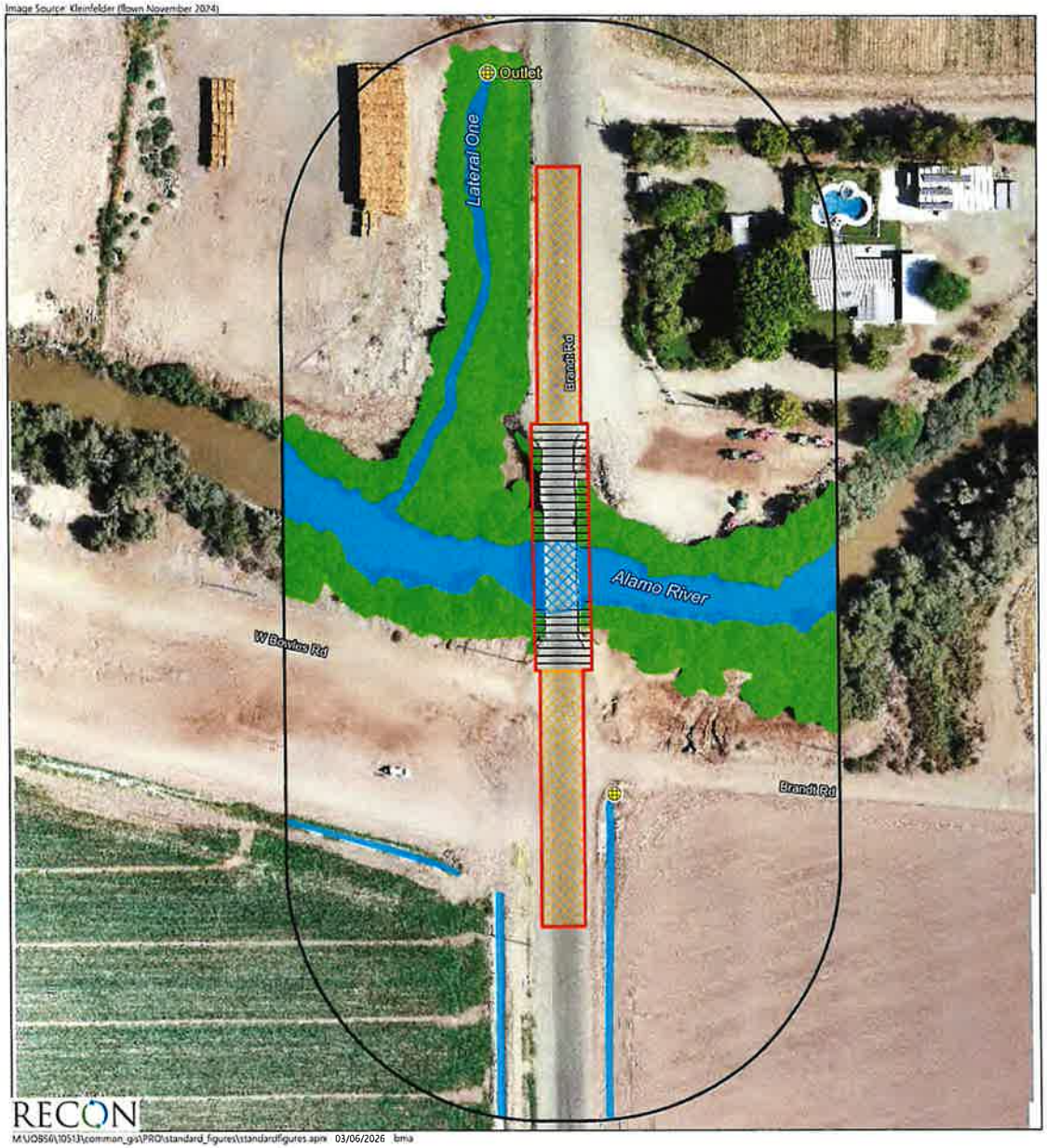
A variety of common and special status resident and migratory bird species were observed and have potential to nest within the BSA. Common bird species observed during biological surveys include red-winged blackbird (*Agelaius phoeniceus*), black phoebe (*Sayornis nigricans semiatra*), killdeer (*Charadrius vociferus vociferous*), and Eurasian collared-dove (*Streptopelia decaocto*). No nests were observed within the BSA during surveys. Direct impacts may occur to nesting and migratory birds if vegetation removal takes place during the combined avian and raptor nesting season (January 15 through September 15), which would be considered a significant impact. Implementation of mitigation measures BIO-2 through BIO-4 and mitigation measure BIO-8 would reduce these impacts to a level less than significant.

b. Less Than Significant With Mitigation Incorporated

Dense tamarisk thickets providing moderate ecological value occur along the banks of the Alamo River within the BSA. Although tamarisk is a non-native invasive species, tamarisk thickets provide riparian function and have connectivity to larger stands of native and non-native riparian vegetation that extend up- and downstream along the Alamo River outside of the BSA, thus contributing localized habitat functions, including foraging and nesting opportunities for wildlife in an otherwise highly modified landscape. Tamarisk thickets may also provide suitable roosting habitat for special status mammals, including state species of special concern western red bat and state species of special concern western yellow bat. Permanent impacts to 0.06 acres of tamarisk thickets would be considered significant. Implementation of mitigation measure BIO-1 would reduce this impact to a level less than significant. Furthermore, the project would implement mitigation measures BIO-2 through 4 to further prevent impacts to tamarisk thickets and other sensitive biological resources to a level less than significant.

c. Less Than Significant With Mitigation Incorporated

An aquatic resources delineation was conducted to determine the extent of resources within the BSA that have the potential to fall under the jurisdiction of water regulatory agencies. CDFW regulates activities that would divert or obstruct the natural flow or would substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife in accordance with sections 1600–1607 of the California Fish and Game Code. CDFW also has jurisdiction over riparian habitats associated with these watercourses, as delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. RWQCB is the regional agency responsible for protecting water quality in California, with jurisdiction including all waters of the State (WOTS), which include all Waters of the U.S. (WOTUS), as well as isolated and ephemeral waters, pursuant to both the federal CWA and the California Porter-Cologne Water Quality Control Act. Figure 7 presents the locations of potential jurisdictional resources Table 5 presents the Direct permanent and temporary impacts to potentially jurisdictional aquatic resources for each agency.



Project Impact Area
Permanent Impacts
Temporary Impacts
Biological Study Area
Culvert
Potential Jurisdictional Non-wetland Waters
Potential Jurisdictional Riparian
Potential Jurisdictional Non-wetland Waters (Under Existing Bridge)

0 Feet 100

FIGURE 7
Impacts to Potential Jurisdictional Resources
within the Biological Study Area

Table 5 Potential Jurisdictional Resources within BSA			
Potential Jurisdictional Resource	Acreage in BSA (linear feet)	Acreage of Temporary Impacts (linear feet)	Acreage of Permanent Impacts (linear feet)
USACE Waters of the U.S.	**0.59 (1,389)**	--	**0.02 (871)[1]**
Non-wetland Waters of the U.S.	0.59 (1,389)	--	0.02 (871)[1]
RWQCB Waters of the State	**0.59 (1,389)**	--	**0.02 (871)[1]**
Non-wetland Waters of the State	0.59 (1,389)	--	0.02 (871)[1]
CDFW State Waters	**1.88**	--	**0.05**
Streambed	0.59 (1,389)	--	0.02 (871)[1]
Riparian	1.29	--	0.03

[1]Within the potentially jurisdictional Alamo River, only the permanent shading effects associated with the expanded bridge width are considered permanent impacts (see Appendix B, Section 4.1).
NOTE: Any discrepancies in total are due to rounding.

The project would result in direct permanent impacts to 0.02 acres (871 linear feet) of USACE non-wetland WOTUS, 0.02 acres (871 linear feet) of RWQCB non-wetland WOTS, and 0.05 acres of CDFW state waters (streambed and riparian). Impacts to USACE non-wetland WOTUS, RWQCB non-wetland WOTS, and CDFW streambed would coincide with impacts to non-vegetated channel. Impacts to CDFW riparian would coincide with impacts to tamarisk thickets. This would be considered a potentially significant impact. Implementation of mitigation measures BIO-2 through BIO-4 would minimize impacts to jurisdictional resources. Furthermore, implementation of mitigation measure BIO-9 would reduce impacts to a level less than significant.

d. Less Than Significant With Mitigation Incorporated

Within the BSA, the Alamo River serves as a movement corridor for wildlife species. The floodplain supports riparian habitats, including tamarisk thickets and arrow weed thickets, that provide cover and movement opportunities for terrestrial and avian species. The Alamo River provides connectivity from approximately 0.5 mile south of the international border in Mexico to the Salton Sea to the northwest, traveling predominately through active agriculture for approximately 60 miles. As such, the Alamo River provides additional movement opportunities for avian species, particularly those along the Pacific Flyway, and for fish and other aquatic species. Although the Alamo River is highly degraded, some fish species adapted to poor water quality, such as common carp (*Cyprinus carpio*), mosquitofish (*Gambusia affinis*), and tilapia (*Oreochromis* spp.), may utilize the river as a movement corridor.

The remaining portions of the BSA are heavily influenced by human activity and consist of land cover types including agriculture, disturbed habitat, and urban/developed that are further surrounded by active agricultural fields. Though these areas may support urban-adapted species, these land cover types within the BSA do not connect large expanses of natural communities and do not function as a regional wildlife movement corridor.

The project would not result in direct permanent impacts to wildlife movement along the Alamo River. Although the project includes installation of bridge supports in areas consisting primarily of

disturbed habitat and urban/developed land and a slight increase in bridge width that would result in localized permanent shading impacts, these modifications would not obstruct the river channel or otherwise create a barrier to wildlife passage. No piles or piers will be installed within the river; instead, the replacement design would remove existing supports. As such, the project is not anticipated to substantially obstruct movement of terrestrial or aquatic wildlife species and will allow for unobstructed passage.

Indirect temporary impacts to wildlife movement could occur during construction activities associated with the project. Although construction activity would not occur directly within the Alamo River corridor (i.e., work would primarily occur in existing developed/disturbed areas), the presence of equipment, increased human activity, and elevated noise levels may temporarily deter wildlife from utilizing or moving through the area. This would be considered a potentially significant impact. Implementation of BIO-2 through BIO-4 above would minimize impacts to wildlife movement. Furthermore, implementation of mitigation measure BIO-10 would reduce impacts to a level less than significant.

e. Less Than Significant Impact With Mitigation Incorporated

Implementation of the mitigation measures BIO-1 through BIO-10 would ensure consistency with County's General Plan policies regarding the protection of biological resources, which would reduce any conflicts with local policies or ordinances protecting biological resources to a level less than significant.

f. No Impact

The project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved habitat conservation plan. No impact would occur.

Mitigation Measures

BIO-1: Tamarisk Thickets

Mitigation for permanent impacts to tamarisk thickets shall be accomplished in the form of enhancement, restoration, and/or creation of habitat, on- or off-site; deduction of credits from a pre-approved mitigation area; or other off-site preservation of permanent impacts. Mitigation for 0.03 acres of permanent impacts is proposed at a 2:1 ratio, which equates to a mitigation total of 0.06 acres. A Habitat Restoration and Mitigation Plan shall be prepared to detail the proposed mitigation program.

BIO-2: Construction Fencing

Prior to initiation of construction activities, orange construction fencing or equivalent high-visibility construction fencing shall be installed along the limits of disturbance adjacent to sensitive biological resource areas. All construction (including access/staging areas) shall be restricted to developed areas or previously defined and approved work areas. Equipment staging, storage, and maintenance shall be located outside the active river channel and riparian habitats. Temporary fencing shall be removed at the completion of construction.

BIO-3a: Construction Monitoring

A qualified biologist (approved by CDFW and USFWS) shall monitor construction activities as needed to oversee avoidance of sensitive biological resources, with full-time monitoring during initial vegetation removal, grubbing, and grading. Monitoring biologists shall be familiar with the special status species known to be present or with potential to occur on-site that could occur within the sensitive vegetation communities to be removed. Should a special status species be encountered, the biological monitor shall request that the resident engineer (RE) stop work in the area.

The biological monitor shall determine the next steps required, e.g., implement avoidance measures, contact Caltrans, the County or Wildlife Agencies, and shall work with the RE to identify areas where work can proceed while avoidance measures are determined.

BIO-3b: Employee Education Program

An employee education program shall be developed and implemented prior to construction by a qualified biologist. Each construction employee (including temporary, contractors, and subcontractors) shall receive a training/awareness program prior to working on the project. Employees shall be advised of listed species in the project's vicinity and the potential penalties for taking of such species. At a minimum, the program shall include: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of federal and state laws, reporting requirements, and project-specific mitigation and avoidance and minimization measures designed to reduce impacts to these species. The employee education program shall also cover project permit requirements, if applicable, and communication protocol with the public agency constructing the project.

BIO-4: Construction Best Management Practices

The following general construction best management practices (BMPs) shall be employed to minimize and avoid impacts to sensitive biological resources from construction activities:

- Any nighttime construction lighting (e.g., staging areas, equipment storage sites, active work areas) shall be selectively placed and directed toward the construction site. Lighting shall be limited to the lowest illumination necessary to allow for safe completion of work and directed away from, shielded, or pointed downward and away from the river corridor and adjacent habitat.

- Erosion and sediment control measures, e.g., straw wattles, gravel bags, silt fencing, shall be in place and in functional condition throughout all phases of the project where sediment run-on or run-off from exposed slopes threatens to enter the river or aquatic habitats. Jute for straw wattles must be made of natural material, not plastic.

- Monitoring biologist shall check the project site immediately prior to and periodically during construction, to identify presence of invasive weeds and recommend measures to avoid their inadvertent spread resulting from construction activities. Measures may include

inspection and cleaning of construction equipment and use of eradication strategies. Special care shall be taken during transport, use, and disposal of soils containing invasive weed seeds and all weedy vegetation removed during construction shall be properly stored and disposed of to prevent spread into areas outside of the construction area.

- All heavy equipment shall be washed and cleaned of sediment, debris, and foreign matter prior to entering the project area to minimize the spread of invasive weeds.

- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall be restricted to designated areas located outside of marked (e.g., flagged/staked) wetlands or waters. Spill prevention supplies, such as drip pans and spill kits, shall be maintained on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the United States/waters of the State.

- All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them.

- Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access.

- Exposed trenches, holes, and excavations shall be inspected daily (i.e., at the end of the workday, before sealing the exposed area) by the Resident Engineer, construction inspector, superintendent or project foreman to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.

- All waste must be removed from the project area. All food-related trash shall be enclosed in sealed wildlife-proof containers and removed from the site daily. All construction-related debris, excess materials, and building materials shall be removed from the project site for disposal at an authorized landfill or other disposal site in compliance with federal, state, and local laws and regulations.

- Project personnel shall be prohibited from bringing domestic pets to construction sites to ensure pets do not disturb or depredate wildlife in adjacent habitats.

BIO-5: Pre-Construction Survey

Initial grading should take place between September 1 and January 31 to avoid impacts to breeding burrowing owls (CDFW 2012). If construction is to begin during the breeding season, it is recommended that mitigation measure BIO-6 below be implemented prior to February 1 to discourage the nesting of the burrowing owls within the area of impact. As construction continues, any area where owls are sighted shall be subject to frequent surveys for burrows before the breeding season begins, so that owls can be relocated before nesting occurs. Pre-construction surveys shall be conducted for burrowing owls prior to the commencement of construction activities. The surveys shall conform to the survey protocol in the CDFW 2012 Staff Report. No more

than 14 days prior to any ground-disturbing activities, a qualified biologist shall conduct a take avoidance survey for burrowing owls. If no owls are found during this first survey, a final survey shall be conducted 24 hours prior to ground disturbance to confirm that burrowing owls are absent. If burrowing owls are found on-site during the surveys, any potentially impacted burrowing owl individuals must be relocated out of the impact areas using passive or active methodologies approved by the resource agencies. A Burrow Exclusion Plan shall be prepared according to the 2012 CDFW guidelines and approved by CDFW. The Burrow Exclusion Plan may include the use of artificial burrows as a means of replacing burrows lost to impacts.

A biologist familiar with burrowing owl biology would monitor construction activities to make sure that burrowing owls that may move into the area during construction are detected and impacts are avoided.

BIO-6: Conceptual Burrowing Owl Mitigation Plan

As the project construction schedule and details are finalized, a qualified biologist shall prepare a Conceptual Burrowing Owl Mitigation Plan in accordance with the CDFW 2012 Staff Report or the most recent state and/or federal protocols/guidance for approval by the relevant resource agencies. Consultation with CDFW may be necessary during their review of the proposed plan in order to gain their approval. The Conceptual Burrowing Owl Mitigation Plan shall include off-site mitigation for the loss of 0.08 acres of suitable burrowing owl habitat at a ratio of 1:1. The quality of preserved suitable occupied burrowing owl habitat must be comparable to or better than the habitat being impacted. The land to be preserved must be occupied by burrowing owl and support fossorial mammals. A conservation easement for the protection of burrowing owl/habitat shall be placed over the mitigation land.

A Mitigation Land Management Plan for the long-term maintenance and monitoring of the approved mitigation land shall be prepared to identify a long-term funding mechanism (e.g., an endowment) for the maintenance of the mitigation lands for burrowing owl.

BIO-7: Bat Species

Implementation of the mitigation and monitoring measures listed below would reduce impacts to potentially occurring bat species to a level of less than significant:

- A biologist with expertise and experience with bats shall be retained as a qualified bat biologist. The qualified bat biologist shall have at least 3 years of experience in conducting bat habitat assessments, day roosting surveys, and acoustic monitoring, and have adequate experience identifying local bat species (visual and acoustic identification), type of habitat, and differences in roosting behavior and types (i.e., day, night, maternity). The biologist shall conduct pre-construction surveys of the existing Brandt Road bridge and riparian trees within 500 feet of the PIA to identify active bat roosts. Surveys shall occur no more than 14 days prior to the initiation of construction activities.

- If active hibernacula or day roosts are detected within , they shall be avoided to the extent feasible. If active maternity roosts are identified within 500 feet of the PIA, project construction shall be limited to October 1 through February 28, outside of the maternity

roosting season (March 1 through September 30), to avoid direct impacts to flightless young. If avoidance of the maternity roosting season is not feasible, preconstruction surveys shall be conducted immediately prior to project construction to confirm no maternity roosts are present. Maternity roosts shall not be evicted, excluded, removed, or otherwise disturbed.

- During construction, the removal of riparian trees or branches shall be avoided to the maximum extent practicable within or adjacent to occupied bat habitat, if found. If tree removal or trimming is unavoidable and trees are determined to be occupied by roosting bats, additional avoidance or mitigation measures shall be implemented as recommended by the qualified bat biologist.

- To provide compensatory roosting habitat, bat boxes (or other appropriate artificial roosting structures) shall be incorporated into the design of the new Brandt Road bridge or installed on suitable structures and/or trees within the Alamo River corridor under the guidance of a qualified bat biologist. The number, type, and placement of bat boxes shall be determined by the qualified bat biologist in consultation with the appropriate regulatory agencies.

BIO-8: Migratory Birds and Raptors

- All clearing/grubbing of vegetation shall take place between September 16 through January 14, outside the combined avian and raptor nesting season. If vegetation removal needs to occur during the breeding season, pre-construction surveys and monitoring would be required. If vegetation is removed outside of the breeding season, no additional monitoring would be required.

- During the bird breeding season, a qualified biologist shall perform a focused pre-construction survey in and adjacent to suitable habitat to determine the presence of active nests within the PIA. The survey shall be conducted a maximum of 7 days prior to performing construction within 300 feet of suitable habitat during the breeding season. If suitable habitat is not removed during the initial clearing/grading construction effort during the breeding season, additional surveys shall be conducted immediately prior to habitat removal during project construction within 300 feet of suitable habitat. If pre-construction surveys are negative for active nests within the PIA, no additional measures would be required.

BIO-9: Jurisdictional Resources Permits

Impacts to jurisdictional waters may require permit authorizations from the USACE through the Section 404 Permit Program, from the CDFW through a 1602 Streambed Alteration Agreement, and from the RWQCB through a Section 401 Water Quality Certification. Authorized impacts would require in-kind compensatory mitigation, such as creation, enhancement, or preservation of aquatic habitat, designed to achieve no-net-loss of both acreage and ecological function, consistent with Resource Agency mitigation ratios and functional assessment requirements. Mitigation projects would include monitoring and maintenance to ensure the successful establishment of habitat over a multi-year period.

Prior to issuance of a grading permit for any on-or-off-site improvement that would affect the bed or bank of a channel, canal, or drain, the applicant shall provide documentation that the action is covered by existing Resource Agency permits, demonstrate a no substantial effect determination, or obtain appropriate permits (e.g., Section 404 Permit, Section 1602 Streambed Alteration Agreement, Section 401 Water Quality Certification).

BIO-10: Wildlife Movement

Temporary construction fencing shall be configured so that at least one unobstructed land passage remains open on each side of the river to facilitate wildlife movement.

4.5 Cultural Resources

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of an historical resource pursuant to §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

EXPLANATIONS:

The following section is based on the Archaeological Survey Report prepared by Kleinfelder in July 2025 (Appendix C).

a. No Impact

A records search of the project's area of potential effect (APE) with a 0.25-mile buffer was conducted through the South Coastal Information Center of the California Historic Resources Inventory System at San Diego State University. The record search results determined that no previously recorded cultural resources are located within the APE or surrounding 0.25-mile buffer. Similarly, no previous archaeological surveys or studies have occurred within the APE or 0.25-mile buffer. Review of historic maps did not identify any cultural resources.

On April 17, 2025, a Kleinfelder archaeologist conducted a complete, intensive pedestrian survey of the APE using transects spaced 5 to 15 meters apart. The survey focused coverage on all unpaved areas where native soils were present and observable at the surface. As a result of the pedestrian survey, one bridge was recorded, and no other cultural resources were observed within the APE.

Brandt Road Bridge is a wooden stringer bridge that spans the Alamo River in Imperial County, California. It was constructed in 1950. The bridge has 10 spans each supported by 18 Douglas fir stringers. The substructure is composite Douglas fir pile bents with cross bracing. The deck is constructed of laminated timber and paved with asphalt. The wing walls and abutments are pile bents with timber sheathing. The curbs and railing are also timber. The railing consists of posts with a single horizontal rail. The bridge is situated in a highly active agricultural area with a storage yard for agricultural equipment northeast and adjacent to the bridge. The Department of Parks and Recreation 523 forms prepared for the bridge are included in Appendix C.

A Kleinfelder historical architect, who meets the Secretary of the Interior's Professional Qualification Standards in Architectural History, evaluated the Brandt Road Bridge for eligibility for listing in the National Register of Historic Places (NRHP) under the criteria set forth in 36 CFR 60, and for the California Register of Historic Resources (CRHR) under CEQA Guidelines Section 15064.5. While the bridge retains a high degree of integrity, it does not appear to meet NRHP or CRHR eligibility criteria for significance:

- NRHP Criterion A/CRHR Criterion 1 (Event): The Brandt Road Bridge is not associated with events that have made a significant contribution to the broad patterns of local, regional, or national history. Although the bridge is located in the agriculturally significant Imperial Valley, it was constructed several decades after the initial development of the region. The area's transformation from desert to farmland began in the early twentieth century with the construction of the Alamo Canal (1902) and the establishment of irrigation infrastructure. The bridge, which appears on the 1944 USGS Calipatria topographic map, postdates these formative developments and is not directly associated with the early agricultural expansion or major transportation initiatives in the region.

- NRHP Criterion B/CRHR Criterion 2 (Person): The bridge is not associated with the lives of persons important during this period of development. No evidence was found linking the bridge to individuals who played a significant role in local, regional, or national history.

- NRHP Criterion C/CRHR Criterion 3 (Design/Construction): The bridge is not significant as an example of a distinctive type, period, or method of construction. Timber stringer bridges were a common and utilitarian bridge-type used extensively on secondary roads in California from the 1930s through the 1950s. The Brandt Road Bridge does not exhibit unique engineering or architectural features that would distinguish it from other examples of its type. It is representative of standard construction practices of the era, utilizing materials such as Douglas fir and California redwood, and does not embody the work of a master or possess high artistic values.

- NRHP Criterion D/CRHR Criterion 4 (Information Potential): The bridge is not likely to yield information important to the understanding of prehistory or history. As a built environment resource, it does not possess the potential to provide significant data through further study.

Therefore, the project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5. No impact would occur.

b. Less Than Significant With Mitigation Incorporated

As described in Section 4.5a above, the record search results determined that no previously recorded cultural resources are located within the APE or surrounding 0.25-mile buffer. Similarly, no previous archaeological surveys or studies have occurred within the APE or 0.25-mile buffer. Review of historic maps did not identify any cultural resources. Additionally, a letter was sent on February 26, 2025, to the Native American Heritage Commission requesting a search of their Sacred Lands File to determine if there are historically significant or sacred sites within or near the APE. On March 14, 2025, the Native American Heritage Commission responded that the APE was positive for cultural sites and provided a list of indigenous groups and individuals for additional consultation. The pedestrian survey did not identify any archaeological resources within the APE. However, the APE may have unknown buried cultural resources, the discovery of which would be considered a significant impact. Implementation of mitigation measure CUL-1 would reduce this impact to a level less than significant.

c. Less Than Significant With Mitigation Incorporated

There are no formal cemeteries or recorded burials in the vicinity of the project site. However, the APE may have unknown buried human remains, the discovery of which would be considered a significant impact. Implementation of mitigation measure CUL-2 would reduce this impact to a level less than significant.

Mitigation Measures

CUL-1: Cultural Resources

If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist, in coordination with local consulting tribes, can assess the significance of the find.

CUL-2: Human Remains

Should human remains be discovered during construction of the project, the contractor would be subject to either the State law regarding the discovery and disturbance of human remains or the Tribal burial protocol. In either circumstance all destructive activity in the immediate vicinity shall halt and the County Coroner shall be contacted pursuant to California Health and Safety Code Section 7050.5. If the remains are determined to be of Native American origin, the Native American Heritage Commission shall be contacted. The Native American Heritage Commission will make a determination of the Most Likely Descendent. The County and the developed will work with the designated Most Likely Descendent to determine the final disposition on the remains.

4.6 Energy

Would the project:

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

EXPLANATIONS:

a. Less Than Significant Impact

Project construction would consume energy within two general categories: vehicle fuel used by workers commuting to and from the construction site, and fuel use by vehicles and other equipment to haul materials and conduct construction activities. However, consumption of such resources would be temporary and would cease upon the completion of construction. In addition, mobile equipment energy usage during construction would be minimized as the project would comply with CARB's idling regulations, which restrict idling diesel vehicles and equipment to five minutes. Additionally, consistent with state requirements, all construction equipment would meet CARB Tier 3 In-Use Off-Road Diesel Engine Standards. Engines are required to meet certain emission standards, and groups of standards are referred to as Tiers. A Tier 0 engine is unregulated with no emission controls, and each progression of standard level (i.e., Tier 1, Tier 2, Tier 3, etc.) generate lower emissions, use less energy, and are more advanced technologically than the previous tier. CARB's Tier 3 In-Use Off-Road Diesel Engine Standards require that construction equipment fleets become cleaner and use less energy over time. The fuel consumed during construction would also be typical of similar construction projects and would not require the use of new energy resources beyond what are typically consumed in California. Therefore, project construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

Once construction is complete, the project would not be a source of operational energy consumption. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not generate any new vehicle trips nor generate any other sources of energy consumption.

b. Less Than Significant Impact

Equipment required for project construction would be subject to CARB's idling regulations and Tier 3 In-Use Off-Road Diesel Engine Standards. Once construction is complete, the project would not be a source of operational energy consumption. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not generate any new vehicle trips nor generate any other sources of energy consumption. Therefore, the project would not conflict with any state or local plans for renewable energy or energy efficiency, and impacts would be less than significant.

4.7 Geology and Soils

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No 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?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

EXPLANATIONS:

The following section is based on the Preliminary Foundation Report prepared by Kleinfelder on April 2, 2025 (Appendix D).

a. Less Than Significant Impact

The project site is located in the seismically active southern California region. However, the project site is not located within a fault zone. The nearest potentially active fault is the Brawley fault zone located approximately 2.0 miles west of the project site. The Mecca Hills fault zone runs north of the site, along the northern portion of the Salton Sea. Site reconnaissance and review of historical aerial photography completed in support of the Preliminary Foundation Report did not reveal indications of faults crossing the project site. Additionally, the Preliminary Foundation Report identified ground motion parameters such as selection of Cast-In-Drilled-Hole type piles for the support of piers and abutments that would ensure the stability of the replacement bridge during seismic events. Furthermore, the Preliminary Foundation Report includes design recommendations that would address liquefaction and it determined that the proposed abutment piles would serve as restraining force against potential lateral spreading. Therefore, risks associated with seismic activity are considered low, and impacts would be less than significant.

b. Less Than Significant Impact

Project construction would have the potential to generate erosion/sedimentation and pollutants that could impact water quality. However, project construction would be subject to the National Pollutant Discharge Elimination System (NPDES) Construction General Permit requirements, including preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for the prevention of polluted runoff during construction. The project would be required to prepare and implement a SWPPP identifying feasible BMPs prior to the commencement of construction

activities. Therefore, compliance with the requirements of the NPDES Construction General Permit would prevent substantial soil erosion or the loss of topsoil, and impacts would be less than significant.

c. Less Than Significant Impact

As described in the Section 4.7a.iii. above, the Preliminary Foundation Report includes design recommendations that would address liquefaction, which would be finalized during the development of the Final Foundation Report. Adherence to these recommendations would ensure that impacts associated with unstable soils would be less than significant.

d. Less Than Significant Impact

Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures or pavements supported on grade.

The field investigation completed in support of the Preliminary Foundation Report determined that the sandy silt soils near the ground surface generally have a very low to low expansion potential. Isolated zones of more expansive soil may also be encountered near the surface but are not anticipated. Therefore, impacts associated with expansive soils would be less than significant.

e. No Impact

The project does not propose the use of septic tanks or alternative wastewater disposal systems. No impact would occur.

f. Less than Significant Impact

The project site is developed with an existing bridge that has been disturbed previously. Therefore, the possibility of buried paleontological resources being present within the project site is considered low, and impacts would be less than significant.

4.8 Greenhouse Gas Emissions

Would the project:

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

EXPLANATIONS:

a. Less Than Significant Impact

The project site is in the SSAB. The ICAPCD is responsible for regulating air quality within the Imperial County portion of the SSAB. No greenhouse gas (GHG) emission significance threshold has been adopted by the County or the ICAPCD. Thus, in the absence of a threshold of significance for GHG emissions that has been adopted in a public process following environmental review, this analysis considers guidance promulgated by the South Coast AQMD. The South Coast AQMD published its Interim CEQA GHG Significance Thresholds for Stationary Sources, Rules, and Plans in 2008 (South Coast AQMD 2008). The interim thresholds are a tiered approach; projects may be determined to be less than significant under each tier or require further analysis under subsequent tiers. For the project, the most appropriate screening threshold for determining GHG emissions is the South Coast AQMD proposed Tier 3 screening threshold (South Coast AQMD 2010). Therefore, a significant impact would occur if the project would exceed the South Coast AQMD proposed Tier 3 screening threshold of 3,000 metric tons carbon dioxide equivalent (MT CO_2E) per year. Based on guidance from the South Coast AQMD, total construction GHG emissions resulting from a project should be amortized over the lifetime of a project, which is defined as 30 years (South Coast AQMD 2009).

Construction activities would generate short-term emissions. Construction emissions were calculated using CalEEMod as described in Section 4.3b above. Total construction GHG emissions are summarized in Table 6.

Table 6 Summary of Total Construction GHG Emissions	
Year	GHG Emissions (MT CO_2E)
2026	281
2027	836
Total Construction Emissions	**1,117**
Amortized Construction Emissions	*37*
SCAQMD Tier 3 Threshold per year	*3,000*
SOURCE: Appendix A. NOTE: Totals may vary due to rounding	

As shown in Table 6, the project would generate a total of 1,117 MT CO_2E over the entire construction period, which would equal 37 MT CO_2E per year when amortized over the lifetime of the project. Once construction is complete, the project would not be a source of operational emissions. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not generate any new vehicle trips nor generate any other sources of operational emissions. Overall, project GHG emissions would be less than the 3,000 MT CO_2E annual screening threshold. Therefore, the project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, and impacts would be less than significant.

b. Less Than Significant Impact

Executive Order (EO) S-3-05 and EO B-30-15 established GHG emission reduction targets for the state, and Assembly Bill 32 launched the CARB Climate Change Scoping Plan that outlined the reduction measures needed to reach the 2020 target, which the state has achieved. As required by Senate Bill 32, CARB's 2017 Scoping Plan outlines reduction measures needed to achieve the interim 2030 target, and the 2022 Scoping Plan outlines the path towards carbon neutrality by 2045. As described in Section 4.8a above, GHG emissions generated during project construction would not exceed the SCAQMD proposed Tier 3 screening threshold of 3,000 MT CO_2E per year and would not adversely affect statewide attainment of GHG emission reduction goals as described in Assembly Bill 32, EOs S-3-05 and B-30-15, and Senate Bill 32.

Once construction is complete, the project would not be a source of operational emissions. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. Therefore, the project would not generate any new vehicle trips and would not conflict with the transportation-related GHG reduction goals outlined in the Regional Transportation Plan. Replacement of the existing bridge would be consistent with the existing land use designations and would not result in any permanent changes to the existing land use plan. Furthermore, the project would not conflict with energy efficiency standards or conflict with Southern California Edison's Renewables Portfolio Standard renewable energy goals as these are not applicable to project construction. Therefore, the project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions, and impacts would be less than significant.

4.9 Hazards and Hazardous Materials

Would the project:

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

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

EXPLANATIONS:

a. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and would not involve the routine transport, use, or disposal of significant hazardous materials. Project construction may involve the use of small amounts of solvents, cleaners, paint, oils and fuel for equipment. However, these materials are not acutely hazardous, and use of these common hazardous materials in small quantities would not represent a significant hazard to the public or environment. Additionally, project construction would be required to be undertaken in compliance with applicable federal, state, and local regulations pertaining to the proper use of these common hazardous materials. Compliance with these regulations is mandatory per standard permitting conditions. Once operational, the project would not require the use of any hazardous materials. Therefore, the project would not create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials, and impacts would be less than significant.

b. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate. Therefore, adequate circulation would be maintained during the entire construction period. Project construction would be conducted consistent with all applicable safety regulations and would not introduce accident conditions that could result in the release of hazardous materials into the environment. Once operational, the project would not require the use of any hazardous materials. Therefore, the project would not create upset and accident conditions that could result in the release of hazardous materials, and impacts would be less than significant.

c. No Impact

The nearest school is Bill E Young Middle school located approximately 2.5 miles northeast of the project site. Therefore, the project would not 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 would occur.

d. Less Than Significant Impact

An Initial Site Assessment was completed by Kleinfelder on October 25, 2024, to evaluate the potential for hazardous materials to be located on-site (Appendix E). Review of hazardous materials databases and contact with local regulatory agencies did not identify any hazardous materials on the project site or any properties contributing hazardous materials onto the project site. However, site reconnaissance determined that the existing bridge structure has the potential to possess asbestos-containing materials and lead-containing paint. Therefore, the project would be required to perform an asbestos-containing materials survey and a lead-containing paint survey prior to construction. The Initial Site Assessment also determined that the Alamo River is classified as a Class 4 waterway, which is defined as "water that is known to be grossly contaminated by biological or chemical contaminants, or any level of radiological contaminates." Therefore, contact with water should be avoided if possible. However, should contact with water be required, appropriate personal protective equipment should be used and workers coming in contact with water must be immunized for hepatitis A virus, hepatitis B virus, and tetanus. If dewatering is required, purged water should be contained, sampled, and disposed according to state and federal regulations. Although not anticipated, should impacted soil (as evidenced by staining and/or odors) be encountered during construction activities, the person in charge overseeing construction should stop work until a hazardous waste specialist is able to assess the soil for proper handling. All of these measures would be included as conditions of approval of the project, which would reduce impacts to a level less than significant.

e. No Impact

The project site is not located within an airport land use plan or within two miles of a public airport. The nearest airport is the Cliff Hartfield Memorial Airport located 2.25 miles northeast of the project site. Furthermore, the project is limited to replacement of an existing bridge and would not introduce any habitable structures that could expose people to a safety hazard or introduce noise sensitive receivers. Therefore, the project would not result in a safety hazard or excessive noise due to an airport. No impact would occur.

f. Less Than Significant Impact

The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate. Therefore, adequate circulation would be maintained during the entire construction period. Vehicle trips generated during project construction would be minimal and would not affect intersection and roadway operations. Therefore, the project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

g. No Impact

The project is located within a desert environment and is not located within an area mapped as a High Fire Hazard Severity Zone. Additionally, the project is limited to demolition of an existing

bridge and construction of a replacement bridge within the same alignment and would not introduce any habitable structures that could expose people to a significant risk of loss, injury, or death involving wildland fires. Therefore, the project would not expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires. No impact would occur.

4.10 Hydrology and Water Quality

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner, which would:	☐	☐	☒	☐
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
iv. impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

EXPLANATIONS:

The following section is based on the Hydrology Study prepared by Kleinfelder on March 21, 2025 (Appendix F).

a. Less Than Significant Impact

Project construction would have the potential to generate erosion/sedimentation and pollutants that could impact water quality. However, project construction would be subject to the NPDES Construction General Permit requirements, including preparation and implementation of a SWPPP for the prevention of polluted runoff during construction. The project would be required to prepare and implement a SWPPP identifying feasible BMPs prior to the commencement of construction activities. Upon completion, the replacement bridge would not generate any pollutants. Therefore, the project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality, and impacts would be less than significant.

b. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment. The project would not introduce any residential, commercial, or other uses that would increase demand for groundwater. Similarly, the project would not introduce any new impervious surfaces that could interfere with groundwater recharge. Therefore, the project would not significantly decrease groundwater supplies or interfere with groundwater recharge or obstruct sustainable groundwater management, and impacts would be less than significant.

c.i. Less Than Significant Impact

Project construction would be subject to the NPDES Construction General Permit requirements, including preparation and implementation of a SWPPP for the prevention of polluted runoff. The project would be required to prepare and implement a SWPPP identifying feasible BMPs prior to the commencement of construction activities. Upon completion, the replacement bridge would utilize scuppers at the four corners of the deck to allow for drainage at the abutments. Additionally,

the bridge abutments would include riprap to reduce local scour and maintain long-term stability. Therefore, the project would not substantially alter the drainage pattern of the site or the surrounding area in a manner that would result in substantial erosion or siltation on- or off-site, and impacts would be less than significant.

c.ii. Less Than Significant Impact

The Hydrology Study completed for the project evaluated whether the replacement bridge would increase risks associated with flooding. The existing bridge is overtopped during the 100-year storm event. The Hydrology Study determined that the replacement bridge would maintain adequate freeboard under normal design conditions, and would not result in an increase in water elevation during the 2-, 10-, 25-, 50-, and 100-year storm events. The Hydrology Study also determined that the flow conveyance capacity of the replacement bridge would remain consistent, with no measurable increase in water surface elevation at any cross-section, compared to conditions for the existing bridge. Overall, the replacement bridge would meet regulatory standards for floodplain management and would not negatively impact upstream or downstream conditions. Therefore, the project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site, and impacts would be less than significant.

c.iii. Less Than Significant Impact

Project construction would be subject to the NPDES Construction General Permit requirements, including preparation and implementation of a SWPPP for the prevention of polluted runoff. The project would be required to prepare and implement a SWPPP identifying feasible BMPs prior to the commencement of construction activities. Upon completion, the replacement bridge would utilize scuppers at the four corners of the deck to allow for drainage at the abutments. Additionally, the bridge abutments would include riprap to reduce local scour and maintain long-term stability. Therefore, the project would not 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, and impacts would be less than significant.

c.iv. Less Than Significant Impact

As described in Section 4.10c.ii above, the Hydrology Study completed for the project determined that the replacement bridge would maintain adequate freeboard under normal design conditions, and would not result in an increase in water elevation during the 2-, 10-, 25-, 50-, and 100-year storm events. The Hydrology Study also determined that the flow conveyance capacity of the replacement bridge would remain consistent, with no measurable increase in water surface elevation at any cross-section, compared to conditions for the existing bridge. Overall, the replacement bridge would meet regulatory standards for floodplain management and would not negatively impact upstream or downstream conditions. Therefore, the project would not impede or redirect flood flows, and impacts would be less than significant.

d. No Impact

As described in Section 4.10c.ii above, the Hydrology Study completed for the project determined that the replacement bridge would maintain adequate freeboard under normal design conditions,

and would not result in an increase in water elevation during the 2-, 10-, 25-, 50-, and 100-year storm events. The Hydrology Study also determined that the flow conveyance capacity of the replacement bridge would remain consistent, with no measurable increase in water surface elevation at any cross-section, compared to conditions for the existing bridge. Overall, the replacement bridge would meet regulatory standards for floodplain management and would not negatively impact upstream or downstream conditions. The project site is located approximately 100 miles inland from the Pacific Ocean, and therefore is not subject to risk associated with tsunami. The nearest body of water is the Salton Sea, located approximately nine miles west of the project site. Given this distance of approximately nine miles, the project would not be affected by a seiche. Therefore, the project would not result in impacts associated with flood hazard, tsunami, seiche zones, or release of pollutants due to project inundation. No impact would occur.

e. Less Than Significant Impact

As described in Section 4.10a above, project construction would be subject to the NPDES Construction General Permit requirements, including preparation and implementation of a SWPPP for the prevention of polluted runoff during construction. Upon completion, the replacement bridge would not generate any pollutants. As described in Section 4.10b above, the project would not decrease groundwater supplies or interfere with groundwater recharge. Therefore, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and impacts would be less than significant.

4.11 Land Use and Planning

Would the project:

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

EXPLANATIONS:

a. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would be located entirely within the right-of-way and approaches of Brandt

Road Bridge that spans the Alamo River and would not physically impact any surrounding land uses. The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate, maintaining adequate circulation during the entire construction period. Therefore, the project would not physically divide an established community and impacts would be less than significant.

b. Less Than Significant Impact

The project site is located within the existing right-of-way and approaches of Brandt Road Bridge that spans the Alamo River and does not have a General Plan or zoning designation. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards and would not physically impact any surrounding land uses. As described in Section 4.4 above, implementation of mitigation measures BIO-1 through BIO-10 would reduce all potential impacts related to biological resources to a level less than significant. As described in Section 4.5b above, implementation of mitigation measure CUL-1 would reduce all potential impacts related to archaeological resources to a level less than significant. As described throughout this IS/MND, all other impacts not requiring mitigation would be less than significant or would have no impact. Therefore, the project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and no impact would occur.

4.12 Mineral Resources

Would the project:

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

EXPLANATIONS:

a. No Impact

The project site consists of an existing bridge spanning the Alamo River, and would not be a feasible location for mineral resource extraction. Therefore, the project would not result in the loss of availability of known mineral resources that would be of value to the region and the residents of the state or of a locally important mineral resource recovery site. No impact would occur.

b. No Impact

There are no mineral resource recovery sites delineated at the project site or in the surrounding area. Therefore, the project would not impact a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. No impact would occur.

4.13 Noise

Would the project:

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

EXPLANATIONS:

a. Less Than Significant Impact

Noise Fundamentals

Noise is defined as sound that is loud, unpleasant, unexpected, or undesired, and therefore, may cause general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment. Decibels (dB) are the standard unit of measurement of the sound pressure generated by noise sources and are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale for earthquake magnitudes. A doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the noise energy would result in a 3 dB decrease.

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-weighted scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. Noise levels using A-weighted measurements are written as dB(A). It is widely accepted that the average healthy ear can barely perceive changes of 3 dB(A) (increase or decrease) and that a change of 5 dB(A) is readily perceptible. An increase of 10 dB(A) is perceived as twice as loud, and a decrease of 10 dB(A) is perceived as half as loud (Caltrans 2013).

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors have been developed. The noise descriptors used for this study are the equivalent noise level (L_{eq}), the maximum noise level, and the community noise equivalent level (CNEL).

The L_{eq} is the equivalent steady-state noise level that is calculated by averaging the acoustic energy over a stated time period; when no period is specified, a 1-hour period is assumed. The maximum noise level is the highest sound level occurring during a specific period.

The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and a 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

Regulatory Framework

Federal Transit Administration

According to the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), project construction noise criteria should account for the existing noise environment, the absolute noise levels during construction activities, the duration of the construction, and the adjacent land use. The FTA considers a daytime exterior construction noise level of 80 dB(A) L_{eq} as a reasonable threshold for noise sensitive residential land use.

Imperial County

County General Plan Noise Element Section IV.C.3 addresses noise generated by construction activities. It states:

- Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq}, when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a one (1) hour period.

- Construction equipment operation shall be limited to the hours of 7 a.m. to 7 p.m., Monday through Friday, and 9 a.m. to 5 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays. In cases of a person constructing or modifying a residence for himself/herself, and if the work is not being performed as a business, construction equipment operations may be performed on Sundays and holidays between the hours of 9 a.m. and 5 p.m. Such non-commercial construction activities may be further restricted where disturbing, excessive, or offensive noise causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area.

Based on these standards, the applicable limit for project construction activities is 75 dB(A) L_{eq} at the nearest sensitive receptor which is the residence located northeast of the project site.

Construction Noise

Project-generated construction noise would vary depending on the construction process. Construction activities are anticipated to begin in September 2026 and last for 16 months. A project-specific construction equipment list was provided by the applicant. The duty cycle is the amount of time that equipment generates the reported noise level during typical, standard equipment operation. The noise levels and duty cycles summarized in Table 7 are based on measurements and studies conducted by Federal Highway Administration (FHWA) and the FTA.

Table 7 Construction Equipment Noise Levels			
Equipment	Maximum Noise Level at 50 Feet [dB(A) L_{max}]	Typical Duty Cycle	Maximum Average Hourly Noise Level [dB(A) L_{eq}]
Backhoe	80	40%	77
Concrete Deck Finisher[1]	85	50%	82
Concrete Mixer Truck	85	40%	81
Crane	81	16%	73
Drill Rig	84	20%	77
Dump Truck	84	40%	80
Excavator	85	40%	81
Water Truck[2]	84	40%	80

SOURCE: FHWA 2006, 2008, FTA 2018.
dB(A) = A-weighted decibels; L_{max} = maximum equivalent noise level; L_{eq} = one-hour equivalent noise level
[1]Concrete deck finisher noise assumed to be comparable to paver noise.
[2]Water truck noise assumed to be comparable to dump truck noise.

During construction activities, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Although maximum noise levels may vary from 80 to 85 dB(A) at a distance of 50 feet during most construction activities, the loudest hourly average noise levels would be less when factoring in the typical duty cycle. Noise levels were modeled for the following three phases: (1) bridge demolition with the simultaneous use of a dump truck, excavator, and water truck, (2) bridge construction with the simultaneous use of a backhoe, crane, and excavator, and (3) bridge paving with the simultaneous use of a concrete deck finisher and concrete mixer truck. Construction noise levels were modeled at three receivers located at the adjacent residence using the SoundPLAN program (Navcon Engineering, Inc. 2018) and are summarized in Table 8. Construction noise contours for the loudest phase (bridge demolition) are shown in Figure 8. SoundPLAN data is provided in Appendix G.

Table 8 Construction Noise Levels at Nearest Residential Use			
	Noise Level [dB(A) L_{eq}]		
Receiver	Bridge Demolition	Bridge Construction	Bridge Paving
1	67	65	67
2	75	72	74
3	67	65	67

dB(A) = A-weighted decibels; L_{eq} = one-hour equivalent noise level

As shown in Table 8 above, construction noise levels would range from 45 to 70 dB(A) L_{eq} at the three modeled receivers at the adjacent residence. Therefore, construction noise levels would not exceed the 75 dB(A) L_{eq} standard established in Section IV.C.3 of the County's General Plan, and impacts would be less than significant.

Operation

Once construction is complete, the project would not be a source of operational noise. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not generate any new vehicle trips nor be a source of stationary of noise.

b. Less Than Significant Impact

Human reaction to vibration is dependent on the receiver's environment, as well as individual sensitivity. For example, outdoor vibration is rarely noticeable and generally not considered annoying. Typically, humans must be inside a structure for vibrations to become noticeable and/or annoying (FTA 2018). Based on several federal studies, the threshold of perception is 0.035 inch per second (in/sec) peak particle velocity (PPV), with 0.24 in/sec PPV being a distinctly perceptible (Caltrans 2013). Based on best available data, impacts for hydraulic breakers, or hammers, and other non-transient sources such as those associated with project construction shall be considered significant if the PPV exceeds 0.2 in/sec. Vibration perception would occur at structures, as people do not perceive vibrations without vibrating structures.

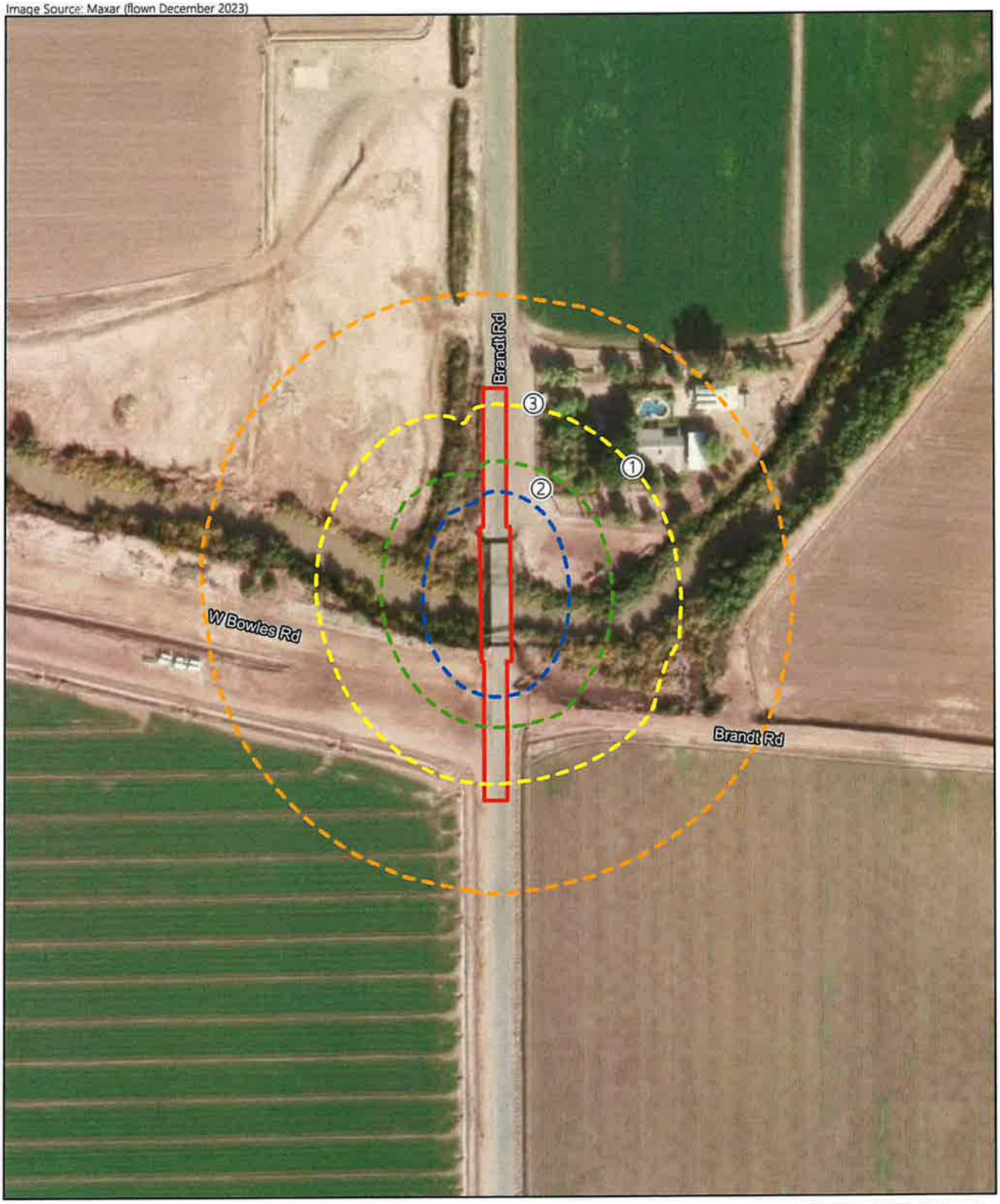
Construction activities produce varying degrees of ground vibration depending on the equipment and methods employed. While ground vibrations from typical construction activities rarely reach levels high enough to cause damage to structures, special consideration must be made when sensitive or historic land uses are near the construction site. Construction activities that typically generate the highest levels of vibration are blasting and impact pile driving. The project would not require pile driving or blasting. The equipment with the greatest potential to generate vibration would be loaded trucks. According to the FTA, loaded trucks generate vibration levels of 0.076 in/sec PPV at 25 feet. All construction equipment would operate at distances greater than 25 feet from the adjacent residence. Consequently, vibration levels at the adjacent residence would be below 0.2 in/sec. Therefore, project construction would not generate excessive ground borne vibration or ground borne noise levels, and impacts would be less than significant.

Once construction is complete, the project would not be a source of groundborne noise or vibration. The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not generate any new vehicle trips nor generate any other sources of groundborne noise or vibration.

c. No Impact

The nearest airport is the Cliff Hartfield Memorial Airport located 2.25 miles northeast of the project site. The project is not located within a 60 CNEL contour for any airport. Furthermore, the project is limited to replacement of an existing bridge and would not introduce any noise sensitive receivers. Therefore, the project would not expose people to excessive noise levels associated with an airport. No impact would occur.

Image Source: Maxar (flown December 2023)



Project Impact Area

Receivers

Construction Noise

60 dB(A) L_{eq}

65 dB(A) L_{eq}

70 dB(A) L_{eq}

75 dB(A) L_{eq}

0 Feet 200

RECON

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FIGURE 8

Construction Noise Contours

4.14 Population and Housing

Would the project:

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

EXPLANATIONS:

a. No Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not introduce any residential, commercial, or other uses that would increase the population in the surrounding area. Similarly, the project would not introduce any new infrastructure or utilities that could allow for unplanned growth in the surrounding area. Therefore, the project would not induce substantial unplanned population growth either directly or indirectly. No impact would occur.

b. No Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not impact the residence located northeast of the project site. Therefore, the project would not displace any existing people or housing. No impact would occur.

4.15 Public Services

Would the project:

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

EXPLANATIONS:

a.i through a.v. No Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not introduce any residential, commercial, or other uses that would require fire protection services, police protection services, school facilities, parks, or other public facilities. Similarly, the project would not introduce any new infrastructure or utilities that could allow for unplanned growth in the surrounding area. Therefore, the project would not require new or expanded fire protection facilities, police protection services, school facilities, parks, or other public facilities. No impact would occur.

4.16 Recreation

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
b. Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

EXPLANATIONS:

a. No Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not introduce any residential uses that would increase demand for parks. Similarly, the project would not introduce any new infrastructure or utilities that could allow for unplanned growth in the surrounding area. Therefore, the project would not increase the use of existing neighborhood and regional parks or other recreational facilities. No impact would occur.

b. No Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. Therefore, the project would not include recreational facilities or require the construction or expansion of recreational facilities. No impact would occur.

4.17 Transportation/Traffic

Would the project:

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

EXPLANATIONS:

a. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not introduce any residential, commercial, or other uses that would generate vehicle trips. The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate. Therefore, adequate circulation would be maintained during the entire construction period. Vehicle trips generated during project construction would be minimal and would not affect intersection and roadway segment operations on the surrounding roadway network. The project would not affect any bicycle lanes or bus stops during construction. Therefore, the project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, and impacts would be less than significant.

b. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current

standards. The project would not introduce any residential, commercial, or other uses that would generate vehicle trips. Vehicle trips generated during project construction would be minimal. Therefore, preparation of a Vehicle Miles Traveled Analysis per CEQA Guidelines Section 15064.3, subdivision (b) was not required, and impacts would be less than significant.

c. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and would not result in any permanent changes to the existing circulation network. The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. Therefore, the project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses, and impacts would be less than significant.

d. Less Than Significant Impact

The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate. Therefore, adequate circulation would be maintained during the entire construction period. Vehicle trips generated during project construction would be minimal and would not affect intersection and roadway operations. Therefore, the project would not result in inadequate emergency access, and impacts would be less than significant.

4.18 Tribal Cultural Resources

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?	☐	☐	☐	☒
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 © of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision © of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?	☐	☒	☐	☐

EXPLANATIONS:

a.i. No Impact

Assembly Bill 52 establishes a formal consultation process between the lead agency, the County, and all California Native American tribes within the area regarding tribal cultural resource evaluation. Assembly Bill 52 mandates that the lead agency must provide formal written notification to the designated contact of traditionally and culturally affiliated California Native American tribes that have previously requested notice. Native American tribes are notified early in the project review phase by written notification that includes a brief description of the project, location, and the lead agency's contact information. The tribal contact then has 30 days to request project-specific consultation pursuant to this section (Public Resources Code Section 21080.1).

Per Assembly Bill 52, the County initiated consultation with Native American tribes that are traditionally and culturally affiliated with the geographic area of the project to identify resources of cultural or spiritual value to the tribe. On November 15, 2025, the County sent notification letters to the Agua Caliente Band of Cahuilla Indians, Campo Band of Diegueno Mission Indians, and Quechan Tribe of the Fort Yuma Reservation. The County received a response to the notification letter from the Agua Caliente Band of Cahuilla Indians requesting consultation, which occurred between December 8, 2025, and January 14, 2026. On January 14, 2026, the Agua Caliente Band of Cahuilla

Indians submitted a letter to the County requesting that specific protocols be followed in the event that human remains are discovered during construction.

As described in Section 4.5a above, the pedestrian survey completed in support of the Archaeological Survey Report determined that the existing bridge was the only potential historic resource within the APE. No other cultural resources were observed within the APE. Furthermore, the Archaeological Survey Report determined that the existing bridge does not appear to meet NRHP or CRHR eligibility criteria for significance. Therefore, the project would not cause a substantial adverse change to a tribal cultural resource that would qualify or be eligible for listing in the California Register of Historical Resources or the local register of historical resources in accordance with the Public Resources Code Section 5020.1(k). No impact would occur.

a.ii. Potentially Significant Unless Mitigation Incorporated

As described in Section 4.5b above, the pedestrian survey completed in support of the Archaeological Survey Report did not identify any archaeological resources within the APE. However, the APE may have unknown buried cultural resources, the discovery of which would be considered a significant impact. Implementation of mitigation measure CUL-1 described above would reduce this impact to a level less than significant. Similarly, as described in Section 4.5c above, the APE may have unknown buried human remains, the discovery of which would be considered a significant impact. Implementation of mitigation measure CUL-2 described above would reduce this impact to a level less than significant.

4.19 Utilities and Service Systems

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Result in a determination by the wastewater treatment provided which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local statutes and regulation related to solid waste?	☐	☐	☒	☐

EXPLANATIONS:

a. No Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and would not introduce any residential, commercial, or other uses that would require expanded water or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities. Therefore, the project would not result in increased utilities demand that would cause significant environmental effects. No impact would occur.

b. Less Than Significant Impact

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and would not introduce any residential, commercial, or other uses that would require water supply. Water consumption would be limited to small amounts during construction. Therefore, sufficient water supplies would be available to serve the project, and impacts would be less than significant.

c. No Impact

The project is limited to a demolition of an existing bridge and construction of a replacement bridge within the same alignment and would not introduce any residential, commercial, or other uses that would require expanded wastewater treatment capacity. Therefore, the project would not exceed existing wastewater treatment capacity. No impact would occur.

d. Less Than Significant Impact

Project construction would generate small amounts of waste that would likely be disposed of at either the Republic Services Imperial Landfill or Imperial County Dump. Both landfills would have sufficient capacity to accommodate the small amounts of waste that would be generated during construction. Operation of the project would not generate any solid waste. Therefore, the project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, and impacts would be less than significant.

e. Less Than Significant Impact

As described in Section 4.19d above, the project would generate small amounts of waste during construction that would be disposed of at either the Republic Services Imperial Landfill or Imperial County Dump, which both have adequate capacity. Operation of the project would not generate any solid waste. Therefore, the project would comply with federal, state, and local statutes and regulation related to solid waste, and impacts would be less than significant.

4.20 Wildfire

Would the project:

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

Issue	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	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?	☐	☐	☐	☒

EXPLANATIONS:

a. Less Than Significant Impact

The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate. Therefore, adequate circulation would be maintained during the entire construction period. Vehicle trips generated during project construction would be minimal and would not affect intersection and roadway operations. Therefore, the project would not impair an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

b. No Impact

The project is located within a desert environment and is not located within an area mapped as a High Fire Hazard Severity Zone. Additionally, the project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment would not introduce any habitable structures that could expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, the project would not exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact would occur.

c. No Impact

The project is located within a desert environment and is not located within an area mapped as a High Fire Hazard Severity Zone. Additionally, the project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and does not include any infrastructure facilities. Therefore, the project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. No impact would occur.

d. No Impact

The project is located within a desert environment and is not located within an area mapped as a High Fire Hazard Severity Zone. Additionally, the project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment and would not

introduce any habitable structures that could expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, the project would not 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 would occur.

4.21 Mandatory Findings of Significance

Does the project:

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

EXPLANATIONS:

a. Less Than Significant With Mitigation Incorporated

As described in Section 4.4a above, implementation of mitigation measures BIO-1 through BIO-10 would reduce all potential impacts on biological resources to a level less than significant. As described in Section 4.5a above, the project would not impact any historical resources. As described in Section 4.5b, implementation of mitigation measure CUL-1 would reduce potential impacts on archaeological resources to a level less than significant.

b. Less Than Significant With Mitigation Incorporated

As described in the IS/MND, all potential impacts would be mitigated to a level less than significant. Air quality is a regional issue and the cumulative study area for air quality impacts encompasses the SSAB as a whole. As described in Section 4.3a above, the project does not include growth-generating components, but is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. Furthermore, the project would not construct housing or any other uses that would result in regional population growth. Therefore, the project would be consistent with IACPD growth forecasts and would not conflict with or obstruct implementation of the applicable air quality plan. As described in Section 4.4a above, implementation of mitigation measures BIO-1 through BIO-10 would reduce all potential impacts on biological resources to a level less than significant, and therefore would not contribute a cumulative impact to biological resources. As described in Section 4.5b, implementation of mitigation measure CUL-1 would reduce potential impacts on archaeological resources to a level less than significant, and therefore would not contribute a cumulative impact to archaeological resources. As described throughout the Draft IS/MND, all other project-level impacts not requiring mitigation would be less than significant or have no impact. Therefore, the project would not result in any project-level significant impacts that could contribute to an existing cumulative impact on the environment.

c. Less Than Significant Impact

As described in Sections 4.1 through 4.20, the project would not result in any substantial adverse direct or indirect impacts to human beings. Therefore, impacts would be less than significant.

5.0 Preparers

Imperial County Department of Public Works
Robert Ureña III, PE

RECON Environmental, Inc., 3111 Camino del Rio North, Suite 600, San Diego, CA 92108
Nick Larkin, Senior Project Manager
Jessica Fleming, Air Quality/GHG/Noise Analyst
Chelsea Polevy, Biologist
Benjamin Arp, GIS Specialist
Stacey Higgins, Senior Production Specialist

6.0 Sources Consulted

Project Description

U.S. Geological Survey (USGS)

1992 7.5-minute Westmorland East quadrangle, Township 12 South, Ranges 13 East and 14 East.

Aesthetics

California Department of Transportation (Caltrans)

2025 California State Scenic Highway Scenic Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed July 28, 2025.

Agriculture and Forestry Resources

California Department of Conservation

2025 California Important Farmland Finder. https://maps.conservation.ca.gov/dlrp/ciff/. Accessed September 1, 2025.

Air Quality

California Air Pollution Control Officers Association

2022 California Emissions Estimator Model (CalEEMod), Version 2022.1.1.29.

Imperial County Air Pollution Control District (ICAPCD)

2009 2009 Imperial County State Implementation Plan for Particulate Matter Less Than 10 Microns in Aerodynamic Diameter. August.

2010 2009 1997 8-Hour Ozone Modified Air Quality Management Plan. July.

2017 *CEQA Air Quality Handbook, Guidelines for the Implementation of the California Environmental Quality Act of 1970*. December.

Office of Environmental Health Hazard Assessment

2015 Air Toxics Hot Spots Program Guidance Manual for the Preparation of Risk Assessments (Guidance Manual), February.

Biological Resources

California Department of Fish and Wildlife (CDFW)

2012 Staff Report on Burrowing Owl Mitigation. March.

Holland, R. F.

1986 Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame Heritage Program, California Department of Fish and Game. October.

Oberbauer, Thomas, Meghan Kelly, and Jeremy Buegge
2008 Draft Vegetation Communities of San Diego County. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California," Robert F. Holland, Ph.D., October 1986. March.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens.
2009 *A Manual of California Vegetation*. Second Edition. California Native Plant Society. Sacramento, California, USA.

Greenhouse Gas Emissions

South Coast Air Quality Management District
2008 Interim CEQA GHG Significance Thresholds for Stationary Sources, Rules, and Plans

2009 Greenhouse Gas CEQA Significance Threshold Stakeholder Working Group 14. November 19.

2010 Greenhouse Gas CEQA Significance Thresholds Stakeholder Working Group 15. September 28.

Noise

California Department of Transportation (Caltrans)
2013 Technical Noise Supplement. November.

Federal Highway Administration (FHWA)
2006 Roadway Construction Noise Model User's Guide. FHWA-HEP-05-054, SOT-VNTSC-FHWA-05-01. Final Report. January.

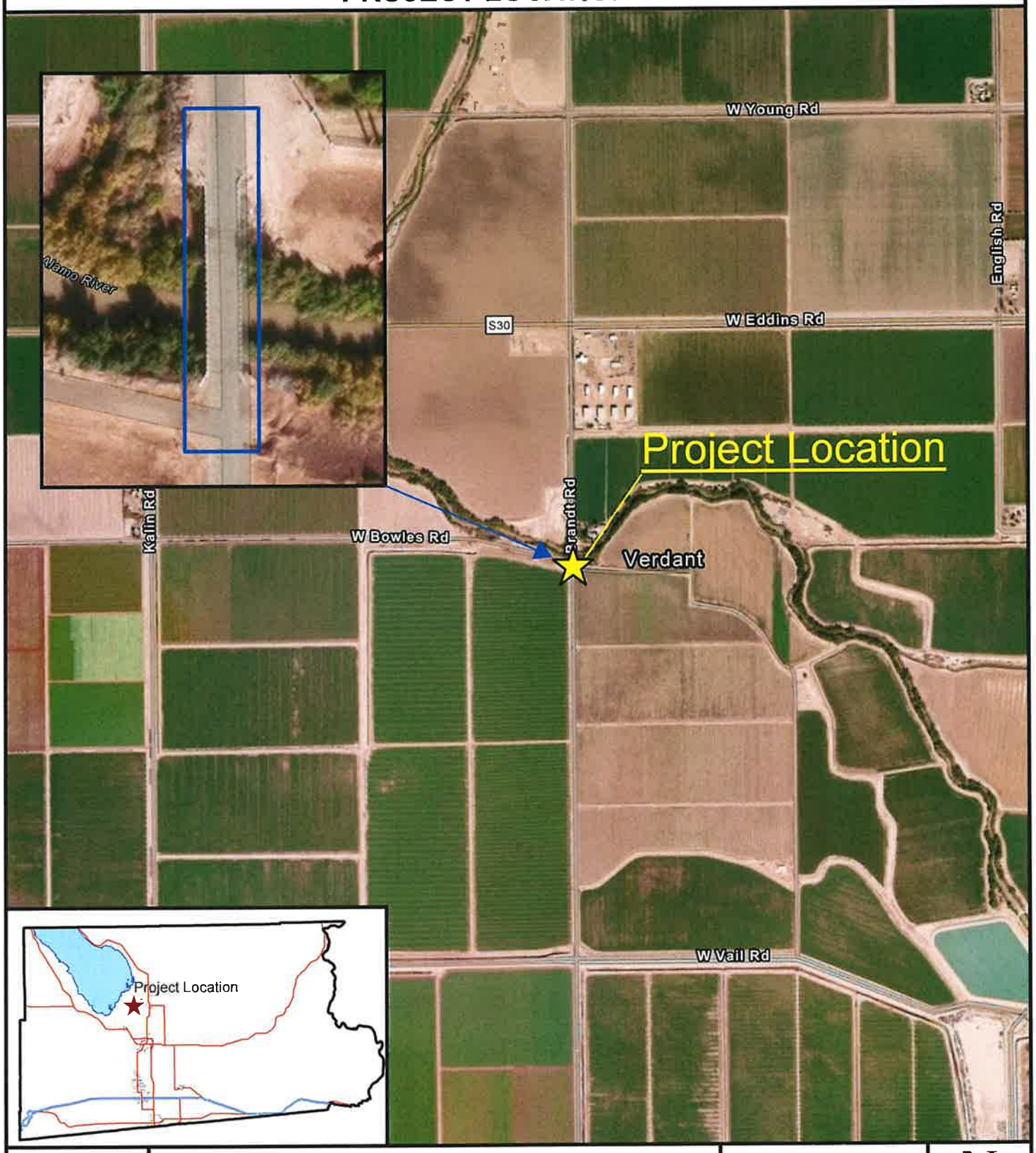
2008 Roadway Construction Noise Mode, V1.1. Washington, DC.

Federal Transit Administration (FTA)
2018 Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Prepared by John A. Volpe National Transportation Systems Center. September.

Navcon Engineering, Inc.
2018 SoundPLAN Essential version 4.1.

VICINITY MAP

PROJECT LOCATION MAP



BRANDT ROAD BRIDGE REPLACEMENT
IS# IS25-0037
IMPERIAL COUNTY DEPARTMENT OF PUBLIC WORKS

Project Location

N

COMMENT LETTERS

Aimee Trujillo

From: Jill Mccormick <historicpreservation@quechantribe.com>
Sent: Wednesday, November 19, 2025 7:29 AM
To: Aimee Trujillo; Luis Bejarano
Subject: Re: [EXTERNAL]:IS25-0037 Comments received

CAUTION: This email originated outside our organization; please use caution.

Good morning,
This email is to inform you that the Historic Preservation Office of the Ft. Yuma Quechan Tribe does not wish to comment on this project.

Jill

H. Jill McCormick, M.A.
Historic Preservation Office
Ft. Yuma Quechan Indian Tribe
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-919-3631
Cell: 928-920-6521

RECEIVED
NOV 19 2025
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

From: Aimee Trujillo <aimeetrujillo@co.imperial.ca.us>
Sent: Tuesday, November 18, 2025 3:28 PM
To: Jolene Dessert <JoleneDessert@co.imperial.ca.us>; Margo Sanchez <MargoSanchez@co.imperial.ca.us>; Belen Leon-Lopez <BelenLeon-Lopez@co.imperial.ca.us>; Monica Soucier <MonicaSoucier@co.imperial.ca.us>; Jesus Ramirez <JesusRamirez@co.imperial.ca.us>; Ryan Kelley <RyanKelley@co.imperial.ca.us>; Rosa Lopez <RosaLopez@co.imperial.ca.us>; Jorge Perez <JorgePerez@co.imperial.ca.us>; Jeff Lamoure <JeffLamoure@co.imperial.ca.us>; Alphonso Andrade <AlphonsoAndrade@co.imperial.ca.us>; Marco Topete <marcotopete@co.imperial.ca.us>; Sheila Vasquez-Bazua <SheilaVasquezBazua@co.imperial.ca.us>; David Lantzer <davidlantzer@co.imperial.ca.us>; Andrew Loper <AndrewLoper@co.imperial.ca.us>; Claudia Valadez <Claudia.Valadez@co.imperial.ca.us>; Veronica Atondo <VeronicaAtondo@co.imperial.ca.us>; John Gay <JohnGay@co.imperial.ca.us>; Carlos Yee <CarlosYee@co.imperial.ca.us>; rkelley@icso.org <rkelley@icso.org>; Fred Miramontes <fmiramontes@icso.org>; Robert Benavidez <RBenavidez@icso.org>; iidenvironmental@iid.com

Aimee Trujillo

From: Margo Sanchez
Sent: Wednesday, November 19, 2025 1:49 PM
To: Aimee Trujillo; Planning - ICPDSCommentLetters
Cc: Luis Bejarano
Subject: RE: IS25-0037 Comment Request for Brandt Rd, Calipatria

Good afternoon,

The Agricultural Commissioner's Office has No Comment for this projects.

Best regards,
Margo

Margo Sanchez
Deputy Agricultural Commissioner
Deputy Sealer of Weights & Measures
Special Projects / Weights & Measures Division
Imperial County
442.265.1500
7-4:30pm / Off rotating Fridays
agcom.imperialcounty.org

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Cc: Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Luis Bejarano <luisbejarano@co.imperial.ca.us>; Adriana Ceballos <adrianaceballos@co.imperial.ca.us>; Aimee Trujillo <aimeetrujillo@co.imperial.ca.us>; Kamika Mitchell <kamikamitchell@co.imperial.ca.us>; Kayla Henderson <kaylahenderson@co.imperial.ca.us>; Olivia Lopez <olivialopez@co.imperial.ca.us>; Valerie Grijalva <valeriegrijalva@co.imperial.ca.us>; Vanessa DeLaTeja <vanessadelateja@co.imperial.ca.us>
Subject: IS25-0037 Comment Request for Brandt Rd, Calipatria

Good afternoon,

Aimee Trujillo

From: Andrew Loper
Sent: Wednesday, November 19, 2025 7:32 AM
To: Aimee Trujillo
Cc: Michael Abraham; Luis Bejarano; Adriana Ceballos; Kamika Mitchell; Kayla Henderson; Olivia Lopez; Valerie Grijalva; Vanessa DeLaTeja; Planning - ICPDSCommentLetters; David Lantzer
Subject: RE: IS25-0037 Comments received

Good Morning
The Imperial County Fire Department has no comments for IS25-0037 at this time. ICFD request the right to provide comments at a later date as necessary. Thank you

IMPERIAL COUNTY FIRE DEPARTMENT
OFFICE OF EMERGENCY SERVICES

Deputy Fire Marshal
Prevent, Protect & Provide
Andrew Loper

2514 LA BRUCHERIE ROAD
IMPERIAL, CA 92251
andrewloper@co.imperial.ca.us

OFFICE (442) 265-3020
CELL (760) 604-1828

RECEIVED
NOV 19 2025
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

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Cc: Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Luis Bejarano <luisbejarano@co.imperial.ca.us>; Adriana Ceballos <adrianaceballos@co.imperial.ca.us>; Aimee Trujillo <aimeetrujillo@co.imperial.ca.us>; Kamika Mitchell <kamikamitchell@co.imperial.ca.us>; Kayla Henderson <kaylahenderson@co.imperial.ca.us>; Olivia Lopez <olivialopez@co.imperial.ca.us>; Valerie Grijalva <valeriegrijalva@co.imperial.ca.us>; Vanessa DeLaTeja <vanessadelateja@co.imperial.ca.us>
Subject: IS25-0037 Comments received

Good afternoon,

IID

A century of service.

www.iid.com

Since 1911

Monday, December 1, 2025

RECEIVED
DEC 01 2025
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Luis Bejarano
Planner I
Planning & Development Services
801 Main St.
El Centro, CA 92243

SUBJECT: Brand Road Bridge (APN: 020-160-030)

Dear Luis Bejarano:

On Tuesday, November 18, 2025, the Imperial Irrigation District received a request from the Imperial County Planning & Development Services for agency regarding the Brand Road Bridge located at Brandt Rd, Calipatria, CA 92233. The project consists of the Imperial County Department of Public Works (ICDPW) proposing to replace the exsisting Brand Road Bridge over the Alamo River (County Project Np. 7094BRF). The project will construct a new single-span, prestressed concrete bridge along the same alignment as the current two-lane structure. The replacement bridge will feature two 12-foot travel lanes and 4-foot shoulders, maintaining the existing raodway width and configuration. The new bridge will be built at the same grade as the exsisting bridge, ensuring that all improvements remain within the established County right-of-way. The project is located approximately 2.5 miles southwest of the city of Calipatria and east of the Salton Sea, in Imperial County California. The project site is located within the U.S. Geological Survey 7.5-minute Westmorland East quadrangle, Township 12 South, Ranges 13 East and 14 East.

IID has reviewed the project information and has the following comments:

1. The project proponent will be required to provide and bear all costs associated with acquisition of land, rights of way, easements, and infrastructure relocations and realignments deemed necessary to accommodate the project. Any street or road improvements imposed by the local governing authority shall also be at the project proponent cost.

2. Public utility easements over all private and public roads and additional ten (10) feet in width on both side of the private and public roads shall be dedicated to IID for the construction, operation, and maintenance of its electrical infrastructure.

IMPERIAL IRRIGATION DISTRICT
GENERAL COUNSEL'S OFFICE • 333 E. BARIONI BLVD. • P.O. BOX 937 • IMPERIAL, CA 92251
TELEPHONE (760) 339-9564 • FAX (760) 339-9062

3. Any new, relocated, modified or reconstructed IID facilities required for and by the project (which may include but is not limited to the dedication of real property for the purpose of siting an electrical utility substations to support the project, the cost of acquisition and dedication of rights of way and/or easements for the construction of electrical transmission and/or distribution lines and ancillary facilities associated with the conveyance of energy service) are to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation.

4. The applicant will be required to provide rights of ways and easements for any proposed power line extensions and/or any other infrastructure needed to serve the project. In addition, the necessary access to allow for continued operation and maintenance of any IID facilities located on adjoining properties where no public access exists.

5. Substations and switchyards shall be located on property that will transferred to IID in fee simple ownership with legal access.

6. If and when the County of Imperial is contemplating modifications to existing overhead distribution rated power lines that may impact the replacement of the bridge at Brandt Rd. & the Alamo River, please contact the areas service planner Mr. Oscar Ruelas at 760-482-3423 or email at ORuelas@IID.com. Customer is required to apply with IID for electrical power line modifications to the project. In addition to submitting a formal application (available for download at http://www.iid.com/home/showdocument?id=12923), the applicant will be required to submit an AutoCAD file of the site plan, approved plans, project schedule, and applicable fees, permits, easements and environmental compliance documentation pertaining to the project. The applicant shall be responsible for all costs and mitigation measures related to providing electrical line modifications to the project.

7. Electrical capacity is limited in the project area. A circuit study may be required. Any system improvements or mitigation identified in the circuit study to enable the provision of electrical line modifications to the project shall be the financial responsibility of the applicant.

8. Applicant shall provide a surveyed legal description and associated exhibit certified by a licensed surveyor for all rights of way deemed by IID as necessary to accommodate the project electrical infrastructure on a temporary/ permanent condition. Rights-of-Way and easements shall be in a form acceptable to and at no cost to IID for installation, operation, and maintenance of all electrical facilities deemed necessary for the project.

9. The County of Imperial Public Works Department (PWD) proposes to construct a new single-span, prestressed concrete bridge along the same alignment as the current two-lane structure. The existing bridge and associated piles will be

demolished and removed prior to construction of the new bridge. The new bridge will be built at the same grade as the existing bridge to ensure all improvements remain within the established Imperial County right-of-way. Staging for construction and related activities will be entirely within Imperial County right-of-way.

10. The proposed Brandt Road bridge replacement project is located on APN 020-160-030-000, 2.5 miles southwest of the City of Calipatria, California, and crosses over the Alamo River. Imperial Irrigation District (IID) Water Department facilities that may be impacted directly or indirectly by this project include the C Lateral 1 Spill, Vail Lateral 1, Vail 1 Drain Pipeline, and the Vail 1 Drain.

11. To insure there are no impacts to IID Water Department facilities the project's plans are to be submitted to IID Water Department Engineering Services Section from concept 30%, 60%, 90%, 100% as soon as possible prior to final project design. IID Water Department Engineering Services Section should be contacted at (760) 339-9265 for more information.

12. Any modifications to IID canals and drains may have project level environmental impacts that need analysis on a site-specific basis. All mitigation necessary due to the construction, relocation, and/or upgrade of IID facilities is the responsibility of the project proponent.

13. The proponents may not use IID's canal or drain banks to access the project site. Any abandonment of easements or facilities will be approved by the IID based on systems (irrigation, drainage, Power, etc.) needs.

14. An IID encroachment permit shall be required for all surface and subsurface improvements including demolition of existing bridge, new bridge replacement, staging areas in IID right of way, roadway widening in IID right of way and guard railing. The County of Imperial will need to include plan and profile construction drawings with their application and submit to IID for review and comments prior to any demolition and construction activities.

15. Any construction or operation on IID property or within its existing and proposed right of way or easements will require an encroachment permit or agreement that encompasses all IID permits, including but not limited to: surface improvements such as proposed new streets, driveways, parking lots, landscape; all water, sewer, storm water; and any other above ground or underground utilities. A copy of the encroachment permit application is included in IID's Developer Project Guide available at http://www.iid.com/home/showdocument?id=2328. For additional information regarding encroachment permits, the IID Real Estate Section should be contacted at (760) 339-9239.

16. In addition to IID's recorded easements, IID claims, at a minimum, a prescriptive right of way to the toe of slope of all existing canals and drains. Where space is limited and depending upon the specifics of adjacent modifications, the IID may claim addition secondary easements/prescriptive rights of ways to ensure operation and maintenance of IID's facilities can be maintained and re not impacted and if impacted mitigated. Thus, IID should be consulted prior to the installation of any facilities adjacent to IID's facilities. Certain conditions may be place on adjacent facilities to mitigate or avoid impacts to IID's facilities.

17. Any new, relocated, upgraded or reconstructed IID facilities required for and by the project (which can include but is not limited to electrical utility substations, electrical transmission and distribution lines, water deliveries, canals, drains, etc.) need to be included as part of the project's CEQA and/or NEPA documentation, environmental impact analysis and mitigation. Failure to do so will result in postponement of any construction and/or modification of IID facilities until the environmental documentation is amended and environmental impacts are fully mitigated. Any and all mitigation necessary as a result of the construction, relocation, and/or upgrade of IID facilities is the responsibility of the project proponent.

Should you have any questions, please do not hesitate to contact IID at iidenviornmental@iid.com. Thank you for the opportunity to comment on this matter.

Respectfully,

Wayne K. Strumpfer
General Counsel

Cc: Matthew H Smelser – Manager, Power Dept.
Mike Pacheco – Manager, Water Dept.
Tina Shields – Manager, Water Dept
Paul Rodriguez – Deputy Mgr. Power Dept. Power Dept.
Guillermo Barraza – Mgr. of Distribution Srvcs. & Maint. Oprtns., Power Dept.
Laura Cervantes – Supervisor, Real Estate
Jessica Humes – Supervisor, Environmental Compliance Water

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

December 5, 2025

RECEIVED
By Imperial County Plannning & Development Services at 2:03 pm, Dec 05, 2025

Mr. Jim Minnick
Planning & Development Services Director
801 Main St.
El Centro, CA 92243

SUBJECT: Initial Study 25-0037 – Brandt Road Bridge Replacement

Dear Mr. Minnick:

The Imperial County Air Pollution Control District ("Air District") thanks you for the opportunity to review and comment on Initial Study (IS) 25-0037 for the Brandt Road Bridge Replacement (project). The project will first remove the existing wooden bridge across the Alamo River and replace it with a new single-span concrete bridge maintaining the same grade, roadway width and configuration. The project site is located approximately 2.5 miles southwest of Calipatria, also identified as Assessor's Parcel Number 020-160-030.

The Air District finalized its review of the Initial Study. The Air District is requesting the inclusion of language that the project will adhere to Regulation VIII and implement Standard Measures for Fugitive PM10 Control per section 7.1 of the Handbook for all areas used for the project, including staging areas. In addition, the Air District is request the inclusion of language of the submittal of a **Construction Notification** no less than 10 days prior to the start of construction.

Finally, the Air District encourages the project proponent to remain in constant communication with Air District staff as the project moves forward.

The Air District's regulations, CEQA Air Quality Handbook and forms can be accessed via the internet at https://apcd.imperialcounty.org. Should you have questions, please call our office at (442) 265-1800.

Sincerely,

Curtis Blondell
APC Environmental Coordinator II

Reviewed by,

Monica N. Soucier
APC Division Manager

IS 25-0037

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

TRIBAL HISTORIC PRESERVATION OFFICE
5401 Dinah Shore Drive
PALM SPRINGS, CA 92264
(760) 699-6800
FAX (760) 699-6924

03-015-2025-014

December 08, 2025

[VIA EMAIL TO:luisbejarano@co.imperial.ca.us]
Imperial County
Luis Bejarano
801 Main Street
El Centro, CA 92243

RECEIVED
DEC 2025
IMPERIAL COUNTY

Re: IS 25-0037

Dear Luis Bejarano,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the IS 25-0037 project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

*Formal government to government consultation under California Assembly Bill No. 52 (AB-52).

*Copies of any cultural resource documentation (report and site records) generated in connection with this project.

*A cultural resources inventory of the project area by a qualified archaeologist prior to any development activities in this area.

*A copy of the records search with associated survey reports and site records from the information center.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 413-5836. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Anthony Kline

Anthony Kline
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

03-015-2025-014

January 14, 2026

[VIA EMAIL TO:luisbejarano@co.imperial.ca.us]
Imperial County
Luis Bejarano
801 Main Street
El Centro, CA 92243

RECEIVED
JAN 14 2026
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Re: IS 25-0037

Dear Luis Bejarano,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the IS 25-0037 project. We have reviewed the documents and have the following comments:

*Should human remains be discovered during construction of the proposed project, the project contractor would be subject to either the State law regarding the discovery and disturbance of human remains or the Tribal burial protocol. In either circumstance all destructive activity in the immediate vicinity shall halt and the County Coroner shall be contacted pursuant to State Health and Safety Code §7050.5. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) shall be contacted. The NAHC will make a determination of the Most Likely Descendent (MLD). The City and Developer will work with the designated MLD to determine the final disposition of the remains.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 413-5836. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Anthony Kline

Anthony Kline
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION OFFICE
5401 Dinah Shore Drive
PALM SPRINGS, CA 92264
(760) 699-6800
FAX (760) 699-6924

03-015-2025-014

January 14, 2026

[VIA EMAIL TO:luisbejarano@co.imperial.ca.us]
Imperial County
Luis Bejarano
801 Main Street
El Centro, CA 92243

RECEIVED
JAN 14 2026
IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

Re: IS 25-0037

Dear Luis Bejarano,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the IS 25-0037 project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

> *At this time the concerns of the ACBCI THPO have been addressed and proper mitigation measures have been proposed to ensure the protection of tribal cultural resources. This letter shall conclude our AB52 consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760) 413-5836. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Anthony Kline

Anthony Kline
Cultural Resources Analyst
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

APPLICATION

COUNTY OF IMPERIAL

DEPARTMENT OF PUBLIC WORKS

155 S. 11th Street
El Centro, CA
92243

Tel: (442) 265-1818
Fax: (442) 265-1858

Follow Us:

www.facebook.com/ImperialCountyDPW/

https://twitter.com/CountyDpw/

Public Works works for the Public

ICDPW

October 8, 2025

Mr. Jim Minnick, Planning Director
County of Imperial Planning & Development Services Department
801 Main Street
El Centro, CA 92243

SUBJECT: CEQA IS/MND Review Request for the Brandt Road Bridge Replacement Over the Alamo River, County of Imperial Project No. 7094BRF

Dear Mr. Minnick:

The County was awarded $4 million in federal Community Project Funded Congressional Directed Spending (CPFCDS) program funds for the construction phase of the Brandt Road Bridge Replacement Over the Alamo River, County of Imperial Project No. 7094BRF. The funds are programmed for FY 25/26, and therefore we are scheduled to complete the PS&E package, which includes CEQA clearance, by June 2026.

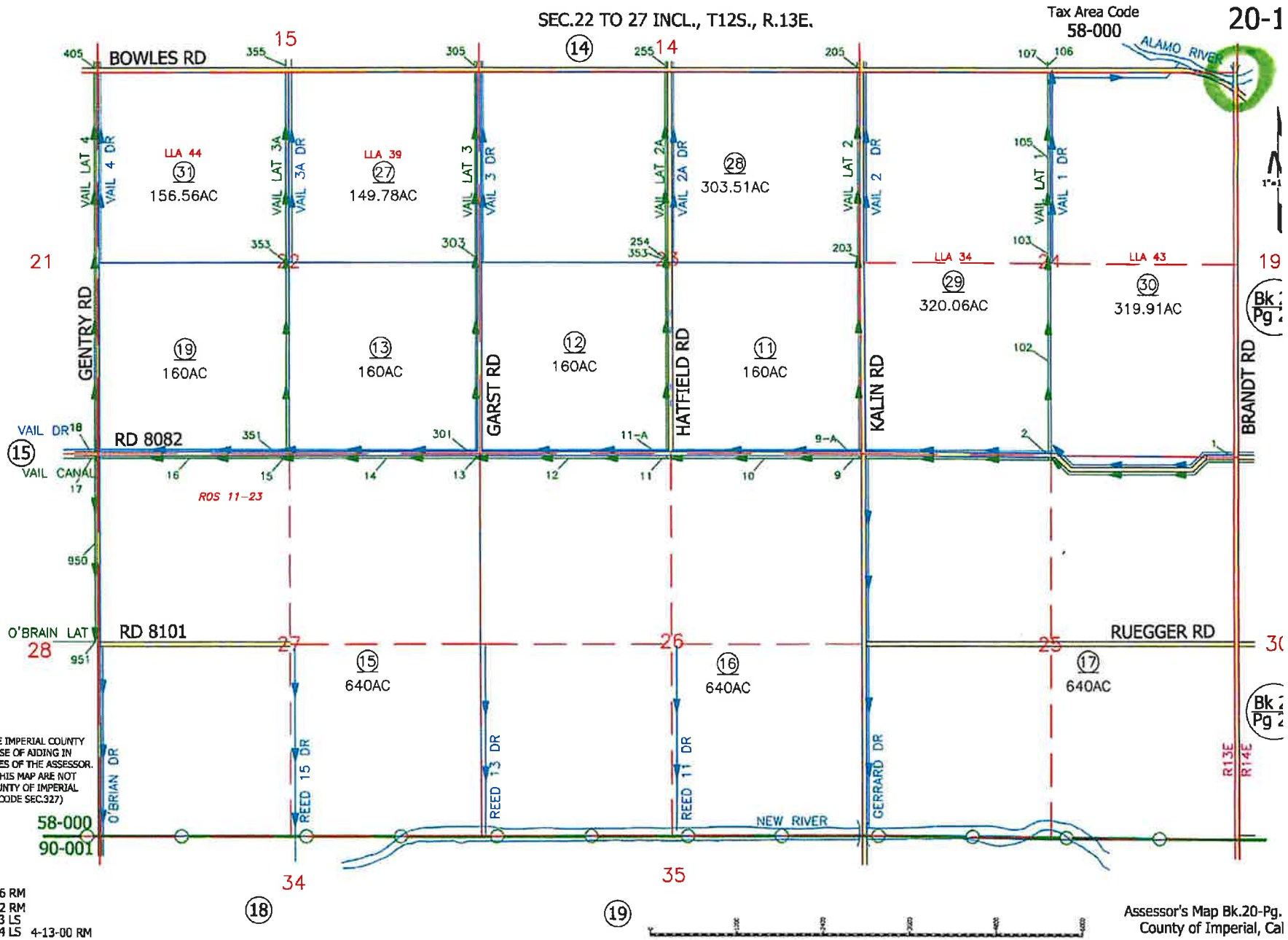
The project proposes the replacement of the existing bridge with a new single-span prestressed concrete bridge. The bridge would be located within the same alignment as the existing two-lane bridge and would consist of 12-ft lanes and 4-ft shoulders. The new bridge will remain at the same grade of the existing bridge; therefore, the improvements will remain within County right-of-way. Staging for construction is also proposed to be within County right-of-way.

Our Department requests the Planning & Development Services Department to review the Draft IS/MND document for the subject project and serve as the lead agency to process for CEQA Clerance. The IS/MND and all corresponding attachments include the formal findings (i.e. environmental impacts, cultural resources, hydrology report, etc.) that show this project would not result in any significant effects on the environment. It is, however, submitted for review and determination.

Should you have any questions or require additional information, please do not hesitate to contact Kelly Burnell, P.E., Principal Bridge Engineer-Kleinfelder, by email KBurnell@kleinfelder.com or by phone at (619) 831-4527. Alternatively, you can also contact Robert Ureña III, P.E., Principal Engineer, by email roberturena@co.imperial.ca.us or by phone at (442) 265-1814. We appreciate your attention to this matter.

Respectfully,

John A. Gay, P.E.
Director of Public Works



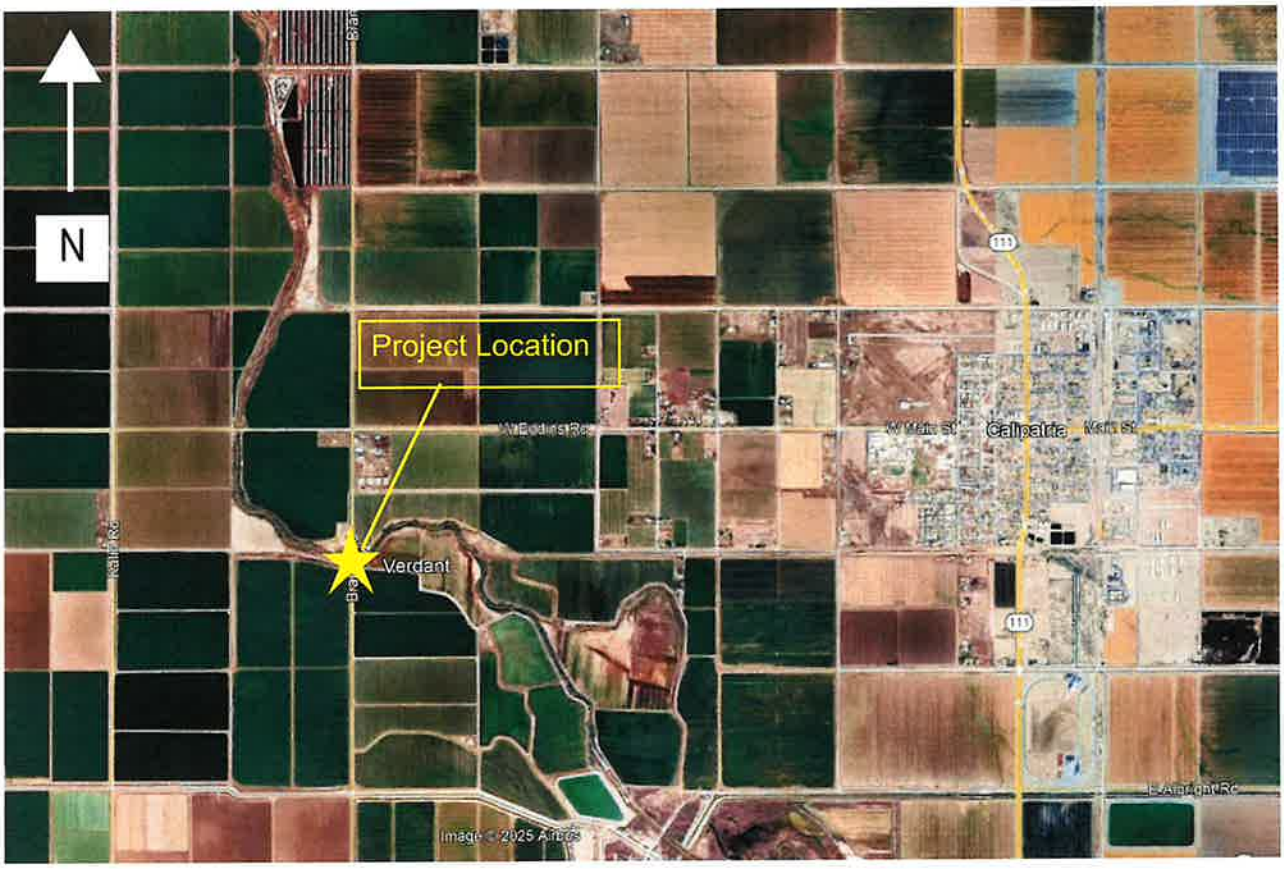
CLAIMER:
IS IS NOT AN OFFICIAL MAP.
IS MAP WAS CREATED FOR THE IMPERIAL COUNTY
ESSOR, FOR THE SOLE PURPOSE OF AIDING IN
E PERFORMANCE OF THE DUTIES OF THE ASSESSOR.
Y ERRORS OR OMISSIONS IN THIS MAP ARE NOT
E RESPONSIBILITY OF THE COUNTY OF IMPERIAL
THE ASSESSOR. (REV. & TAX. CODE SEC.327)

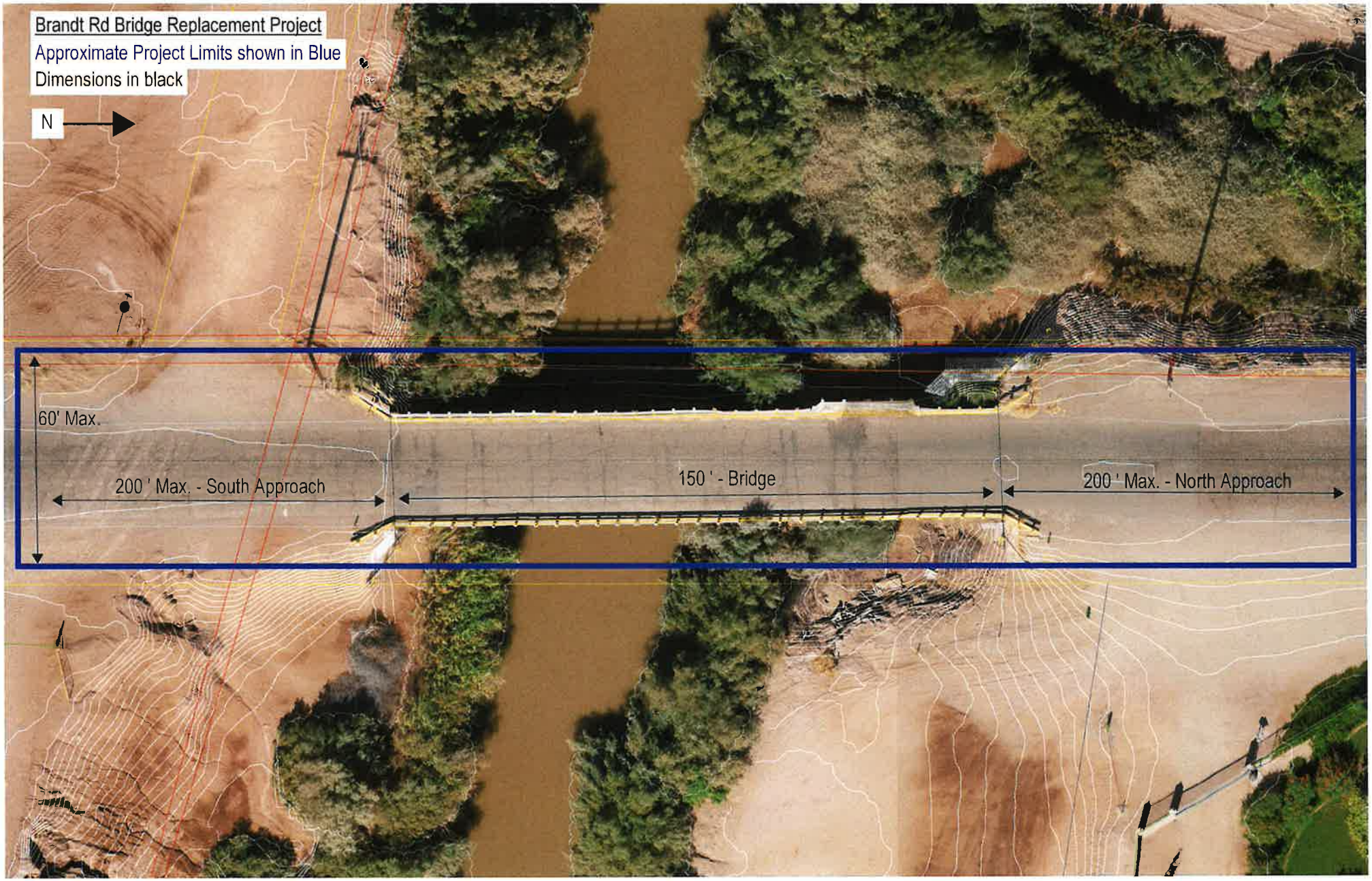
9-20-96 RM
5-12-92 RM
1-13-93 LS
3-24-94 LS 4-13-00 RM

Assessor's Map Bk.20-Pg.
County of Imperial, Cal

Brandt Rd Bridge Replacement Project

Project Location Map




Brandt Rd Bridge Replacement Project
Approximate Project Limits shown in Blue
Dimensions in black
N
60' Max.
200 ' Max. - South Approach
150 ' - Bridge
200 ' Max. - North Approach

COUNTY OF IMPERIAL

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT

EXISTING BRIDGE NO. 58C0165
NEW BRIDGE NO. 58CXXXX
FEDERAL PROJECT NO. CPFL5958(135)
COUNTY PROJECT NO. 7094BRF

BENCHMARK TABLE

BM# / TBM#	ELEVATION	DESCRIPTION
BM#1	796.870'	STANDARD BENCHMARK DISK
TBM#2	TO BE DETERMINED	TO BE DETERMINED
TBM#3	TO BE DETERMINED	TO BE DETERMINED
TBM#4	TO BE DETERMINED	TO BE DETERMINED
TBM#5	TO BE DETERMINED	TO BE DETERMINED

NOTE: ELEVATIONS = NAVD 88 +1000'

CONTRACTOR'S RESPONSIBILITIES

CONTRACTOR WILL PERFORM EXPLORATORY EXCAVATIONS TO LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO ALLOW FOR PLAN REVISIONS IF NECESSARY.

CODES AND REGULATIONS

2024 CALTRANS STANDARD SPECIFICATIONS
2024 CALTRANS STANDARD PLANS

ABBREVIATIONS

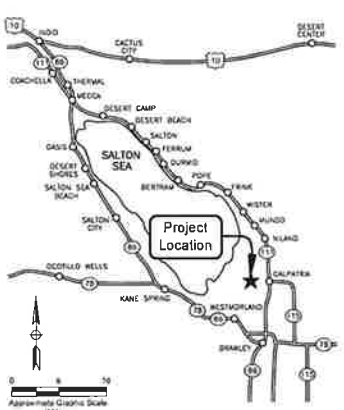
ABBREVIATIONS ARE PER 2024 CALTRANS STANDARD PLANS A3A, A3B, AND A3C UNLESS NOTED OTHERWISE.

DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS. I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE COUNTY OF IMPERIAL IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITIES FOR PROJECT DESIGN.

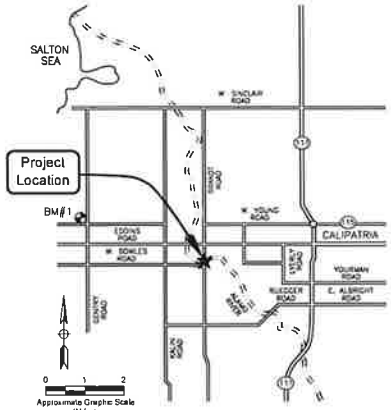
72985

KELLY BURNELL R.C.E. DATE
R.C.E. NO. 72985
REG. EXP. 12/31/26



LOCATION MAP

NO SCALE



VICINITY MAP

NO SCALE

INDEX OF PLANS

SHEET NO.	DESCRIPTION
1	TITLE SHEET, LOCATION AND VICINITY MAPS
2	GENERAL NOTES AND INDEX TO CIVIL PLANS
3	EXISTING CONDITIONS
4	ROADWAY PLAN AND SECTION
5	GRADING PLAN – SOUTHERN ABUTMENT
6	GRADING PLAN – NORTHERN ABUTMENT
7	FINISHED CONTOURS – BRIDGE, ABUTMENTS, AND LANDINGS
8	BRIDGE PROFILE – CENTER–STATIONLINE
9	EROSION AND SEDIMENT CONTROL PLAN
10	EROSION AND SEDIMENT CONTROL DETAILS
11	CIVIL DETAILS
12	TEMPORARY DETOUR TRAFFIC CONTROL PLAN
13 – 35	BRIDGE PLANS

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS THE N00°03'51"E ALONG THE WEST LINE OF SECTION 18, TOWNSHIP 12 SOUTH, RANGE 14 EAST, SAN BERNARDINO MERIDIAN, AND ARE BASED ON A LOCAL COORDINATE SYSTEM ACCORDING TO MAP ON FILE IN BOOK 11, PAGE 1 OF RECORD OF SURVEY IN THE OFFICE OF THE IMPERIAL COUNTY RECORDER.

STATION	NORTHING	EASTING
SW COR SEC 18	1,987,519.463	6,773,233.499
W 1/4 COR SEC 18	1,990,161.731	6,773,236.458

ALAMO RIVER WATERWAY POLLUTED

IMPERIAL COUNTY HEALTH DEPARTMENT HAS STATED THAT THE ALAMO RIVER WATERWAY IS POLLUTED WITH BOTH BIOLOGICAL AND CHEMICAL WASTE. WORKERS WHO ARE TO COME INTO CONTACT WITH THE WATER MUST MAINTAIN IMMUNIZATIONS AGAINST THE FOLLOWING: HEPATITIS A VIRUS, HEPATITIS B VIRUS AND TETANUS. THIS WATERWAY RUNS FROM THE SOUTH (MEXICO) TO NORTH (SALTON SEA) AND HAD BEEN DESIGNATED AS A CLASS 4 WATERWAY BY CALTRANS. A CLASS 4 STATE IS "WATER THAT IS KNOWN TO BE GROSSLY CONTAMINATED BY BIOLOGICAL OR CHEMICAL CONTAMINANTS, OR ANY LEVEL OF RADIOLOGICAL CONTAMINATES". CONTRACTOR SHALL MAKE SURE THAT ALL CONTAMINATED WATER PROTOCOLS ARE FOLLOWED DURING CONSTRUCTION OF THE BRIDGE REPLACEMENT.

GEOTECHNICAL ENGINEER'S STATEMENT

A GEOTECHNICAL REPORT FOR THIS PROJECT WAS PERFORMED BY THE UNDERSIGNED OR UNDER MY SUPERVISION.

THE REPORT TITLED: FOUNDATION PLAN, PLANS, SPECIFICATIONS, AND ESTIMATES (PS&E) PHASE, BRANDT ROAD BRIDGE REPLACEMENT OVER ALAMO RIVER, CALIPATRIA, CALIFORNIA, KLEINFELDER PROJECT NO. 25001840.001A, REPORT NO. SD125R184948, DATED SEPTEMBER 23, 2025.

THESE PLANS HAVE BEEN REVIEWED BY THE UNDERSIGNED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE RECOMMENDATIONS OF THE AFOREMENTIONED PROJECT GEOTECHNICAL REPORT.

ENGINEER'S COMPANY NAME, ADDRESS, AND TELEPHONE NUMBER.

96209

SPENCER FLOYD R.C.E. DATE
R.C.E. NO. 96209
REG. EXP. 09/30/2026

BENCHMARK

THE STATION MARK IS A STANDARD BENCHMARK DISK SET IN THE TOP OF HEADWALL STAMPED "IMP CO SURV L-31 1976". THE STATION IS LOCATED ABOUT 6.1 MILES WEST ALONG EDDINS ROAD FROM THE JUNCTION OF THE SOUTHERN PACIFIC COMPANY RAILROAD AND MAIN STREET IN CALIPATRIA, 61 FEET WEST OF THE CENTERLINE OF GENTRY ROAD, 42 FEET NORTH OF THE EXTENDED CENTERLINE OF EDDINS ROAD, SET IN TOP AND 1 FOOT NORTHEAST OF THE SOUTHWEST CORNER OF THE SOUTHWEST WINGWALL OF A CHECK STRUCTURE, 19 FEET NORTHEAST OF THE CENTER OF DELIVERY GATE 407 IN VAIL LATERAL 4.

ELEVATION: 796.870' (NAVD 88 + 1000')

DIGALERT — DIAL BEFORE YOU DIG — TOLL FREE 811 — TWO WORKING DAYS BEFORE YOU DIG — A PUBLIC SERVICE BY UNDERGROUND SERVICE ALERT

KLEINFELDER
Bright people. Right Solutions.
770 FIRST AVENUE, SUITE 400 SAN DIEGO, CA 92101 (619) 831-4600

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

TITLE SHEET, LOCATION AND VICINITY MAPS

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-933
COUNTY PROJECT NO. 7094BRF
SHEET 1 OF 35

GENERAL NOTES

1. ROAD STRUCTURAL SECTION SHALL BE 4" ASPHALT CONCRETE OVER 18" AGGREGATE BASE OVER 12" SUBGRADE PREPARATION IN ACCORDANCE WITH COUNTY OF IMPERIAL DEPARTMENT OF PUBLIC WORKS ENGINEERING DESIGN GUIDELINES MANUAL FOR THE PREPARATION AND CHECKING OF STREET IMPROVEMENT, DRAINAGE AND GRADING PLANS WITHIN IMPERIAL COUNTY ROAD STRUCTURAL SECTION DWG NO. 440 NOTES.

2. APPROVAL OF THESE IMPROVEMENT PLANS AS SHOWN DOES NOT CONSTITUTE APPROVAL OF ANY CONSTRUCTION OUTSIDE THE PROJECT BOUNDARY.

3. ALL UNDERGROUND UTILITIES WITHIN THE ROAD RIGHT-OF-WAY SHALL BE CONSTRUCTED, CONNECTED AND TESTED PRIOR TO CONSTRUCTION OF BERM AND PAVING.

4. THE EXISTENCE AND LOCATION OF EXISTING UNDERGROUND FACILITIES SHOWN ON THESE PLANS WERE OBTAINED BY SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO OTHER EXISTING FACILITIES EXCEPT AS SHOWN ON THESE PLANS. HOWEVER, THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT ANY EXISTING FACILITY SHOWN HEREON AND ANY OTHER THAT IS NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

5. LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE SHALL BE CONFIRMED BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK. CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF ACTUAL LOCATION OF EXISTING FACILITIES.

6. UTILITIES COORDINATION

   NO LESS THAN 3 WORKING DAYS PRIOR TO ANY EXCAVATION OR TRENCHING, EACH CONTRACTOR DOING SUCH WORK SHALL CONTACT THE FOLLOWING AGENCIES SO THAT EXISTING UNDERGROUND UTILITIES MAY BE LOCATED. THE AGENCY MAY REQUIRE AN INSPECTOR TO BE PRESENT.

1. APPROPRIATE WATER/SEWER UTILITY	N/A
2. IMPERIAL IRRIGATION DISTRICT (POWER)	(800) 339-9380
3. IMPERIAL IRRIGATION DISTRICT (WATER)	(760) 339-9380
4. AT&T	(760) 337-3314 / 337-3358
5. SoCalGas	(909) 335-7982
6. THE CABLE COMPANY (SPECTRUM)	(760) 670-8959

   EXISTING UNDERGROUND UTILITIES

   BEFORE EXCAVATING FOR THIS CONTRACT, VERIFY LOCATION OF UNDERGROUND UTILITIES. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS HAS BEEN OBTAINED FROM AVAILABLE RECORDS ONLY AND MAY NOT REFLECT ALL EXISTING UTILITIES. LOCATION OF ALL EXISTING UTILITIES SHALL BE CONFIRMED BY FIELD MEASUREMENTS BY CONTRACTOR PRIOR TO CONSTRUCTION OF WORK.

   CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.

   ACCURATE VERIFICATION AS TO SIZE, LOCATION AND DEPTH OF EXISTING UNDERGROUND SERVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY. THE CONTRACTOR SHALL NOTIFY THE SOUTHERN CALIFORNIA GAS COMPANY, AT&T, IMPERIAL IRRIGATION DISTRICT AND ANY OTHER AFFECTED UTILITY AGENCIES PRIOR TO STARTING HIS WORK NEAR SUCH UTILITY FACILITIES AND SHALL COORDINATE HIS WORK WITH UTILITY REPRESENTATIVES. FOR LOCATION OF UNDERGROUND UTILITIES AND APPURTENANCES, CONTACT "UNDERGROUND SERVICE ALERT" AT 811 (FORMERLY 1-800-422-4133).

7. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE UTILITY AGENCIES, ADVISE THEM OF THE PROPOSED IMPROVEMENTS AND BEAR THE COST OF RELOCATIONS, IF NEEDED.

8. NO PAVING SHALL BE DONE UNTIL EXISTING POWER POLES ARE RELOCATED OUTSIDE THE AREAS TO BE PAVED.

9. ALL SIGNS TO BE ALUMINUM WITH 3M HIGH INTENSITY TYPE REFLECTIVE FACE OR EQUIVALENT.

10. CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY STRIPING, PAVEMENT MARKERS, OR LEGENDS OBLITERATED BY THE CONSTRUCTION OF THIS PROJECT.

11. NO REVISIONS OF ANY KIND SHALL BE MADE TO THESE PLANS WITHOUT THE PRIOR WRITTEN APPROVAL OF BOTH THE COUNTY ENGINEER (OR HIS REPRESENTATIVE) AND THE ENGINEER OF RECORD. A REPRODUCIBLE AS-BUILT PLAN SET WILL BE PROVIDED TO THE PUBLIC WORKS DEPARTMENT AS A CONDITION OF SUBSTANTIAL CONSTRUCTION COMPLETION AND PRIOR TO ACCEPTANCE.

12. ALL WORK AND MATERIALS SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS, THE IMPERIAL COUNTY DEPARTMENT OF PUBLIC WORKS STANDARDS, ANY REFERENCED STANDARDS AND SPECIFICATIONS AND THE SPECIFICATIONS & THE REQUIREMENTS OF THE AGENCIES REFERRED TO HEREIN. ALL WORK SHOWN OR INDICATED BY THESE PLANS SHALL BE COMPLETED IN ACCORDANCE WITH THE STANDARDS, POLICIES AND REGULATIONS OF IMPERIAL COUNTY: WHERE, OR IF, CONFLICTS OCCUR, THEN THE IMPERIAL COUNTY REQUIREMENTS SHALL GOVERN.

13. UNLESS SPECIFICALLY INDICATED OTHERWISE METHODS EMPLOYED AND MATERIAL USED IN THE CONSTRUCTION OF ALL OFFSITE IMPROVEMENTS SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE "STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS 2024 EDITION." ALL WORK IS SUBJECT TO INSPECTION AND APPROVAL AS REQUIRED.

14. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AN EXCAVATION PERMIT FROM THE STATE OF CALIFORNIA DIVISION OF SAFETY AND TO ADHERE TO ALL PROVISIONS OF THE STATE CONSTRUCTION SAFETY ORDERS AND STANDARDS.

15. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A GENERAL CONSTRUCTION ACTIVITY STORM WATER PERMIT FROM THE STATE WATER RESOURCES CONTROL BOARD DIVISION OF WATER QUALITY. CONTACT "STATE WATER RESOURCES CONTROL BOARD, DIVISION OF WATER QUALITY, ATTENTION: STORM WATER PERMIT UNIT, P.O. BOX 100, SACRAMENTO, CALIFORNIA, 95812-0100."

16. CONSTRUCTION PROJECTS DISTURBING MORE THAN ONE ACRE MUST OBTAIN A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT. THE COUNTY IS REQUIRED TO FILE A NOTICE OF INTENT (NOI) WITH THE STATE WATER RESOURCES CONTROL BOARD.

17. TEMPORARY TRAFFIC CONTROL DEVICE SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE "MUTCD" OR AS DIRECTED BY THE IMPERIAL COUNTY ENGINEER.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SURVEY MONUMENTS, CORNER ACCESSORIES AND/OR BENCHMARKS WITHIN THE LIMITS OF WORK. IN ACCORDANCE WITH THE PROFESSIONAL LAND SURVEYORS' ACT (CHAPTER 15 OF THE CALIFORNIA BUSINESS AND PROFESSIONS CODE), SUCH OBJECTS WITHIN THE LIMITS OF WORK THAT MAY BE DISTURBED OR DESTROYED BY CONSTRUCTION SHALL BE REFERENCED BY A PERSON AUTHORIZED TO PRACTICE LAND SURVEYING AND A CORNER RECORD (OR RECORD OF SURVEY) SHOWING SAID REFERENCES SHALL BE FILED WITH THE COUNTY SURVEYOR PRIOR TO CONSTRUCTION. ANY MONUMENT, CORNER ACCESSORY, OR BENCHMARK THAT IS DISTURBED OR DESTROYED BY CONSTRUCTION SHALL BE REPLACED WITH APPROPRIATE MONUMENTATION BY A PERSON AUTHORIZED TO PRACTICE LAND SURVEYING AND A CORNER RECORD (OR RECORD OF SHALL BE FILED PRIOR TO PROJECT COMPLETION).

19. DUST SHALL BE CONTROLLED BY THE CONTRACTOR IN ACCORDANCE WITH ALL IMPERIAL COUNTY AIR POLLUTION CONTROL DISTRICT (APCD) FUGITIVE DUST CONTROL RULES AND REGULATIONS AND SHALL COMPLY WITH THEIR PERMITTING REQUIREMENTS, IF APPLICABLE.

20. IMPORT MATERIAL SHALL BE OBTAINED FROM A LEGAL SITE.

21. ALL MAJOR SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT OR FILL FACES TO NATURAL GROUND AND ABUTTING CUT OR FILL SURFACES.

22. NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE GRADING ORDINANCE AND NOTWITHSTANDING THE APPROVAL OF THESE PLANS, THE PERMITTEE IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY SUCH PROPERTY FROM SETTLING, CRACKING, EROSION SILTING, SCOUR OR OTHER DAMAGE, WHICH MIGHT RESULT FROM THE IMPROVEMENTS DESCRIBED ON THESE PLANS. THE COUNTY WILL HOLD THE CONTRACTOR RESPONSIBLE FOR CORRECTION OF NON-DEDICATED IMPROVEMENTS WHICH DAMAGE ADJACENT PROPERTY.

23. SPECIAL CONDITION: IF ANY ARCHEOLOGICAL RESOURCES ARE DISCOVERED ON THE SITE OF THESE IMPROVEMENTS OPERATION, SUCH OPERATION WILL CEASE IMMEDIATELY AND THE PERMITTEE WILL NOTIFY THE DIRECTOR OF THE PLANNING & DEVELOPMENT SERVICES DEPARTMENT AND THE DISCOVERY. IMPROVEMENT OPERATION WILL NOT RECOMMENCE UNTIL THE CONTRACTOR HAS RECEIVED WRITTEN AUTHORITY FROM THE DIRECTOR OF PLANNING & DEVELOPMENT SERVICES TO DO SO.

24. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT EDITION UNIFORM BUILDING CODE CHAPTER 33 SAFEGUARDS DURING CONSTRUCTION.

25. ALL SURVEY MONUMENTS SHALL BE CLEARLY DELINEATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION IMPROVEMENTS. SEE NOTE NO. 18.

26. PRIOR TO AND DURING IMPROVEMENTS CONSTRUCTION OPERATIONS, TEMPORARY CONSTRUCTION SITE BEST MANAGEMENT PRACTICE DEVICES (BMP) SHALL BE INSTALLED AND MAINTAINED TO PREVENT DAMAGE TO CONTIGUOUS PROPERTIES. SEE EROSION CONTROL PLAN ON SHEETS 9 AND 10.

27. NO FILL SHALL BE PLACED ON EXISTING GROUND UNTIL THE EXISTING GROUND HAS BEEN CLEARED OF WEEDS, DEBRIS, TOPSOIL AND OTHER DELITERIOUS MATERIAL.

28. THE MAXIMUM ALLOWABLE CUT AND FILL SLOPES ARE 2:1, UNLESS A SLOPE STABILITY ANALYSIS AUTHORIZES A STEEPER SLOPE AND HAS BEEN APPROVED.

29. NO OBSTRUCTION OF FLOOD PLAINS OR NATURAL WATER COURSES WILL BE PERMITTED.

30. ALL EXISTING DRAINAGE COURSES AND THE PROJECT SITE MUST CONTINUE TO FUNCTION DURING STORM CONDITIONS. PROTECTIVE MEASURES AND TEMPORARY DRAINAGE PROVISIONS MUST BE USED TO PROTECT CONTIGUOUS PROPERTIES DURING IMPROVEMENTS CONSTRUCTION OPERATIONS.

31. A CALIFORNIA REGISTERED PROFESSIONAL CIVIL ENGINEER SHALL SUBMIT A WRITTEN CERTIFICATION TO THE PUBLIC WORKS DEPARTMENT THAT THE FINAL IMPROVEMENTS HAVE BEEN COMPLETED IN ACCORDANCE WITH THESE APPROVED PLANS ALONG WITH A-BUILT PLANS. THE FOLLOWING STATEMENT SHALL BE ADDED TO AS-BUILT PLANS:

    RECORD PLAN DECLARATION OF RESPONSIBLE CHARGE OF RECORD ENGINEER (FOR AS BUILTS)

    I HEREBY DECLARE THAT AS THE ENGINEER OF RESPONSIBLE CHARGE OF THE RECORD PLANS FOR THIS PROJECT, I HAVE REVIEWED THE NOTED, AND COUNTY APPROVED CONSTRUCTION CHANGES, I HAVE OBSERVED THE COMPLETED CONSTRUCTION OF THE ENGINEERING WORK AS SHOWN ON THE RECORD PLANS, AND REVIEWED THE CONTRACTOR'S RECORD OF ANY CHANGES MADE DURING CONSTRUCTION. BASED ON MY OBSERVATION AND REVIEW, IT IS MY OPINION THAT THE COMPLETED CONSTRICTION IS IN SUBSTANTIAL CONFORMANCE WITH THE RECORD PLANS.

    I CERTIFY THAT ALL CHANGES AND/OR ADDITIONS MADE DURING CONSTRUCTION, AS DOCUMENTED BY THE CONTRACTOR'S RECORDS AND PROVIDED TO ME, HAVE BEEN INCORPORATED INTO THE RECORD PLANS.

KLEINFELDER
770 FIRST AVE STE 400, SAN DIEGO, CA 92101
(619) 831-4600

DON BLOODWORTH
R.C.E. No. 60954
REG. EXP. 12/31/26

DATE: XX/XX/XXX

SHEET LIST TABLE (CIVIL)		
SHEET NO.	SHEET LABEL	SHEET TITLE
2	C-001	GENERAL NOTES AND INDEX TO CIVIL PLANS
3	C-101	EXISTING CONDITIONS
4	C-201	ROADWAY PLAN AND SECTION
5	C-202	GRADING PLAN - SOUTHERN ABUTMENT
6	C-203	GRADING PLAN - NORTHERN ABUTMENT
7	C-204	FINISHED CONTOURS - BRIDGE, ABUTMENTS, AND LANDINGS
8	C-205	BRIDGE PROFILE - CENTER-STATIONLINE
9	C-301	EROSION AND SEDIMENT CONTROL PLAN
10	C-302	EROSION AND SEDIMENT CONTROL DETAILS
11	C-401	CIVIL DETAILS
12	C-501	TEMPORARY DETOUR TRAFFIC CONTROL PLAN

ABBREVIATIONS:

AGT	APPROACH GUARDRAIL TRANSITION	LF	LINEAR FOOT
BB	BEGIN BRIDGE	MGS	MIDWEST GUARDRAIL SYSTEM
BMP	BEST MANAGEMENT PRACTICE	MIN	MINIMUM
CY	CUBIC YARD	NO.	NUMBER
CL	CENTERLINE	PROP	PROPOSED
DTL	DETAIL	R/W	RIGHT-OF-WAY
EB	END BRIDGE	SFR	SINGLE FAMILY RESIDENCE
ELEV	ELEVATION	SFT	SQUARE FEET
EXIST	EXISTING	STA	STATION
FG	FINISHED GROUND	STD	STANDARD
		TYP	TYPICAL

LEGEND

- OVERHEAD ELECTRIC (EXIST)
- TELECOM LINE (EXIST)
- T — TELECOM LINE (PROP)
- RIGHT-OF-WAY
- CENTERLINE (ROAD/BRIDGE)
- MAJOR CONTOUR, 5FT (EXIST)
- MINOR CONTOUR, 1FT (EXIST)
- XX — MAJOR CONTOUR, 5FT (PROP)
- XX — MINOR CONTOUR, 1FT (PROP)
- // — DAYLIGHT LINE (GRADING)
- GUARDRAIL (MGS OR AGT)
- TEMPORARY FIBER ROLL
- EARTHEN DITCH
- PAVEMENT EXTENSION JOINT
- LANDING REPLACEMENT
- REINFORCED CONCRETE PIPE
- RETAINING/WING WALL
- RETURN WALL
- DRAINAGE INLET GRATE

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REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:

DON BLOODWORTH, P.E. — 60954 R.C.E. No. — 12/31/26 REG. EXP.

DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — 09/30/27 REG. EXP.

DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DESIGNED: M.MIER
DRAWN: AS SHOWN
CHECKED: D. BLOODWORTH

GENERAL NOTES AND INDEX TO CIVIL PLANS

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

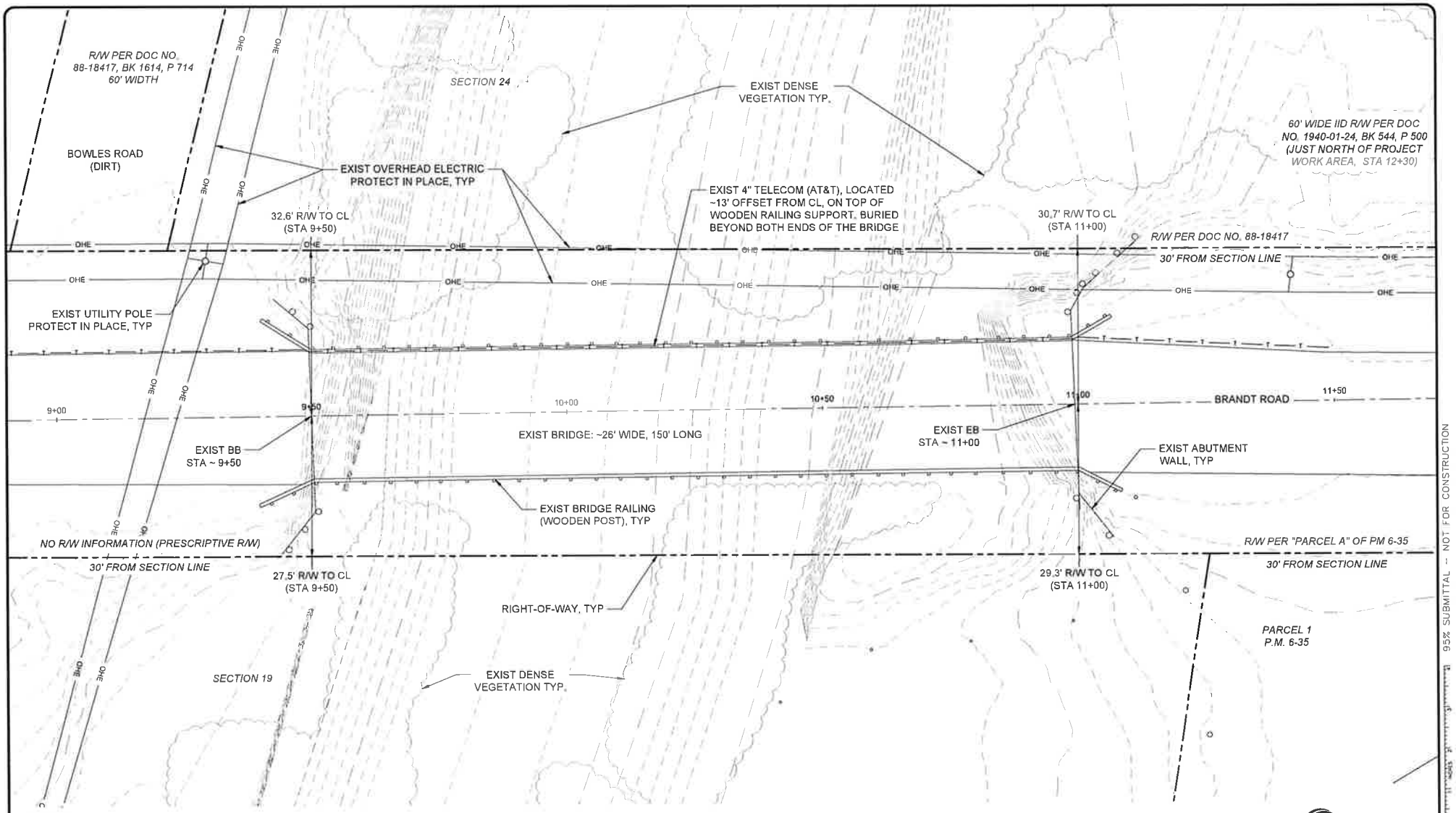
COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRF

C-001

SHEET 2 OF 35

FILE PATH: C:\pwworking\kleinfelderpw01\rspiper@kleinfelder.com\d0250992\02_Index to Civil Plans.dwg

PLOT DATE: 10/2/2025 11:59 AM



SURVEY NOTE

TOPOGRAPHICAL FIELD SURVEY, AERIAL SURVEY, AND GROUND CONTROL (INCLUDING RIGHT-OF-WAY) CONDUCTED IN OCTOBER 2025 BY DYNAMIC CONSULTING ENGINEERS, 2415 IMPERIAL BUSINESS PARK DRIVE, SUITE B IMPERIAL CA 92251

DRAFTING NOTE

FOR CLARITY, EXISTING LINEWORK (BRIDGE, UTILITIES, VEGETATION) PRESENTS DARKER ON THIS SHEET. LINEWORK IS GRAY ON REMAINING CIVIL SHEETS, PER LEGEND ON C-001.

SCALE: 1" = 8' | SCALE IN FEET

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
DON BLOODWORTH, P.E. — 50954 R.C.E. No. — DATE — 12/31/26 REG. EXP.

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JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DRAWN: M. PIPER
CHECKED: AG SHAHIN
SUBMITTED: D. BLOODWORTH

EXISTING CONDITIONS

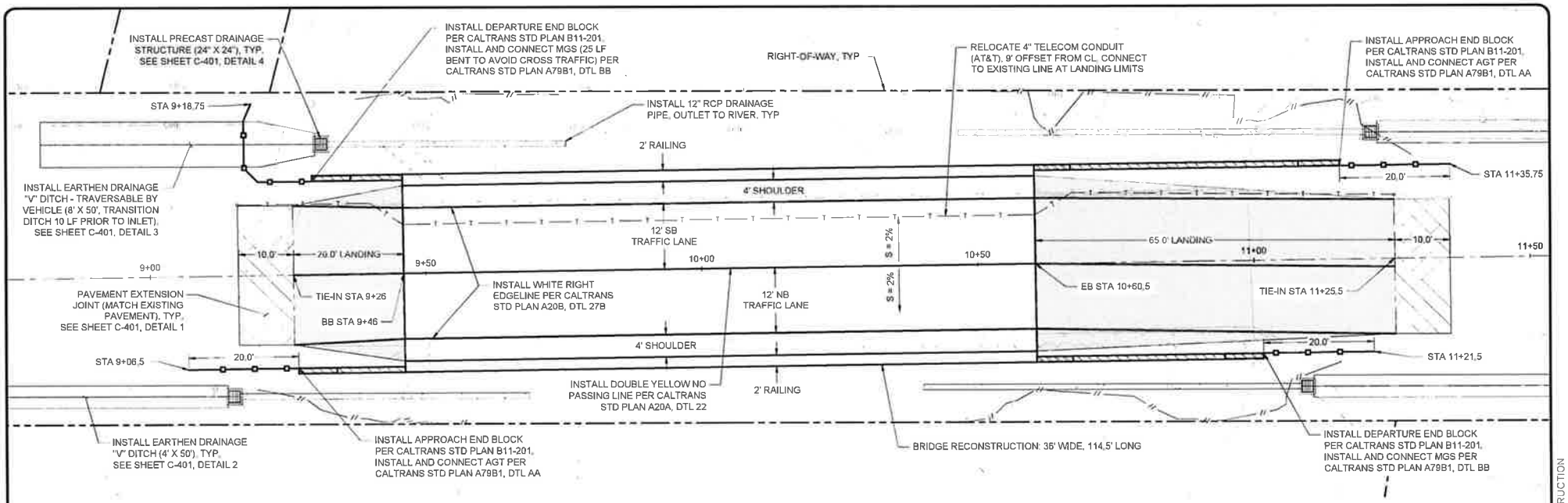
BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRF

C-101
SHEET 3 OF 35

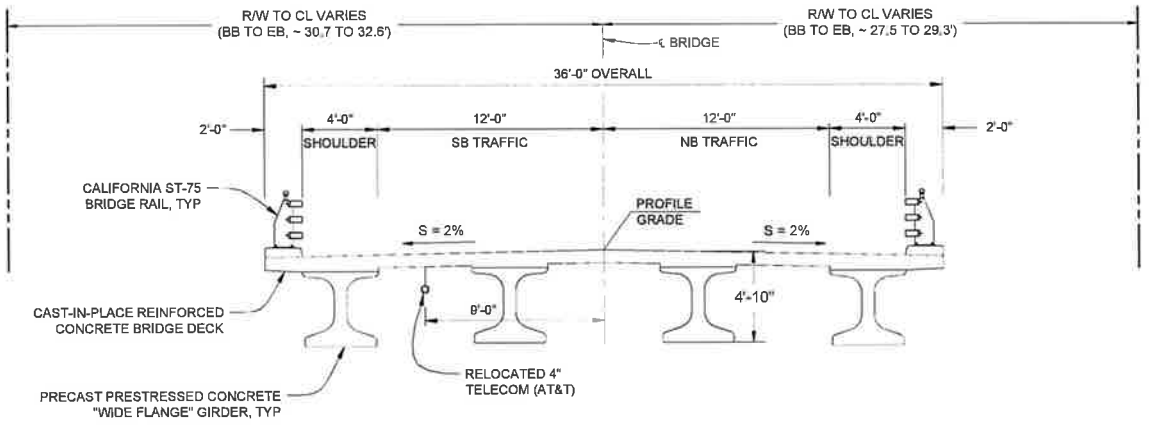
ORIGINAL SCALE: 95% SUBMITTAL -- NOT FOR CONSTRUCTION

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PLAN VIEW

SCALE 1" = 5 — SCALE IN FEET



TYPICAL SECTION

SCALE 1" = 3' — SCALE IN FEET

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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
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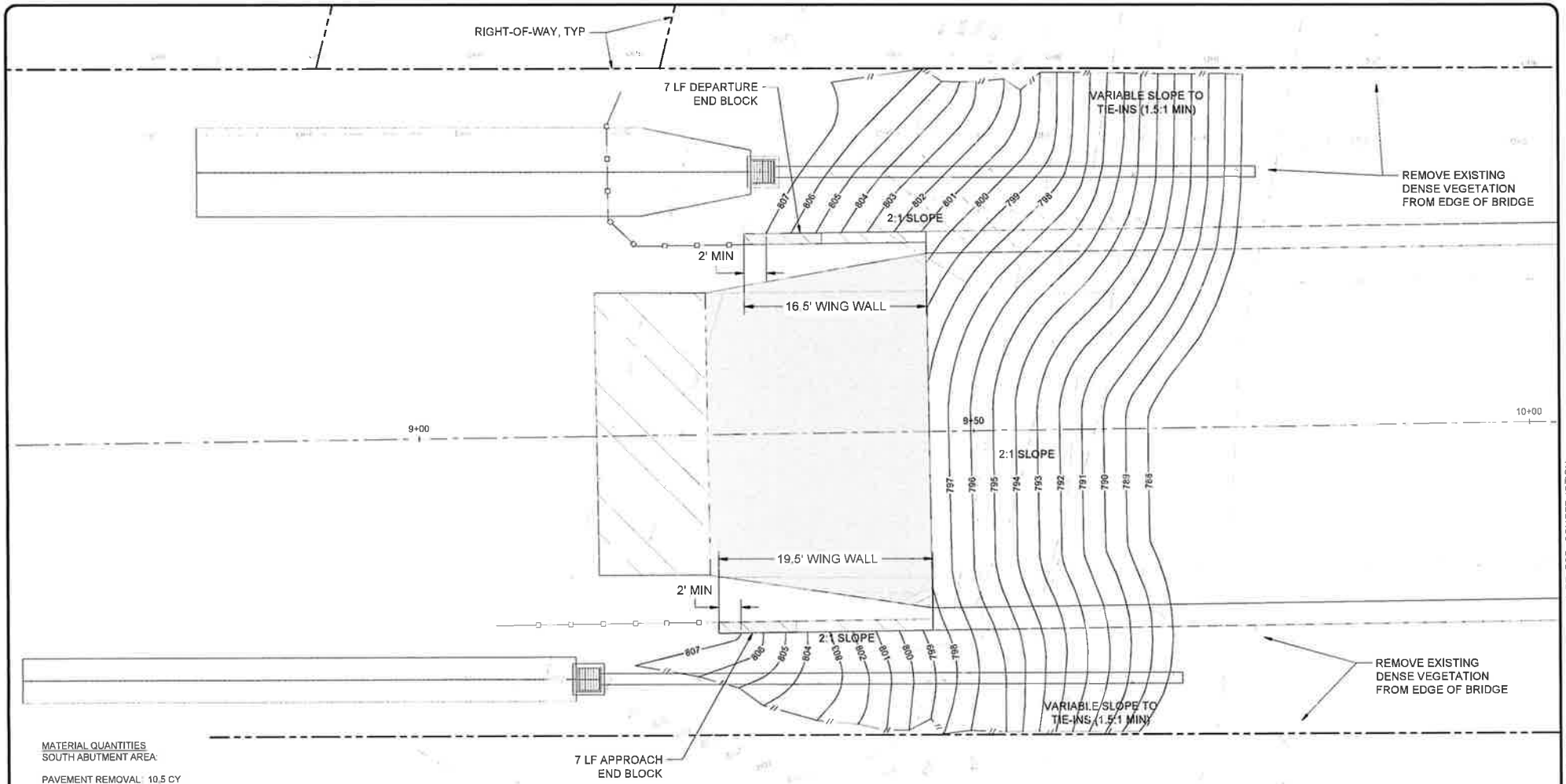
ROADWAY PLAN AND SECTION

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0185

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 70948RF
C-201
SHEET 4 OF 35

ORIGINAL SCALE: 95% SUBMITTAL — NOT FOR CONSTRUCTION

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MATERIAL QUANTITIES
SOUTH ABUTMENT AREA:

PAVEMENT REMOVAL: 10.5 CY
HOT MIX ASPHALT: 15.5 TON
AGGREGATE BASE: 36 CY

EARTHWORK:
CUT: 125 CY
FILL: 1 CY
NET: 124 CY (CUT)
GRADED AREA 700 SFT

NOTE:
QUANTITIES ABOVE ARE APPROXIMATIONS ONLY.
CUT/FILL FACTOR HAS NOT YET BEEN APPLIED.

SCALE 1" = 4' SCALE IN FEET

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

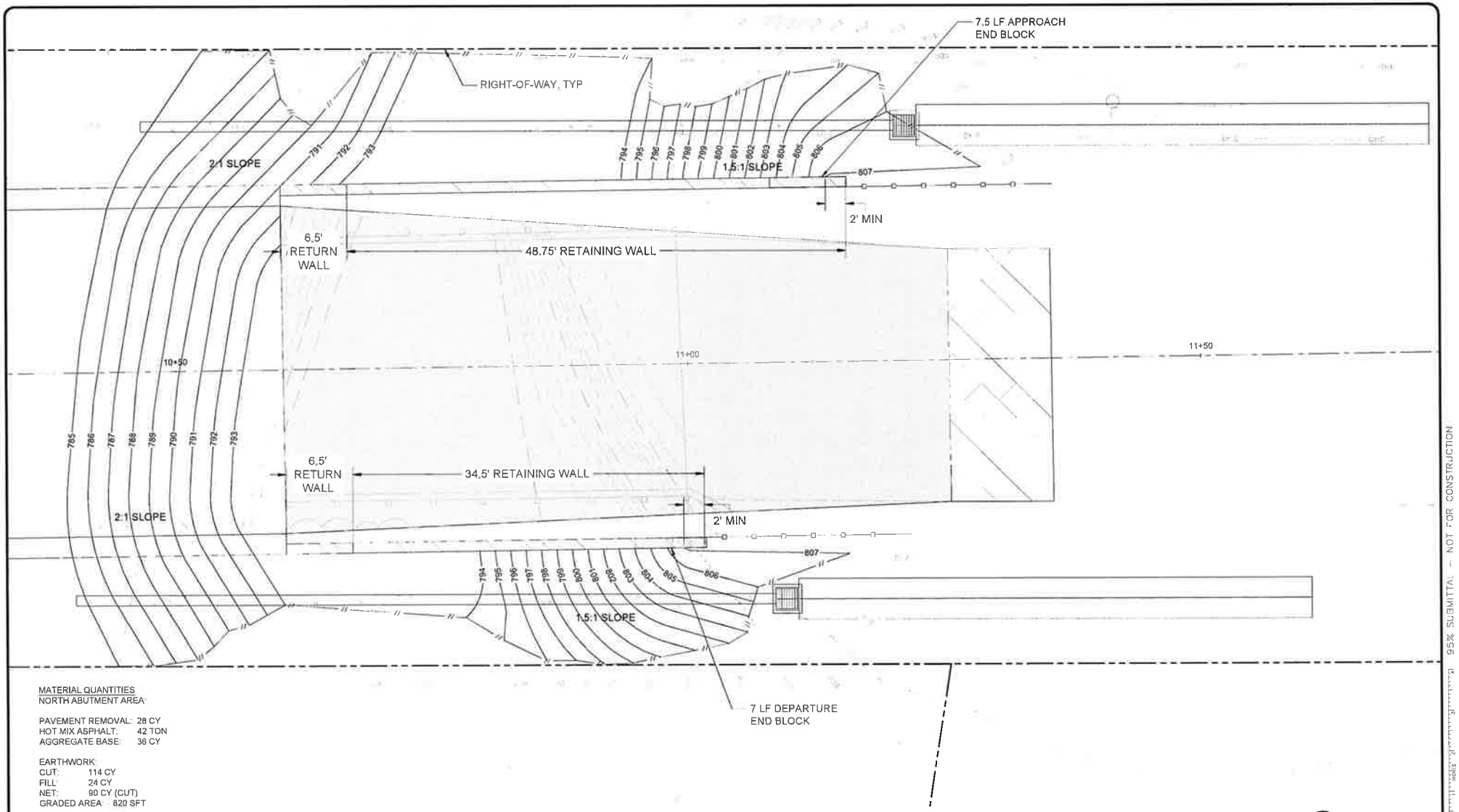
GRADING PLAN - SOUTHERN ABUTMENT

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRF
C-202
SHEET 5 OF 35

ORIGINAL SCALE: 95% SUBMITTAL — NOT FOR CONSTRUCTION

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MATERIAL QUANTITIES
NORTH ABUTMENT AREA

PAVEMENT REMOVAL: 28 CY
HOT MIX ASPHALT: 42 TON
AGGREGATE BASE: 36 CY

EARTHWORK
CUT: 114 CY
FILL: 24 CY
NET: 90 CY (CUT)
GRADED AREA: 820 SFT

NOTE:
QUANTITIES ABOVE ARE APPROXIMATIONS ONLY.
CUT/FILL FACTOR HAS NOT YET BEEN APPLIED.

SCALE 1" = 4' SCALE IN FEET

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. — 62028 R.C.E. No. — DIRECTOR OF PUBLIC WORKS — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

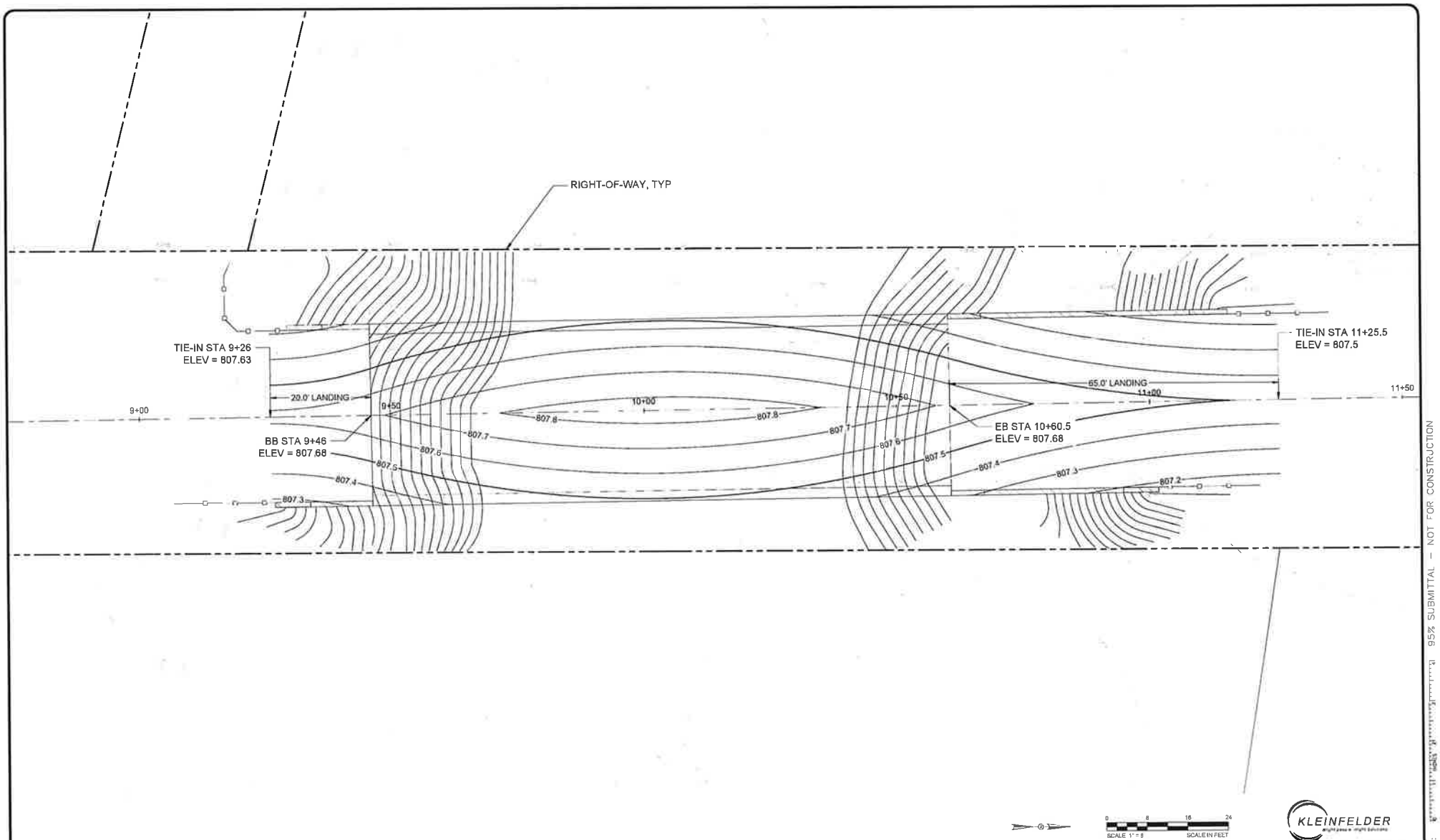
GRADING PLAN - NORTHERN ABUTMENT

BRANDT ROAD BRIDGE OVER ALAMO
RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRF
C-203
SHEET 6 OF 35

ORIGINAL SCALE: 0" 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" — 95% SUBMITTAL — NOT FOR CONSTRUCTION

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
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JOHN A. GAY, P.E.
DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE	9/30/2025
DESIGN	R. PIPER
DRAWN	AA BHDAN
CHECKED	D. BLOODWORTH

FINISHED CONTOURS - BRIDGE ABUTMENTS AND LANDINGS

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

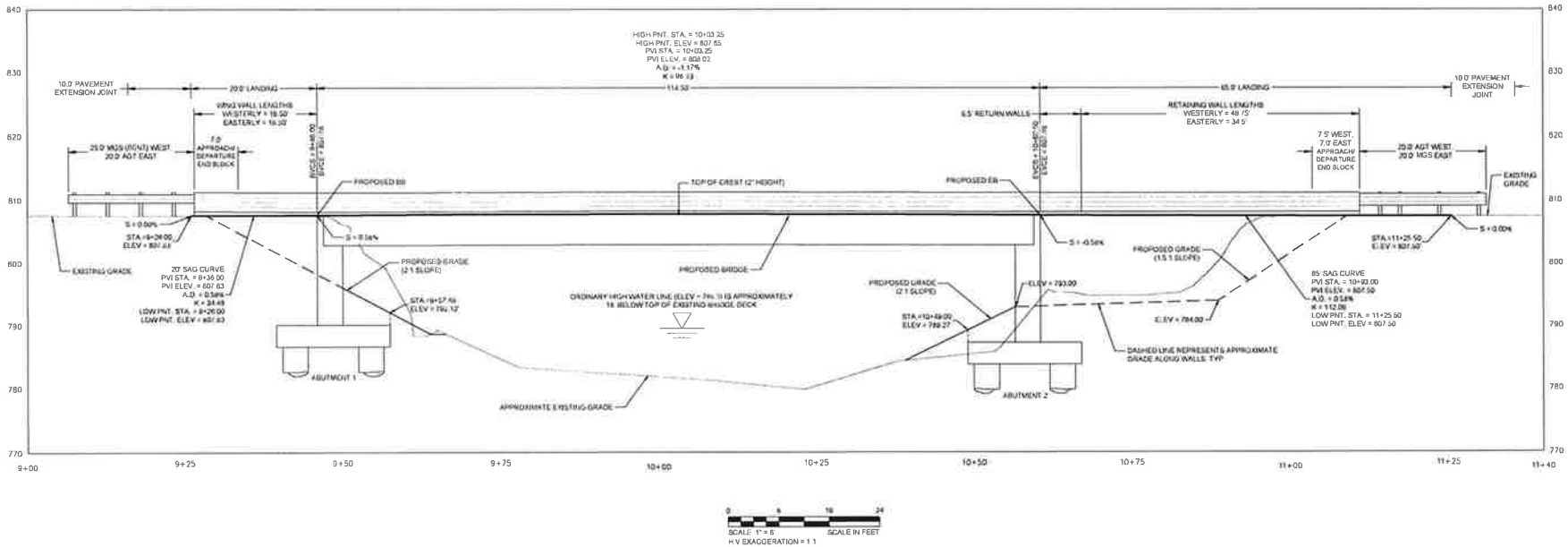
COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRF

C-204

SHEET 7 OF 35

ORIGINAL SCALE: 1" = 8" — 95% SUBMITTAL — NOT FOR CONSTRUCTION

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DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62039 R.C.E. No. — 09/30/27 REG. EXP.

DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE: 9/30/2025
DRAWN: R. PIPER
CHECKED: AS SHOWN
LINE LAYER: D. BLOODWORTH

BRIDGE PROFILE + CENTERLINE STATIONLINE

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

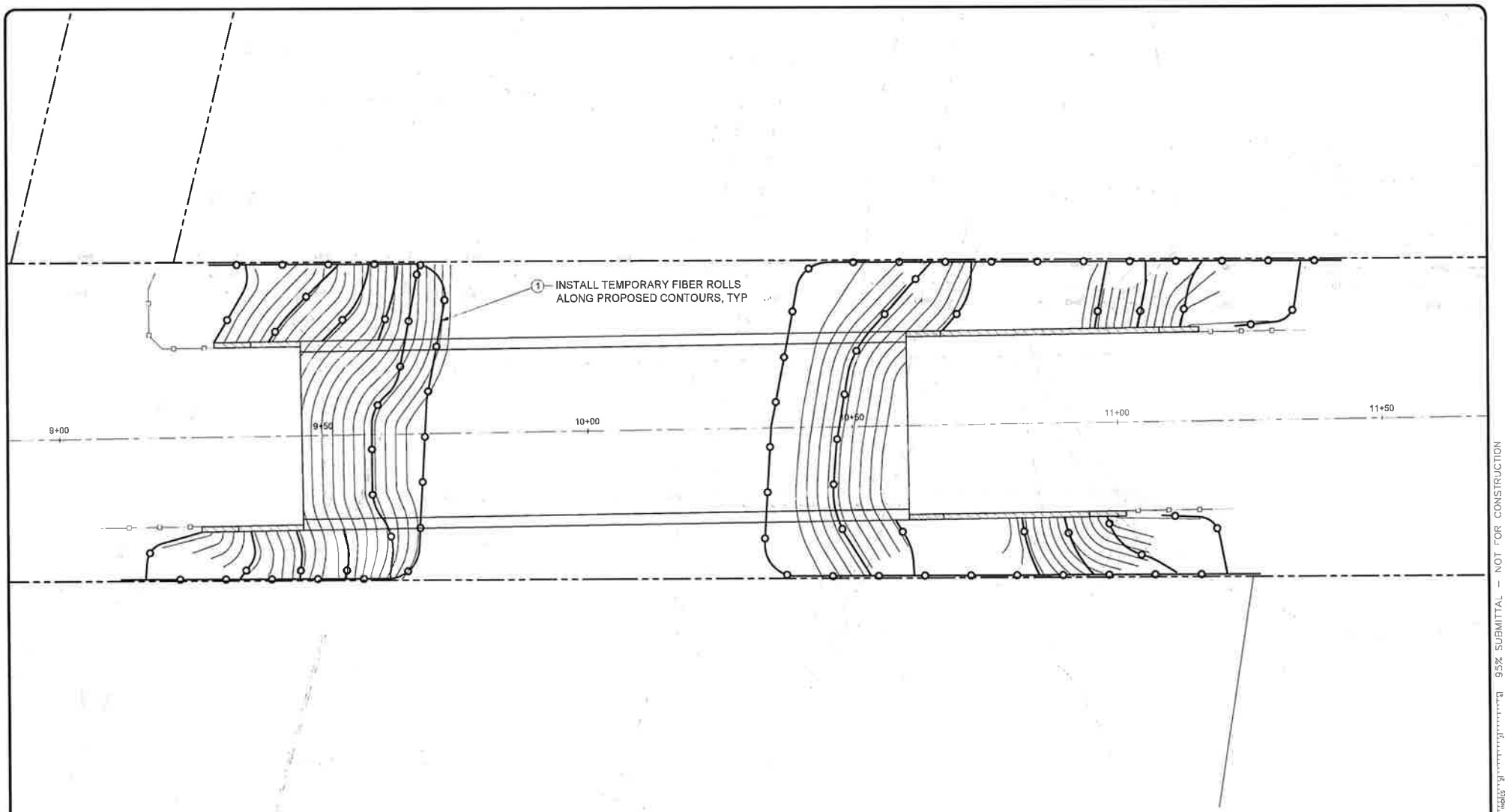
COUNTY REFERENCE NO. B-293
COUNTY PROJECT NO. 7094BRF

C-205

SHEET 8 OF 35

ORIGINAL SCALE: 0 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" — 95% SUBMITTAL — NOT FOR CONSTRUCTION

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BMP TABLE						
BMP ID#	BMP TYPE	SYMBOL	CALTRANS BMP MANUAL NO.	QUANTITY	INSPECTION FREQUENCY	MAINTENANCE FREQUENCY
1	TEMPORARY FIBER ROLL	—o—	SC-5	790 LF	SC-5	SC-5

SCALE 1" = 8' SCALE IN FEET

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF
DON BLOODWORTH, P.E. 60854 R.C.E. No.
DATE 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. 62028 R.C.E. No.
DIRECTOR OF PUBLIC WORKS
DATE 09/30/27 REG. EXP.

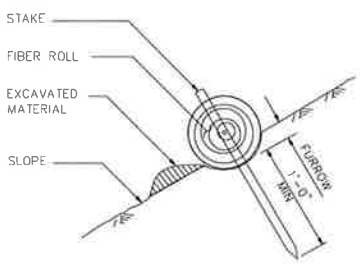
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

EROSION AND SEDIMENT CONTROL PLAN

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

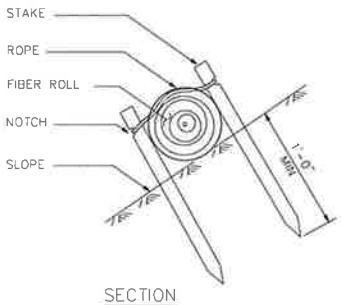
COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 70HBRF
C-301
SHEET 9 OF 35

ORIGINAL SCALE: 0" 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" 12" 13" 14" 15" 16" 17" 18" 19" 20" 21" 22" 23" 24" 25" 26" 27" 28" 29" 30" 31" 32" 33" 34" 35" 36" 37" 38" 39"

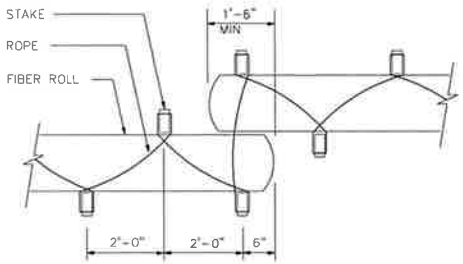


SECTION

TEMPORARY FIBER ROLL (TYPE 1)

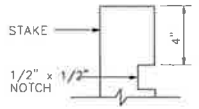


SECTION



PLAN

TEMPORARY FIBER ROLL (TYPE 2)

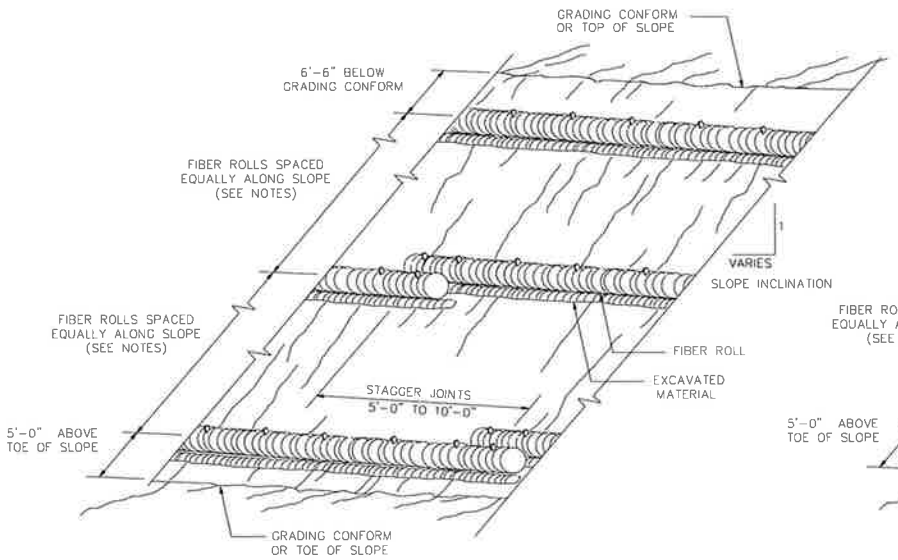


ELEVATION

STAKE NOTCH DETAIL

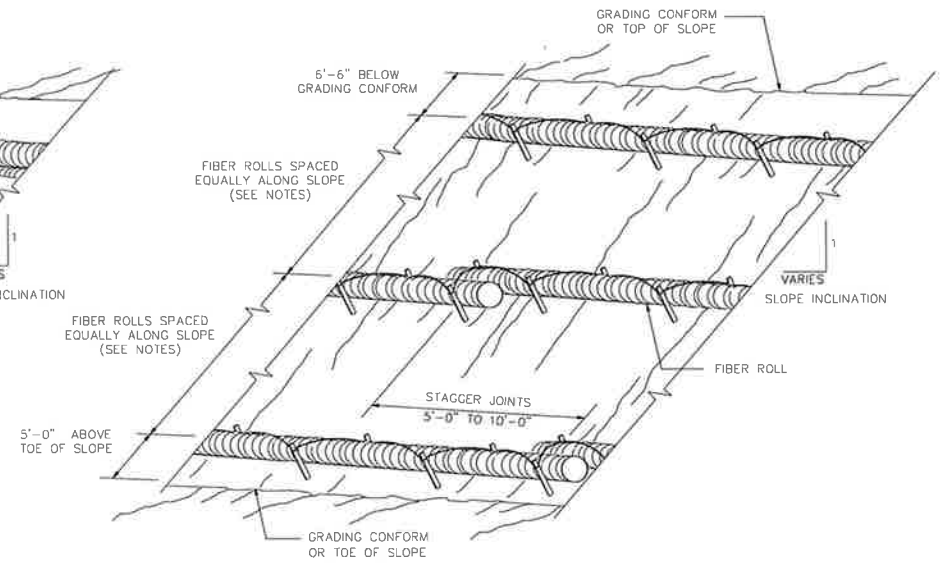
NOTES:

1. INSTALL FIBER ROLLS PER CALTRANS CONSTRUCTION BMP MANUAL, SECTION SC-5.
2. TEMPORARY FIBER ROLL SPACING VARIES DEPENDING UPON SLOPE INCLINATION.
3. INSTALLATIONS SHOWN IN THE PERSPECTIVES ARE FOR SLOPE INCLINATION OF 10:1 AND STEEPER.



PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 1)



PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 2)

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REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
DON BLOODWORTH P.E. — 60954 R.C.E. No. — DATE — 12/31/25 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT
APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. — 82038 R.C.E. No. — DIRECTOR OF PUBLIC WORKS — DATE — 06/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE: 8/30/2025
DRAWN: S. PIPER
SUBMITTED: AS SHOWN
DESIGNED: D. BLOODWORTH

EROSION AND SEDIMENT CONTROL DETAILS

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

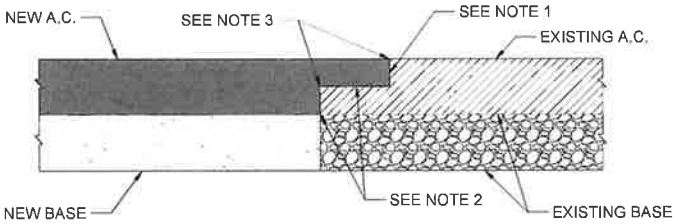
COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRF

C-302

SHEET 10 OF 35

ORIGINAL SCALE: 95% SUBMITTAL — NOT FOR CONSTRUCTION

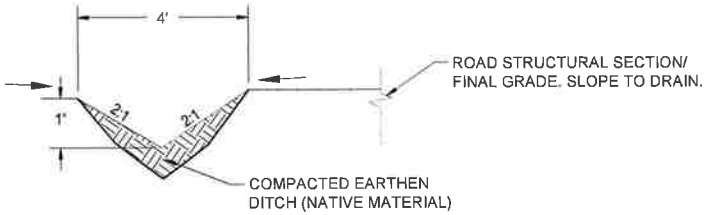
FILE PATH: C:\pwworking\kleinfelderpw01\rspiper@kleinfelder.com\d0250992\10_Erosion Control Details.dwg PLOT DATE: 10/2/2025 12:40 PM



NOTES:

1. GRIND 10' WIDE X 0.20' DEEP HEADER FULL LENGTH OF JOIN.
2. TACK COAT ENTIRE SURFACE WITH AR 1000 PAVING ASPHALT AT AN APPROXIMATE RATE OF 0.05 GALLON PER SQUARE YARD OR GRADE SS-1H EMULSIFIED ASPHALT AT AN APPROXIMATE RATE OF 0.05 TO 0.01 GALLON, GALLON PER SQUARE YARD SHALL BE UNIFORMLY APPLIED UPON THE EXISTING PAVEMENT PRECEDING THE PLACEMENT OF THE ASPHALT CONCRETE. THE SURFACE SHALL BE FREE OF WATER, FOREIGN MATERIAL OR DUST, WHEN THE TACKCOAT IS APPLIED.
3. OVERLAY HEADER AREA TO MATCH NEW & EXISTING A.C. SURFACES.
4. WHERE PAVEMENT IS INSTALLED ON A PROJECT ON MORE THAN ONE DAY, A HEADER (AS HERE IS DESCRIBED) MUST BE PROVIDED AT THE CONSTRUCTION JOINT.

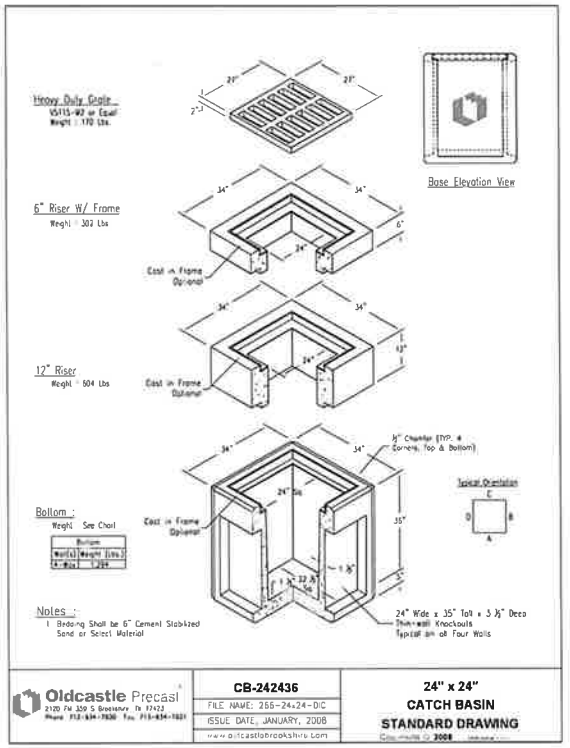
1 NEW CONSTRUCTION PAVEMENT EXTENSION JOINT DETAIL
SECTION NO SCALE



NOTES:

1. APPROXIMATE AVERAGE CHANNEL GEOMETRY AS SHOWN.
2. DRAINAGE DITCH GRADE SHALL BE SLOPED TOWARDS DRAINAGE INLET.
3. EARTHEN DRAINAGE SWALE CAN BE FIELD LOCATED TO AVOID CONFLICTS WITH EXISTING INFRASTRUCTURE.

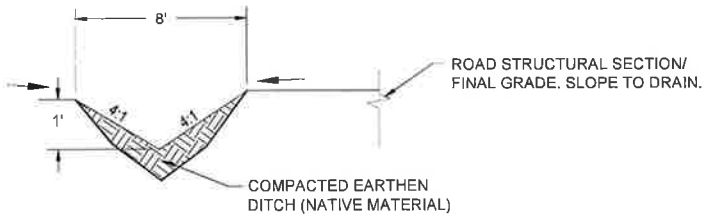
2 EARTHEN DRAINAGE "V" SWALE DETAIL
SECTION NO SCALE



4 PRECAST DRAINAGE STRUCTURE DETAIL
PLAN NO SCALE

NOTES:

INLET STRUCTURES PER OLDCASTLE PRECAST MODEL CB-242436 OR APPROVED EQUIVELANT.



3 EARTHEN DRAINAGE "V" SWALE DETAIL - TRAVERSABLE BY VEHICLE
SECTION NO SCALE

NOTES:

1. APPROXIMATE AVERAGE CHANNEL GEOMETRY AS SHOWN.
2. SIDE SLOPES ARE SHALLOWER (4:1) SO VEHICLES CAN TRAVERSE.
3. TRANSITION TO "V" DITCH GEOMETRY SHOWN ON DETAIL 2 (ON THIS SHEET) 10 FEET PRIOR TO INLET.
4. DRAINAGE DITCH GRADE SHALL BE SLOPED TOWARDS DRAINAGE INLET.
5. EARTHEN DRAINAGE SWALE CAN BE FIELD LOCATED TO AVOID CONFLICTS WITH EXISTING INFRASTRUCTURE.

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
DON BLODGWORTH, P.E. — 60954 R.C.E. No. — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 9/30/2025
DRAWN R. PIPER
CHECKED AS SHEHAN
SUPERVISED D. BLODGWORTH

CIVIL DETAILS

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-293
COUNTY PROJECT NO. 7094BRF
C-401
SHEET 11 OF 35

ORIGINAL SCALE: 6" — 95% SUBMITTAL — NOT FOR CONSTRUCTION

FILE PATH C:\pwworking\kleinfelderpw01\rspiper@kleinfelder.com\d0250992\11_Civil Details.dwg PLOT DATE: 10/2/2025 12:47 PM

LEGEND

W20-1 ROAD WORK AHEAD

W20-2 DETOUR AHEAD

W20-3 ROAD CLOSED AHEAD

SC3(CA) DETOUR

M4-10(L) DETOUR

M4-10(R) DETOUR

M4-8A END DETOUR

R11-2 ROAD CLOSED

R3-1

R11-4 ROAD CLOSED TO THRU TRAFFIC

R3-2

TEMPORARY SIGN

K-RAIL BARRICADES W/ FLASHING WARNING LIGHT

WATER FILLED BARRICADES W/ FLASHING WARNING LIGHTS

TYPE III BARRICADES W/ FLASHING WARNING LIGHTS

PORTABLE CHANGEABLE MESSAGE SIGN

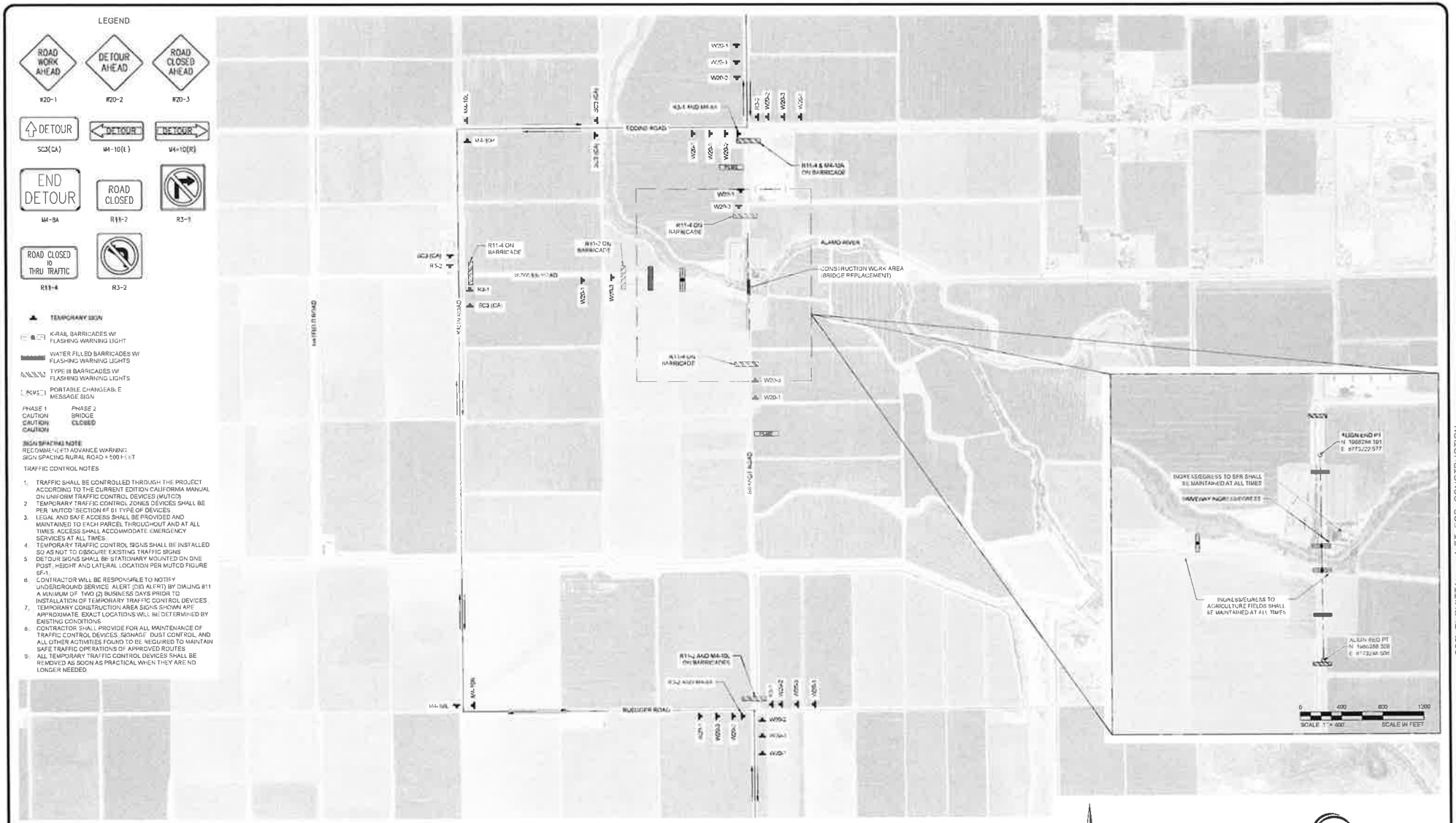
PHASE 1
CAUTION
CAUTION
CAUTION

PHASE 2
BRIDGE
CLOSED

SIGN SPACING NOTE
RECOMMENDED ADVANCE WARNING SIGN SPACING RURAL ROAD = 500 FEET

TRAFFIC CONTROL NOTES

1. TRAFFIC SHALL BE CONTROLLED THROUGH THE PROJECT ACCORDING TO THE CURRENT EDITION CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)
2. TEMPORARY TRAFFIC CONTROL ZONES DEVICES SHALL BE PER MUTCD SECTION 6F.01 TYPE OF DEVICES
3. LEGAL AND SAFE ACCESS SHALL BE PROVIDED AND MAINTAINED TO EACH PARCEL THROUGHOUT AND AT ALL TIMES. ACCESS SHALL ACCOMMODATE EMERGENCY SERVICES AT ALL TIMES.
4. TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE INSTALLED SO AS NOT TO OBSCURE EXISTING TRAFFIC SIGNS
5. DETOUR SIGNS SHALL BE STATIONARY MOUNTED ON ONE POST, HEIGHT AND LATERAL LOCATION PER MUTCD FIGURE 6F-1
6. CONTRACTOR WILL BE RESPONSIBLE TO NOTIFY UNDERGROUND SERVICE ALERT (DIG ALERT) BY DIALING 811 A MINIMUM OF TWO (2) BUSINESS DAYS PRIOR TO INSTALLATION OF TEMPORARY TRAFFIC CONTROL DEVICES
7. TEMPORARY CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY EXISTING CONDITIONS
8. CONTRACTOR SHALL PROVIDE FOR ALL MAINTENANCE OF TRAFFIC CONTROL DEVICES, SIGNAGE, DUST CONTROL, AND ALL OTHER ACTIVITIES FOUND TO BE REQUIRED TO MAINTAIN SAFE TRAFFIC OPERATIONS OF APPROVED ROUTES
9. ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AS SOON AS PRACTICAL WHEN THEY ARE NO LONGER NEEDED



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DON BLOODWORTH, P.E. — 60954 R.C.E. No — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHNA GAY, P.E. — 62028 R.C.E. No — DIRECTOR OF PUBLIC WORKS — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

TEMPORARY DETOUR TRAFFIC CONTROL PLAN

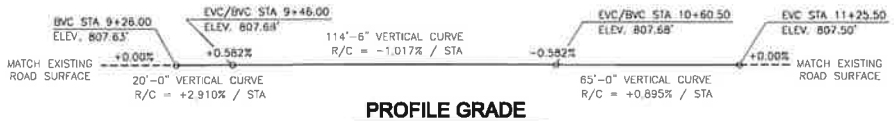
BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7064BRF

SHEET C-501
SHEET 12 OF 35

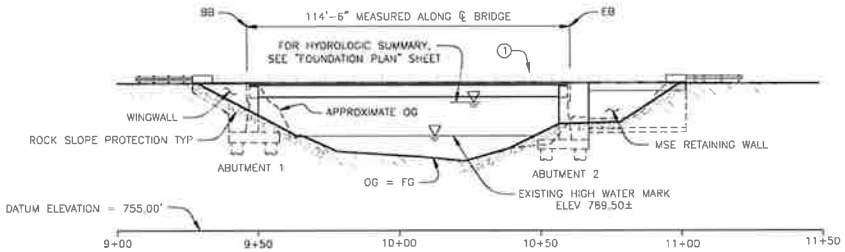
ORIGINAL SCALE: 95% SUBMITTAL - NOT FOR CONSTRUCTION

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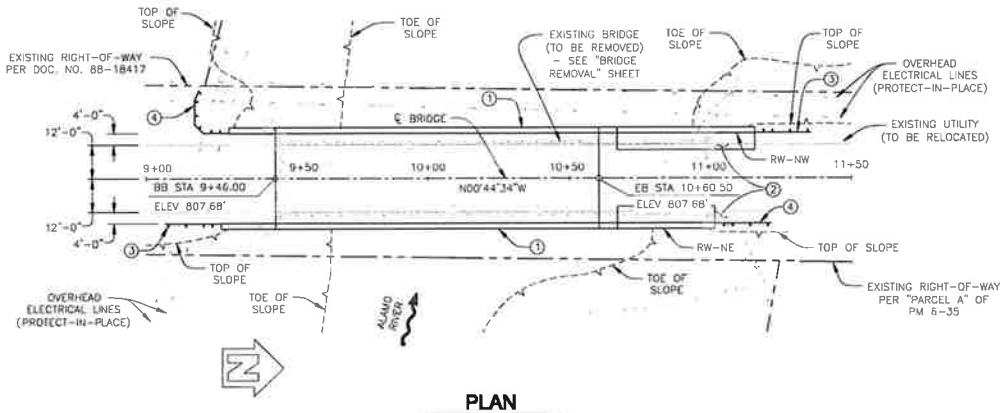
PROFILE GRADE

NO SCALE



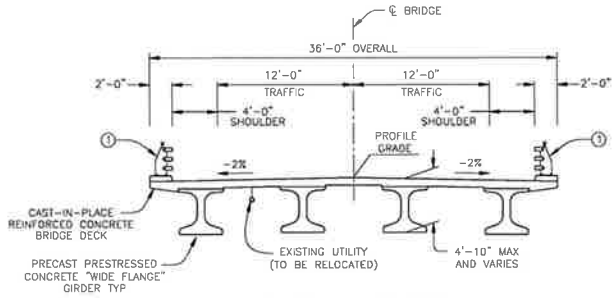
ELEVATION

1" = 20'-0"



PLAN

1" = 20'-0"



TYPICAL SECTION

1" = 5'-0"

LEGEND:

– EXISTING BRIDGE (TO BE REMOVED)

———— – INDICATES NEW STRUCTURE

NOTES:

1. FOR "INDEX TO PLANS", SEE "INDEX TO PLANS" SHEET.
2. FOR "GENERAL NOTES", SEE "INDEX TO PLANS" SHEET.
3. FOR "PILE DATA TABLE", SEE "FOUNDATION PLAN" SHEET.

(1) CALIFORNIA ST-75 BRIDGE RAIL
(2) BARRIER SLAB
(3) AGT – SEE "ROADWAY PLANS"
(4) MGS – SEE "ROADWAY PLANS"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

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770 FIRST AVENUE, SUITE 100 San Diego, CA. 92101 (619) 831-4600

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72885 R.C.E. No. — 12/31/28 REG. EXP. — DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62029 R.C.E. No. — 09/30/27 REG. EXP. — DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE BY ITEM
T. BRITTAIN
AS NOTED
K. BURNELL

GENERAL PLAN

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-833
COUNTY PROJECT NO. TSBABRF
S-01
SHEET 13 OF 35

INDEX TO PLANS

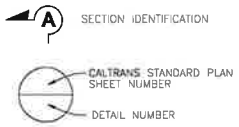
SHEET NUMBER	TITLE
S-01	GENERAL PLAN
S-02	INDEX TO PLANS
S-03	BRIDGE REMOVAL
S-04	DECK CONTOURS
S-05	FOUNDATION PLAN
S-06	ABUTMENT 1 LAYOUT
S-07	ABUTMENT 2 LAYOUT
S-08	ABUTMENT DETAILS NO. 1
S-09	ABUTMENT DETAILS NO. 2
S-10	ABUTMENT DETAILS NO. 3
S-11	TYPICAL SECTION
S-12	GIRDER LAYOUT
S-13	GIRDER DETAILS NO. 1
S-14	GIRDER DETAILS NO. 2
S-15	GIRDER DETAILS NO. 3
S-16	MISCELLANEOUS DETAILS NO. 1
S-17	MISCELLANEOUS DETAILS NO. 2
S-18	RETAINING WALL GENERAL PLAN
S-19	RETAINING WALL DETAILS NO. 1
S-20	RETAINING WALL DETAILS NO. 2
S-21	LOG OF TEST BORINGS NO. 1
S-22	LOG OF TEST BORINGS NO. 2
S-23	LOG OF TEST BORINGS NO. 3

SPECIFICATIONS

STANDARD SPECIFICATIONS DATED 2024, STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

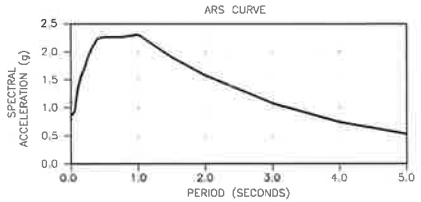
SPECIAL PROVISIONS FOR THE CONSTRUCTION OF THIS PROJECT

PLAN SYMBOLS

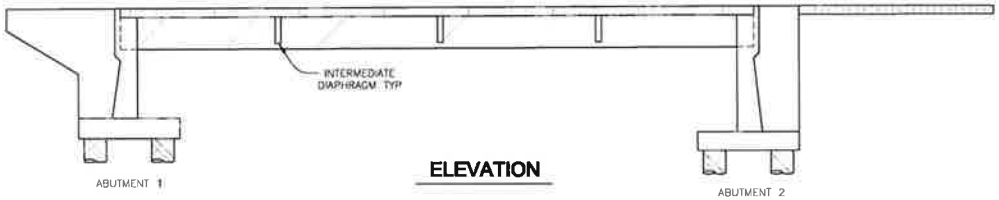


GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN:	AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 2017 EDITION WITH CALIFORNIA AMENDMENTS UPDATED JUNE 2024 STANDARD PLANS AND SPECIFICATIONS, 2024 EDITION CALTRANS STRUCTURE TECHNICAL POLICIES AS OF MARCH 2024
SEISMIC DESIGN:	CALTRANS SEISMIC DESIGN CRITERIA (SDC), VERSION 2.1 DATED JANUARY 2025
DEAD LOAD:	INCLUDES 10 PERCENT OF CONCRETE DECK DEAD LOAD BETWEEN GIRDER FLANGE EDGES FOR STAY-IN-PLACE FORMWORK, 0.024 KSF FOR FUTURE WEARING SURFACE.
LIVE LOAD:	HL93 AND PERMIT DESIGN LOAD
SEISMIC LOADING:	SDC ARS ONLINE v4.0 SOIL PROFILE: V_{s30} = 669 FT/S MOMENT MAGNITUDE: M_{MAX} = 7.0 PEAK GROUND ACCELERATION = 0.88g



REINFORCED CONCRETE:	f_y = 60 ksi (UNLESS OTHERWISE NOTED) f'_c = 3.6 ksi (UNLESS OTHERWISE NOTED)
PRESTRESSED CONCRETE:	SEE "PRESTRESSING NOTES" ON "GIRDER DETAILS NO. 2" SHEET.



ELEVATION

LEGEND:

- STRUCTURAL CONCRETE, BRIDGE (4,000 PSI)
- PC / PS CA WIDE FLANGE GIRDERS – SEE "GIRDER DETAILS NO. 2" SHEET
- STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER), DECK SLAB (4,000 PSI)
- STRUCTURAL CONCRETE, BRIDGE FOOTING (4,000 PSI)
- CIDH PILE CONCRETE (4,000 PSI)
- STRUCTURAL CONCRETE, BARRIER SLAB (3,600 PSI)

CONCRETE STRENGTH AND TYPE LIMITS

NO SCALE

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REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — 12/31/28 REG. EXP.
DATE

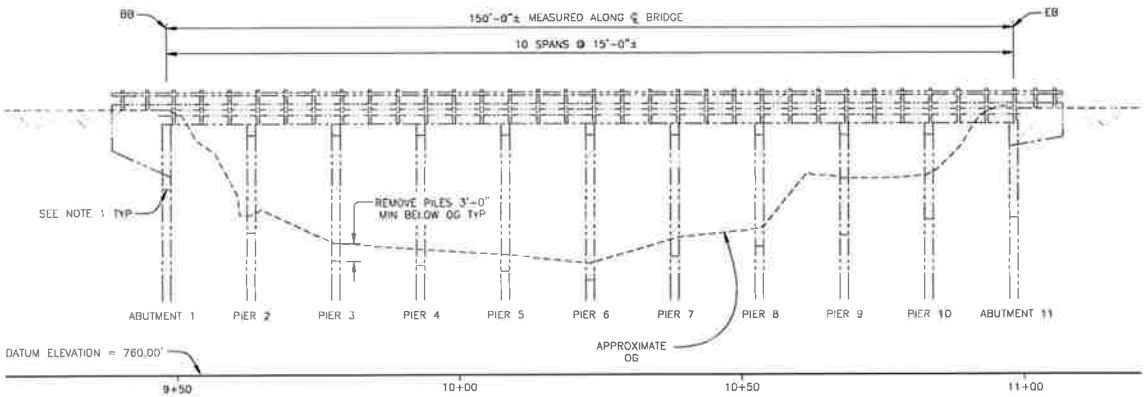
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — 09/30/27 REG. EXP.
DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

INDEX TO PLANS

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-926
COUNTY PROJECT NO. 7984RF
S-02
SHEET 14 OF 36

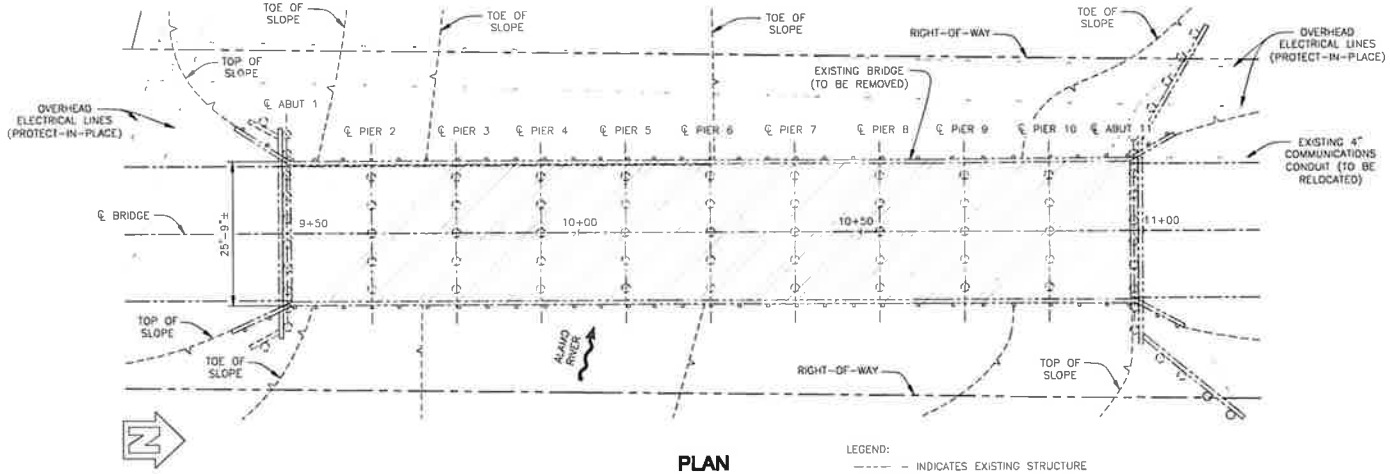


ELEVATION

1" = 10'-0"

NOTES:

1. EXISTING PILES SHALL BE REMOVED TO AT LEAST THE ELEVATION OF THE BOTTOM OF THE NEW ABUTMENT FOOTING OR THE MSE RETAINING WALL.
2. BRACING OF EXISTING PIERS IS NOT SHOWN FOR CLARITY.
3. EXISTING PILE SHALL BE EXTRACTED IF IT CONFLICTS WITH NEW PILE.



PLAN

1" = 10'-0"

LEGEND:

----- – INDICATES EXISTING STRUCTURE

– EXISTING BRIDGE (TO BE REMOVED)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:

KELLY BURNELL, P.E. — 72985 R.C.E. No. — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

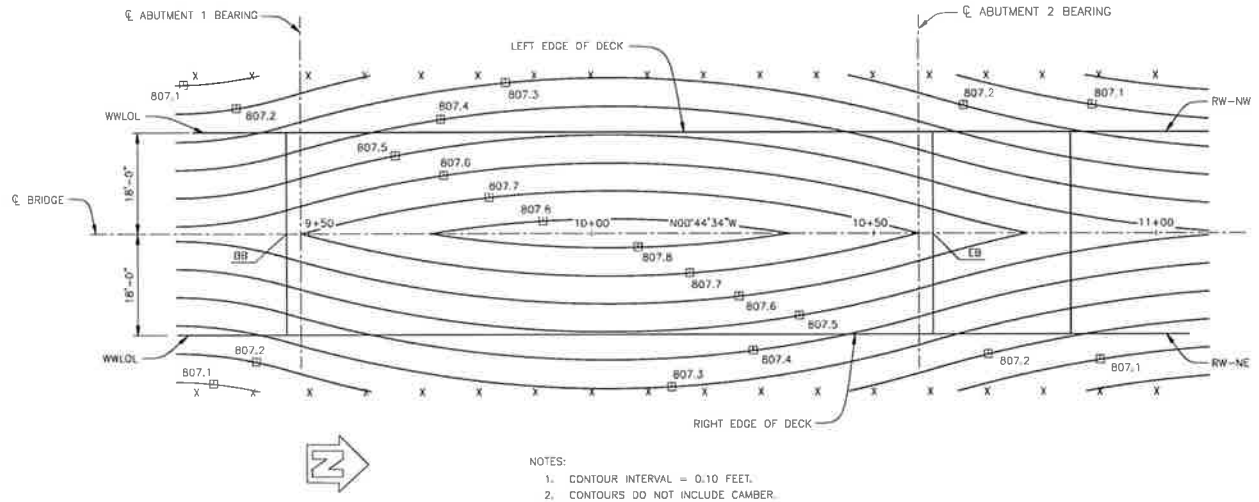
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82026 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

BRIDGE REMOVAL

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. T0946RF
S-03
SHEET 15 OF 35



NOTES:

1. CONTOUR INTERVAL = 0.10 FEET.
2. CONTOURS DO NOT INCLUDE CAMBER.
3. [1] – INDICATES TENTH FOOT (0.10 FEET) CONTOURS.
4. X – INDICATES 10 FOOT INTERVALS ALONG ℄ BRIDGE.

PLAN

1" = 10'–0"

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:

KELLY BURNELL, P.E. — 72986 R.C.E. No. — 12/31/26 REG. EXP. — DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — 09/30/27 REG. EXP. — DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

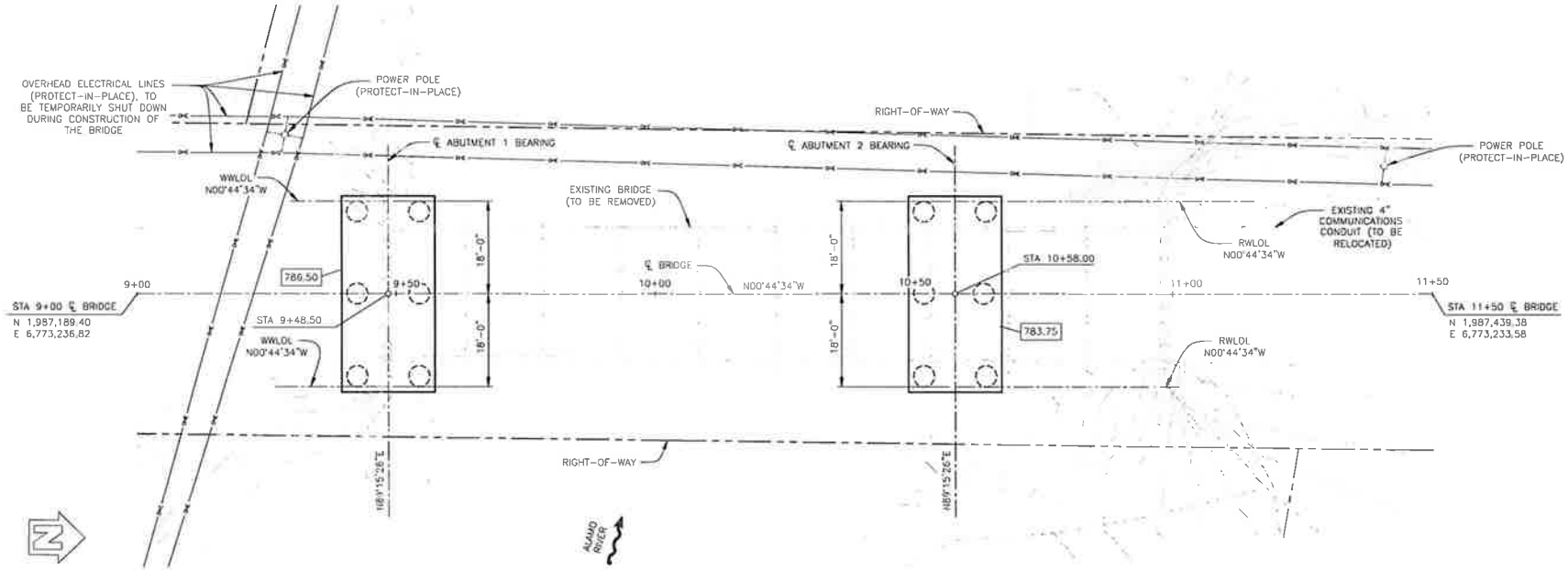
DECK CONTOURS

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. 9-203
COUNTY PROJECT NO. TGM6RF

S-04

SHEET 15 OF 35



PLAN

1" = 10'-0"

SCOUR DATA TABLE

SUPPORT NO.	LONG TERM (DEGRADATION AND CONTRACTION) SCOUR ELEVATION (ft)	SHORT TERM (LOCAL) SCOUR DEPTH (ft)
ABUTMENT 1	N/A (EXPOSED RIPRAP)	N/A (EXPOSED RIPRAP)
ABUTMENT 2	N/A (EXPOSED RIPRAP)	N/A (EXPOSED RIPRAP)

PILE DATA TABLE

LOCATION	PILE TYPE	PILE CUT-OFF ELEVATION (FT)	REQUIRED NOMINAL RESISTANCE (KIPS)		CIDH DESIGN TIP ELEVATIONS (FT)	CIDH SPECIFIED TIP ELEVATION (FT)
			COMPRESSION	TENSION		
ABUTMENT 1	48" CIDH	786.75	900	0	723.00 (a) 750.00 (c) 741.00 (d)	723.00
ABUTMENT 2	48" CIDH	784.00	1086	0	686.00 (a) 734.00 (c) 733.00 (d)	686.00

NOTES:

1. DESIGN TIP ELEVATION IS CONTROLLED BY: (a) COMPRESSION, (c) SETTLEMENT, AND (d) LATERAL LOAD.
2. THE CIDH SPECIFIED TIP ELEVATION SHALL NOT BE RAISED.

NOTES:

1. DENOTES BOTTOM OF FOOTING ELEVATION
2. INDICATES 48" DIA CIDH PILE
3. FOR LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL, SEE A62B AND A62C.

HYDROLOGIC SUMMARY

DRAINAGE AREA = 1,042.7 SQUARE MILES

	DESIGN FLOOD	BASE FLOOD	FLOOD OF RECORD
FREQUENCY (YEARS)	100	100	UNCAGED
DISCHARGE (CUBIC FEET PER SECOND)	76,421	76,421	4,500 (2)
WATER SURFACE ELEVATION AT BRIDGE (FEET, NAVD88)	812.20	812.29	N/A

NOTES:

1. FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE COUNTY, AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATIONS.
2. HIGHEST RECORDED FLOOD EVENT IS LISTED FROM USGS GAGE 10254730 – ALAMO RIVER NEAR NILAND, CA ON AUGUST 17, 1977. GAGE IS LOCATED DOWNSTREAM 7 MILES FROM PROJECT LOCATION.

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

KLEINFELDER

REVISION	DATE	COMMENTS

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KELLY BURNELL, P.E. — 72986 R.C.E. No. — DATE — 12/31/20 REG. EXP.

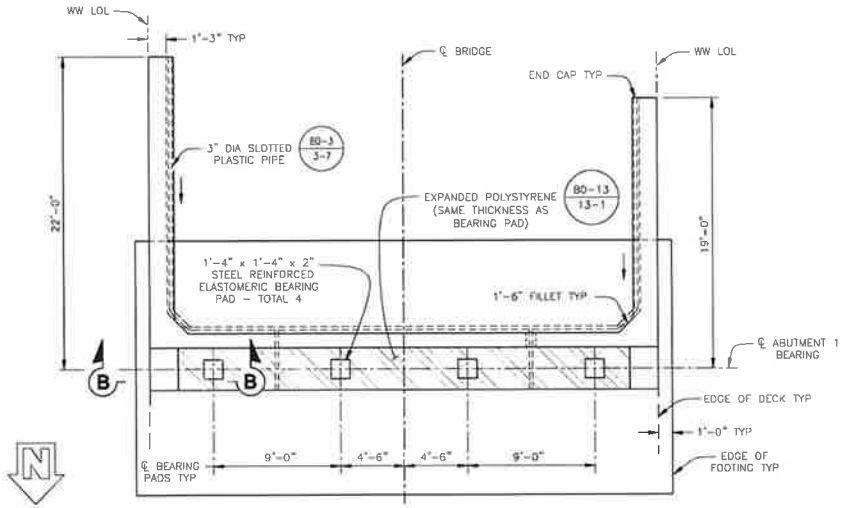
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

FOUNDATION PLAN

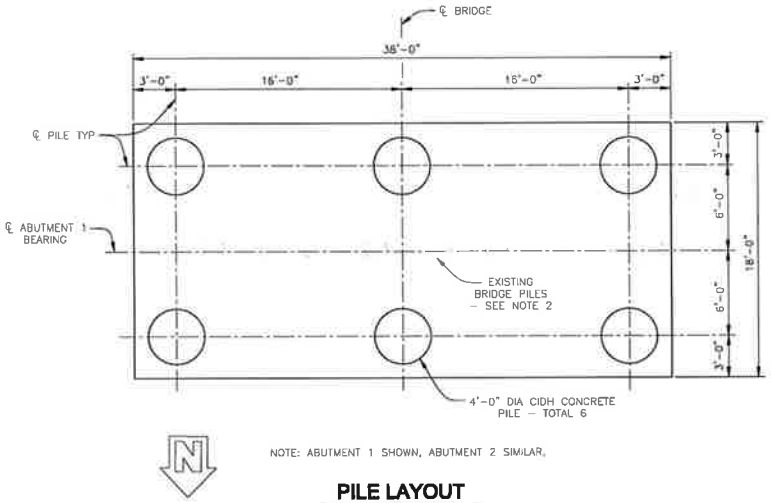
BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-923 — S-05
COUNTY PROJECT NO. 700489RF — SHEET 17 OF 35



PLAN

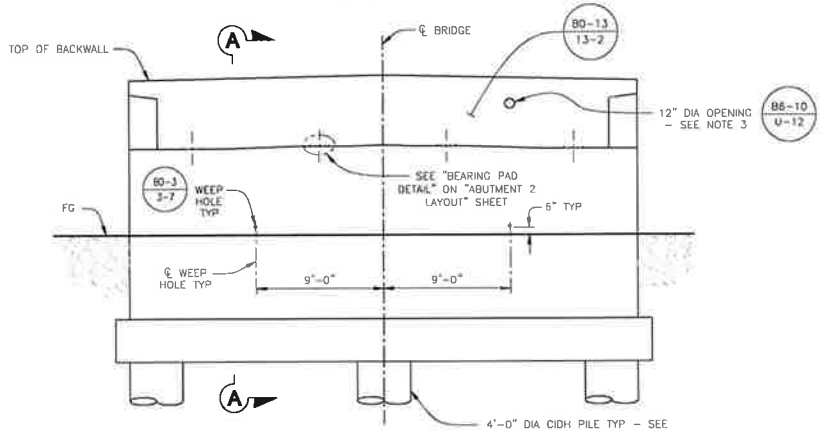
1/4" = 1'-0"



NOTE: ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR.

PILE LAYOUT

1/4" = 1'-0"



ELEVATION

1/4" = 1'-0"

NOTES:

1. FOR "SECTION A–A" AND "SECTION B–B", SEE "ABUTMENT DETAILS NO. 1" SHEET.
2. EXISTING PILE SHALL BE EXTRACTED IF IT CONFLICTS WITH NEW PILE.
3. FOR UTILITY OPENING LOCATION, SEE "TYPICAL SECTION" SHEET.

KLEINFELDER

770 TIECH AVENUE, SUITE 400 SAN DIEGO, CA 92101 (619) 831-4600

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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

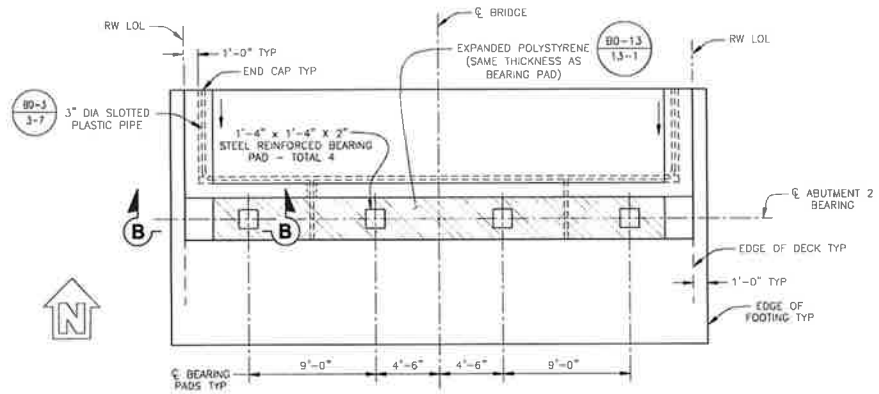
ABUTMENT 1 LAYOUT

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-303
COUNTY PROJECT NO. 70948RF

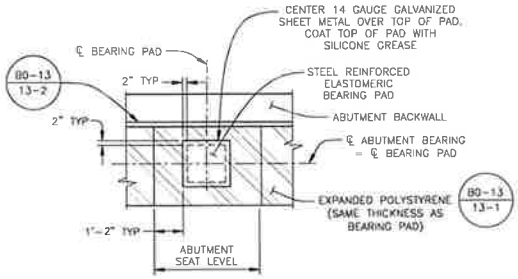
S-06

SHEET 18 OF 36



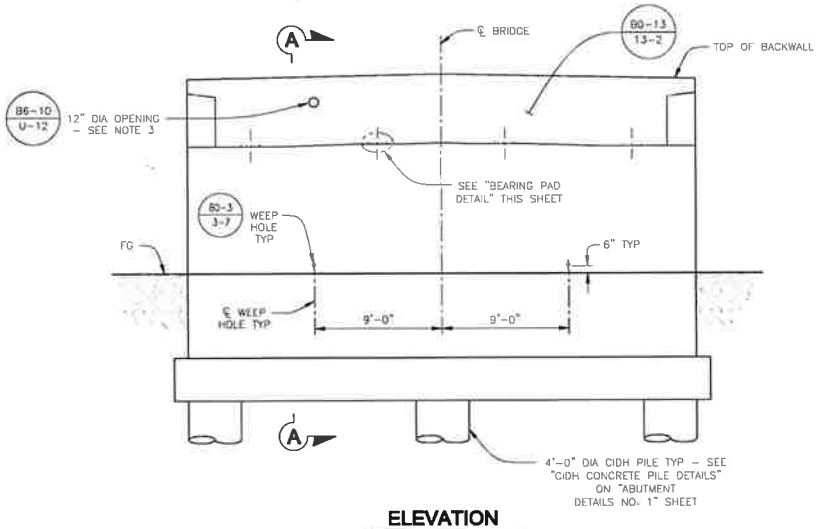
PLAN

1/4" = 1'-0"



BEARING PAD DETAIL

1/2" = 1'-0"



ELEVATION

1/4" = 1'-0"

NOTES:

1. FOR "SECTION A-A" AND "SECTION B-B", SEE "ABUTMENT DETAILS NO. 1" SHEET.
2. EXISTING PILE SHALL BE EXTRACTED IF IT CONFLICTS WITH NEW PILE.
3. FOR UTILITY OPENING LOCATION, SEE "TYPICAL SECTION" SHEET.
4. FOR "PILE LAYOUT", SEE "ABUTMENT 1 LAYOUT" SHEET.

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DATE

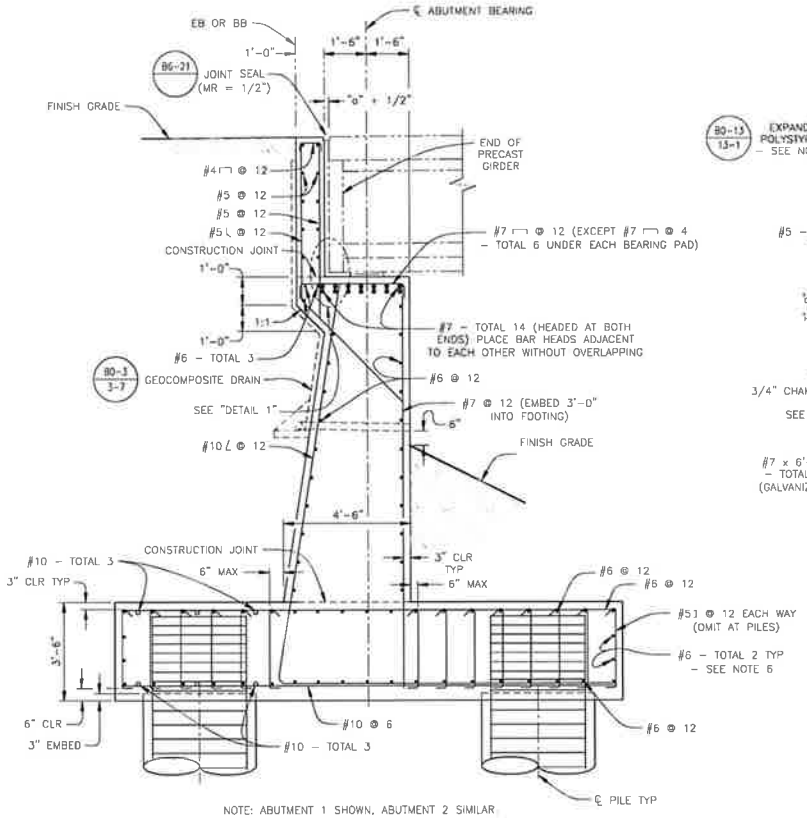
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
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DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

ABUTMENT 2 LAYOUT

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

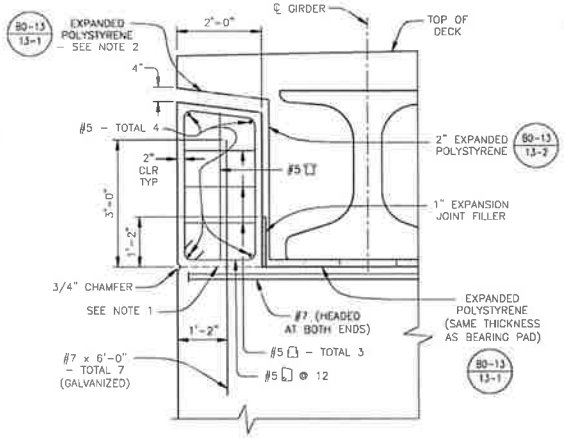
COUNTY REFERENCE NO. B-325
COUNTY PROJECT NO. 7094BRF
S-07
SHEET 19 OF 35



NOTE: ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

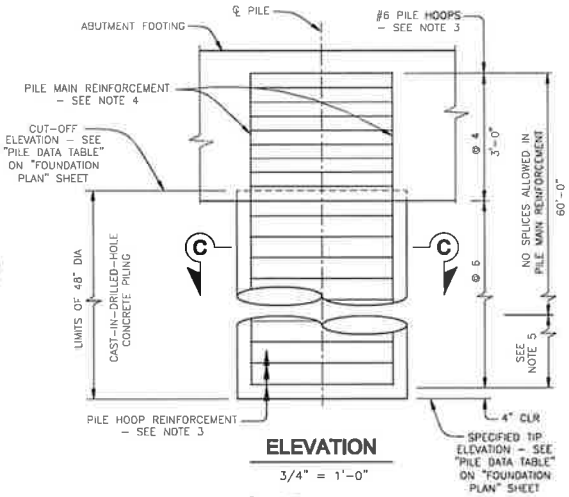
SECTION A-A

1/2" = 1'-0"



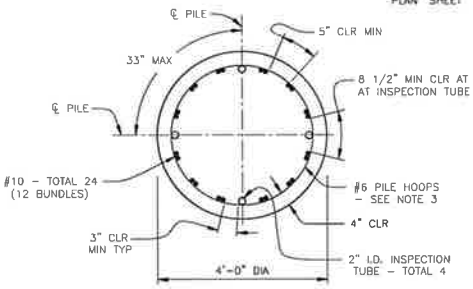
SECTION B-B

3/4" = 1'-0"



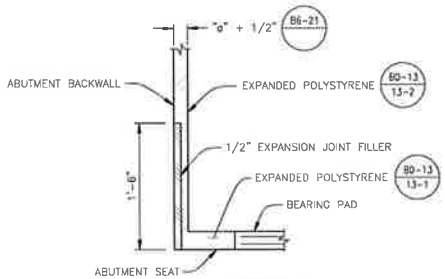
ELEVATION

3/4" = 1'-0"



SECTION C-C

3/4" = 1'-0"



DETAIL 1

NO SCALE

CIDH CONCRETE PILE DETAILS

NOTES:

1. MANDATORY JOINT SURFACE TO BE SMOOTH FINISHED AND LINED WITH 15 POUND CONSTRUCTION PAPER.
2. OUTER 6 INCHES OF EXPANDED POLYSTYRENE TO BE REMOVED AFTER CONSTRUCTION.
3. ALL PILE HOOPS SHALL UTILIZE ULTIMATE BUTT SPLICES.
4. FOOTING REINFORCEMENT MAY BE ADJUSTED AT THE PILES PROVIDED THE SPACING LISTED IS NOT EXCEEDED.
5. ONLY STAGGERED ULTIMATE BUTT SPLICES ALLOWED IN PILE MAIN REINFORCEMENT IN THIS ZONE.
6. EACH SIDE FACE OF FOOTING SHALL HAVE TWO BARS PLACED AND SPACED EQUALLY BETWEEN TOP AND BOTTOM REINFORCING MATS.
7. FOR LOCATIONS OF "SECTION A-A" AND "SECTION B-B", SEE "ABUTMENT 1 LAYOUT" AND "ABUTMENT 2 LAYOUT" SHEETS.

KLEINFELDER

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REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:

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COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 8/1/25
DESIGN T. BRITTAIN
SCALE AS NOTED
DRAWN E. BURNELL

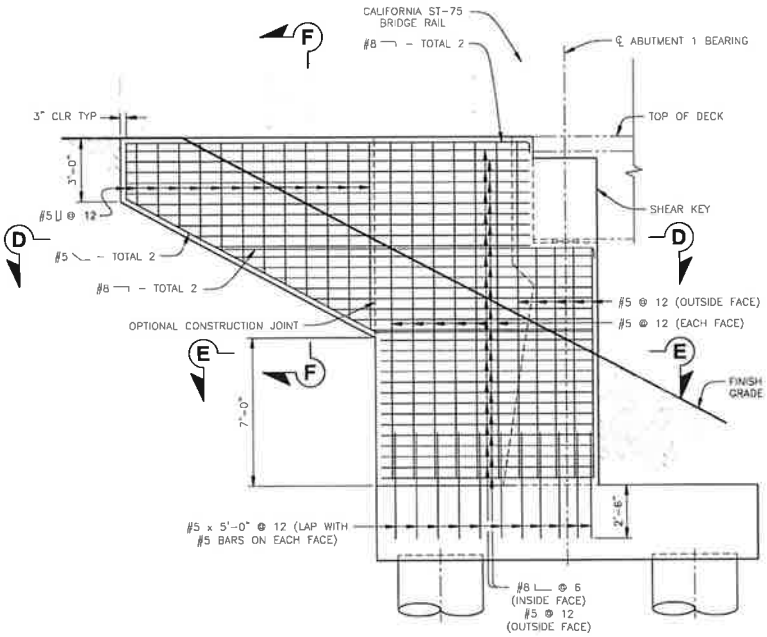
ABUTMENT DETAILS NO. 1

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-20S
COUNTY PROJECT NO. TGB48AF

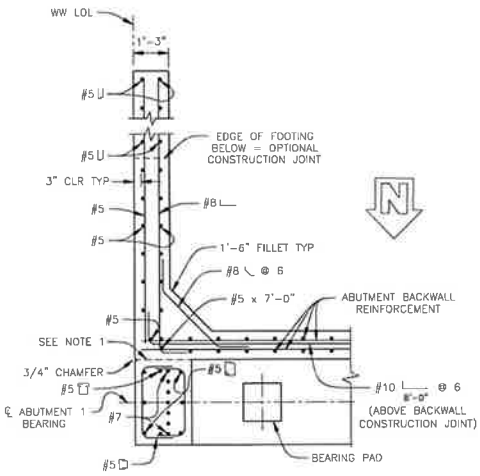
S-08

SHEET 20 OF 35



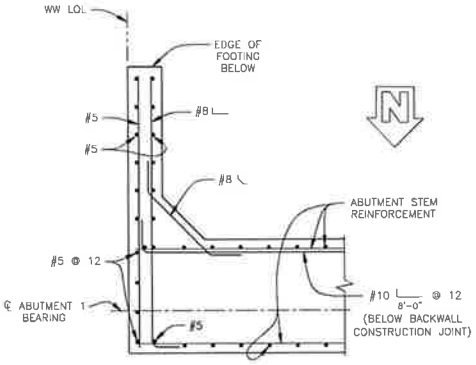
ABUTMENT 1 WINGWALL ELEVATION

3/8" = 1'-0"



SECTION D-D

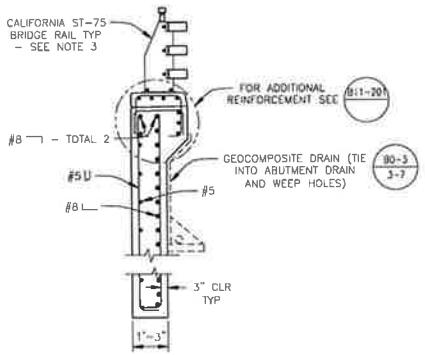
1/2" = 1'-0"



NOTE: FOR REINFORCEMENT NOT SHOWN, SEE "SECTION D-D".

SECTION E-E

1/2" = 1'-0"



SECTION F-F

1/2" = 1'-0"

NOTES:

1. MANDATORY JOINT SURFACE TO BE SMOOTH FINISHED AND LINED WITH 15 POUND CONSTRUCTION PAPER.
2. "SECTION D-D" AND "SECTION E-E" ARE SHOWN FOR EAST WINGWALL. WEST WINGWALL SIMILAR.
3. FOR MORE INFORMATION, SEE CALTRANS STANDARD PLANS B11-200, B11-201, AND B11-202.

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REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:

KELLY BURNELL, P.E. — 72985 R.C.E. No.

DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62026 R.C.E. No.

DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 07/2026
DESIGNED T. BRITTAIN
SCALE AS NOTED
CHECKED K. BURNELL

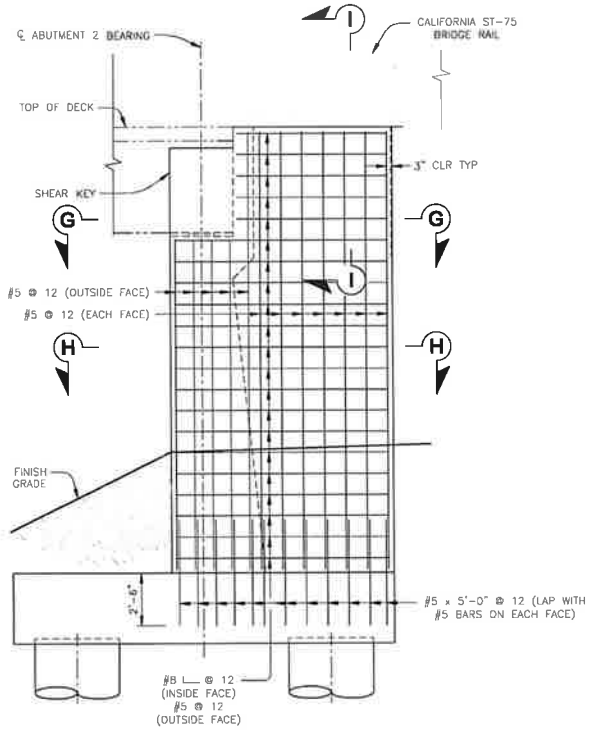
ABUTMENT DETAILS NO. 2

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-909
COUNTY PROJECT NO. 7084BRF

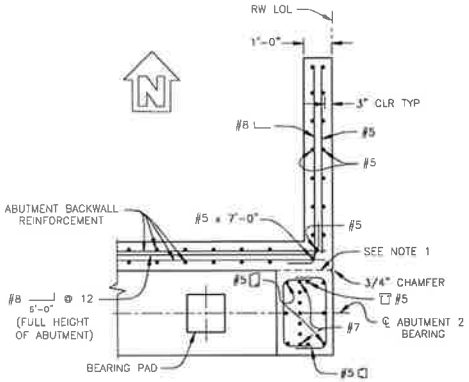
S-09

SHEET 21 OF 35



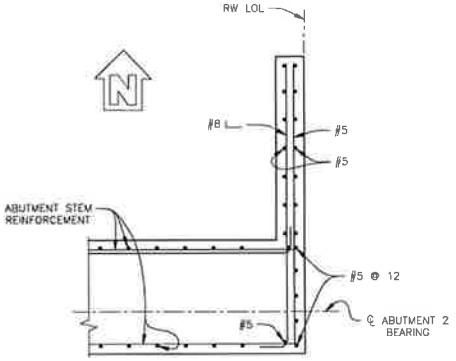
ABUTMENT 2 RETURN WALL ELEVATION

3/8" = 1'-0"



SECTION G-G

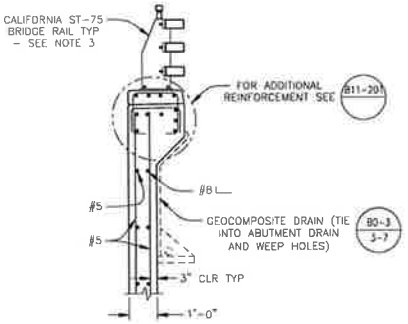
1/2" = 1'-0"



NOTE: FOR REINFORCEMENT NOT SHOWN, SEE "SECTION G-G".

SECTION H-H

1/2" = 1'-0"



SECTION I-I

1/2" = 1'-0"

NOTES:

1. MANDATORY JOINT SURFACE TO BE SMOOTH FINISHED AND LINED WITH 15 POUND CONSTRUCTION PAPER.
2. "SECTION G-G" AND "SECTION H-H" ARE SHOWN FOR EAST RETURN WALL. WEST RETURN WALL SIMILAR.
3. FOR MORE INFORMATION, SEE CALTRANS STANDARD PLANS B11-200, B11-201, AND B11-202.

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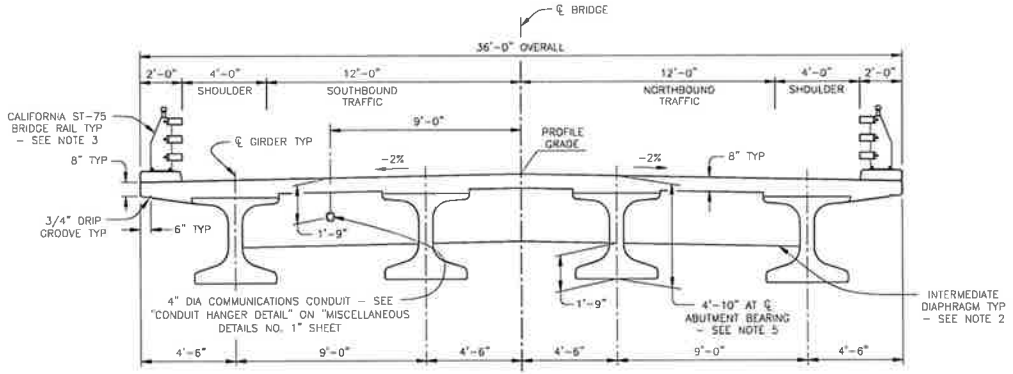
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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

ABUTMENT DETAILS NO. 2

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-323
COUNTY PROJECT NO. 7084BRF
S-10
SHEET 22 OF 35



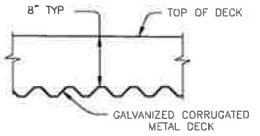
NOTE: BAT HOUSE NOT SHOWN.

TYPICAL SECTION

3/8" = 1'-0"

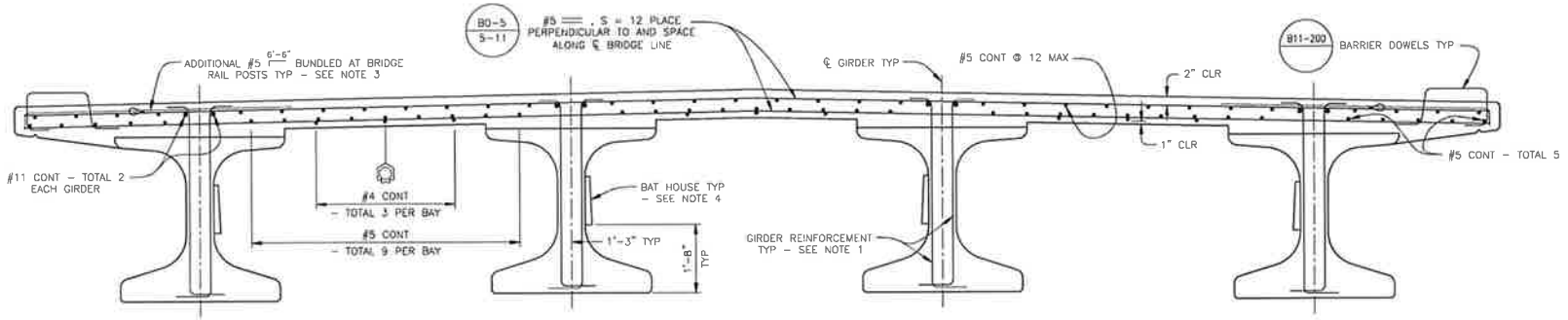
NOTES:

1. FOR GIRDER REINFORCEMENT DETAILS, SEE "GIRDER DETAILS NO. 1" SHEET.
2. FOR INTERMEDIATE DIAPHRAGM, SEE "GIRDER DETAILS NO. 1" SHEET.
3. FOR BRIDGE RAIL DETAILS, SEE CALTRANS STANDARD PLANS B11-200, B11-201, AND B11-202.
4. FOR BAT HOUSE DETAILS, SEE "MISCELLANEOUS DETAILS NO. 1" SHEET.
5. THE CONTRACTOR MAY NEED TO ADJUST TOTAL DEPTH IF TIME ELAPSED BETWEEN PRESTRESS TRANSFER IN GIRDERS AND CASTING DECK SLAB CONCRETE EXCEEDS 120 DAYS. REVISED DEPTHS SHALL BE SUBMITTED FOR THE ENGINEER'S REVIEW.



OPTIONAL STAY-IN-PLACE FORM

NO SCALE



LEGEND:

⊂⊃ – INDICATES BUNDLED BARS

PART TYPICAL SECTION

3/4" = 1'-0"

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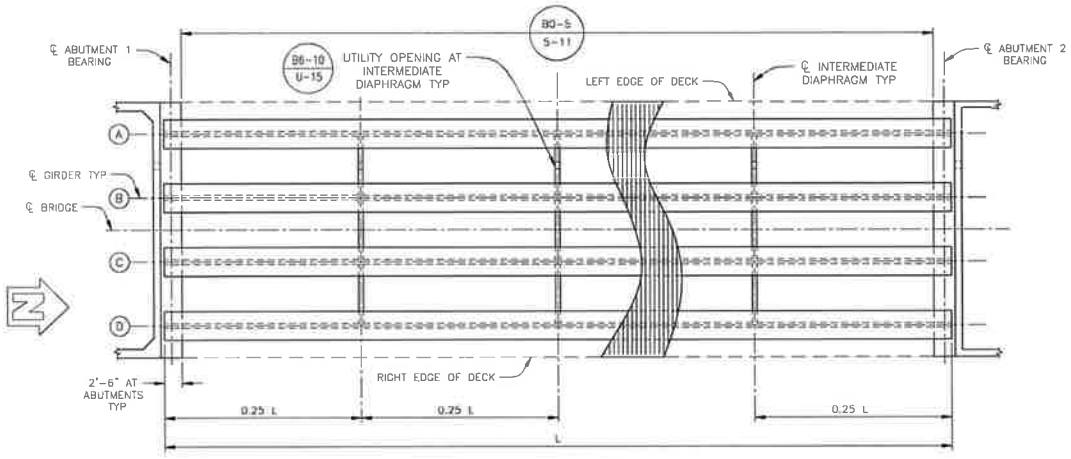
PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 9/17/25
DESIGN T. BRITTAIN
DRAWN K. BURNELL
CHECK JM NOTES

TYPICAL SECTION

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. S-923
COUNTY PROJECT NO. 7094RF
S-11
SHEET 23 OF 35



NOTE: END DIAPHRAGMS NOT SHOWN.

LEGEND:

(A) – INDICATES GIRDER DESIGNATION

PLAN (B0-5 / B6-10)

1/8" = 1'-0"

SUPERSTRUCTURE CONSTRUCTION SEQUENCE:

1. THE PRECAST GIRDERS ARE ERECTED IN PLACE. TEMPORARY LATERAL BRACING IS ERECTED BETWEEN THE PRECAST GIRDERS.
2. CONCRETE OF THE INTERMEDIATE DIAPHRAGMS SHALL BE PLACED AT LEAST 7 DAYS BEFORE PLACEMENT OF CONCRETE OF THE DECK SLAB.
3. REINFORCEMENT OF THE END DIAPHRAGMS AT ABUTMENTS, AND BRIDGE DECK IS INSTALLED.
4. CONCRETE OF END DIAPHRAGMS AT ABUTMENTS MAY BE PLACED BEFORE THE DECK SLAB. ALTERNATIVELY, CONCRETE OF END DIAPHRAGMS CAN BE PLACED MONOLITHICALLY WITH THE DECK SLAB. PRECAST GIRDERS SHOULD HAVE THEIR 28-DAY COMPRESSIVE STRENGTH AT TIME OF SLAB CONSTRUCTION.
5. TEMPORARY LATERAL BRACING BETWEEN PRECAST GIRDERS SHALL BE REMOVED IN ACCORDANCE WITH THE SPECIFICATIONS.
6. FORMWORK OF END DIAPHRAGMS SHALL BE REMOVED AT LEAST 7 DAYS AFTER THE DIAPHRAGM CONCRETE HAS BEEN PLACED.
7. BRIDGE RAILS ARE PLACED.

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PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

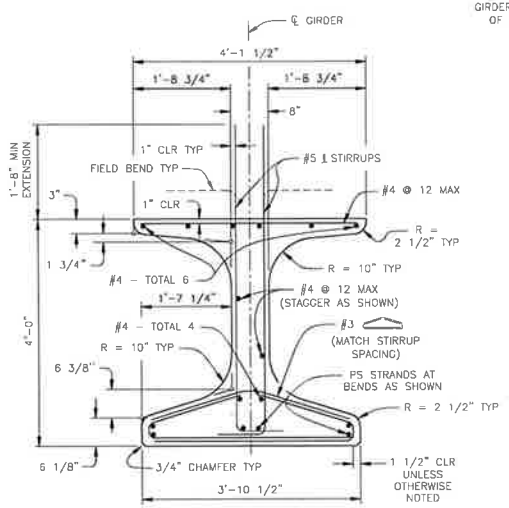
GIRDER LAYOUT

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-929
COUNTY PROJECT NO. 700458/F

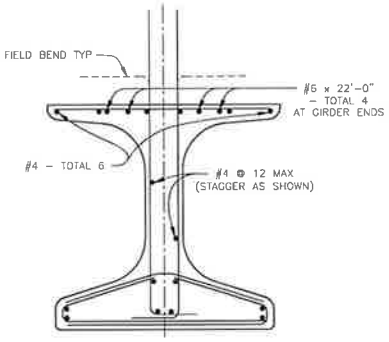
S-12

SHEET 24 OF 35



SECTION A-A

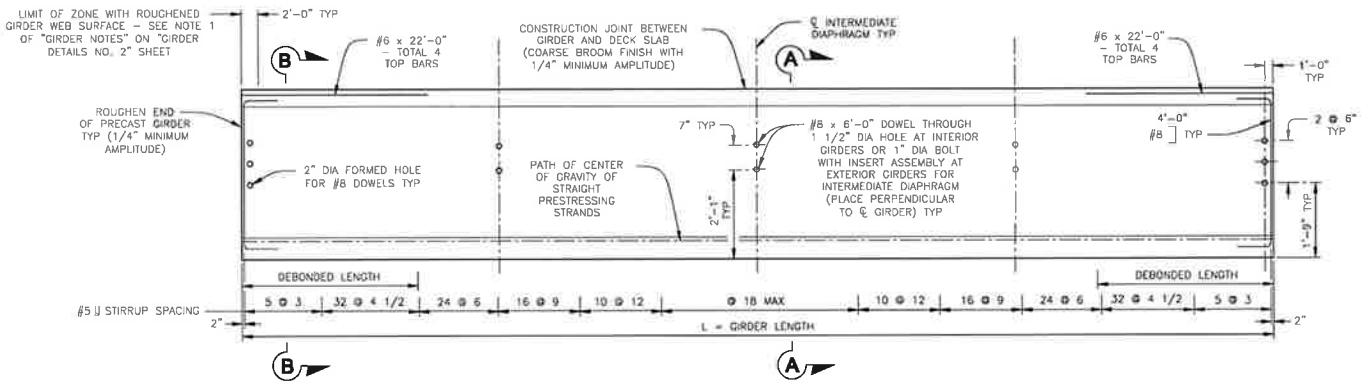
1" = 1'-0"



NOTE: FOR INFORMATION NOT SHOWN, SEE "SECTION A-A".

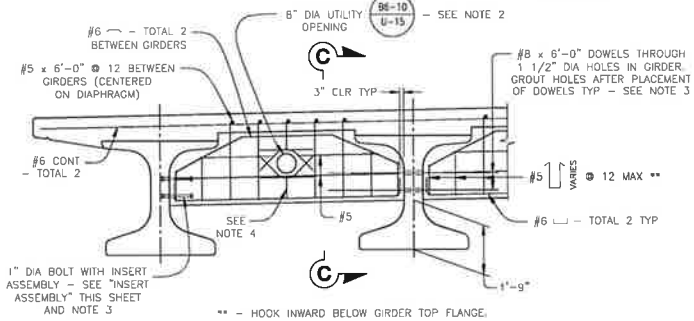
SECTION B-B

1" = 1'-0"



ELEVATION

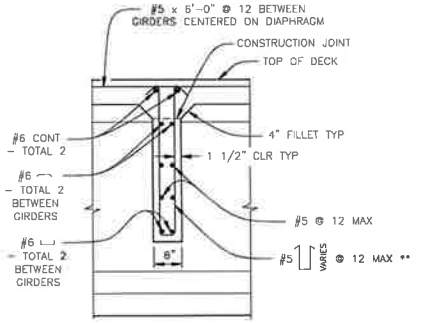
NO SCALE



** - HOOK INWARD BELOW GIRDER TOP FLANGE.

INTERMEDIATE DIAPHRAGM

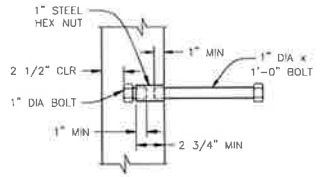
NO SCALE



** - HOOK INWARD BELOW GIRDER TOP FLANGE.

SECTION C-C

3/4" = 1'-0"



INSERT ASSEMBLY

NO SCALE

NOTES:

1. FOR LOCATIONS OF INTERMEDIATE DIAPHRAGMS, SEE "GIRDER LAYOUT" SHEET. INTERMEDIATE DIAPHRAGMS SHALL BE SET PERPENDICULAR TO ℄ GIRDERS.
2. FOR UTILITY OPENING LOCATION, SEE "TYPICAL SECTION" SHEET.
3. SEE "ELEVATION" THIS SHEET FOR LOCATIONS OF INSERT ASSEMBLIES AND DOWELS.
4. ADJUST LOCATIONS OF STIRRUPS TO FIT BELOW UTILITY OPENING.

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — 12/31/25 REG. EXP. — DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — 09/30/27 REG. EXP. — DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 8/1/25 | DESIGNED E. MATTSON | DRAWN E. BURNELL | CHECKED K. BURNELL | SCALE AS NOTED

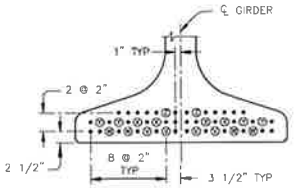
GIRDER DETAILS NO. 1

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

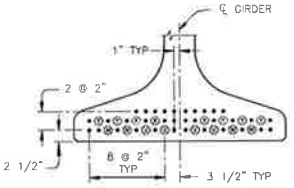
COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7084BRP

S-13

SHEET 25 OF 35



TYPE 1 (54 STRANDS)



TYPE 2 (50 STRANDS)

LEGEND:

- ● – DENOTES CONTINUOUSLY BONDED STRAND TERMINATED AT END OF GIRDER
- Ⓦ – DENOTES DEBONDED STRAND

STRAND LOCATION	DEBONDED LENGTH
Ⓥ	12'–0"
Ⓦ	16'–0"
Ⓧ	20'–0"
Ⓨ	24'–0"
Ⓩ	30'–0"

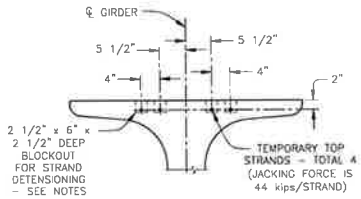
STRAND AND BONDING PATTERNS

SCALE: 1" = 1'–0"

GIRDER AND STRAND DATA

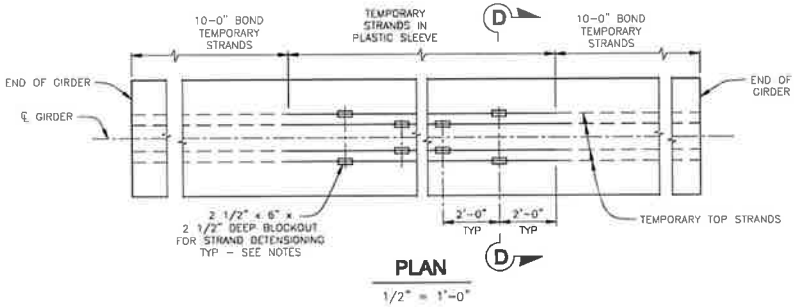
LOCATION		GIRDER LENGTH "L"	NUMBER OF 0.6" DIA STRANDS	JACKING FORCE (P)	CONCRETE STRENGTH (ksi)		MIDSPAN DL * DEFLECTION (ft)		STRAND PATTERN TYPE
					f'ci	f'c	DECK	RAILING	
SPAN 1	GIRDERS A AND D	111'–6"	54	43.9 kips/STRAND = 2,370 kips	6.0	9.0	0.17	0.01	1
	GIRDERS B AND C	111'–6"	50	43.8 kips/STRAND = 2,190 kips	6.0	9.0	0.16	0.01	2

* – SEE NOTE 3 OF "PRESTRESSING NOTES" THIS SHEET.



SECTION D-D

1" = 1'–0"



PLAN

1/2" = 1'–0"

NOTES:

1. BLOCKOUT FOR STRAND DETENSIONING SHALL BE FORMED WITH EXPANDED POLYSTYRENE.
2. JUST PRIOR TO CUTTING TEMPORARY STRANDS, REMOVE EXPANDED POLYSTYRENE IN BLOCKOUTS. PREVENT MOISTURE FROM ENTERING THE BLOCKOUTS.
3. CUT STRANDS IN BLOCKOUTS. BREAK INDIVIDUAL WIRES ONE AT A TIME TO LESSEN SHOCK TO THE GIRDER. STRANDS SHALL BE RELEASED IN A SYMMETRICAL MANNER ABOUT GIRDER CENTERLINE STARTING FROM THOSE FARTHEST FROM THE GIRDER CENTERLINE AND WORKING INWARDS.
4. WITHIN 24 HOURS OF CUTTING TEMPORARY STRANDS, REMOVE ALL MOISTURE IN BLOCKOUTS PRIOR TO FILLING THEM WITH NON–SHRINK GROUT.

PRETENSIONED TEMPORARY TOP STRANDS

AS NOTED

PRESTRESSING NOTES:

1. JACKING FORCE (P):
   THE JACKING FORCE REQUIRED AT THE POINT OF CONTROL ALONG THE SPAN. THE JACKING FORCE DOES NOT INCLUDE ANY FABRICATION SPECIFIC LOSSES.
2. CONCRETE STRENGTH: f'ci IS AT TIME OF INITIAL STRESSING.
   f'c IS AT 28 DAYS.
3. DEFLECTION COMPONENTS ARE INFORMATIONAL AND WILL BE USED TO SET SCREED LINE ELEVATIONS.
4. PRESTRESSING STRANDS SHALL BE 0.6" DIA 270 ksi LOW RELAXATION.
5. STRAND LOCATIONS MAY BE ADJUSTED AS ALLOWED BY THE ENGINEER.
6. TOP TEMPORARY STRANDS ARE DEBONDED ALONG FULL LENGTH OF GIRDER EXCEPT FOR A LENGTH OF 10 FEET AT EACH END OF THE GIRDER. TEMPORARY STRANDS SHALL BE DETENSIONED AFTER ERECTION OF GIRDERS AND PRIOR TO CONSTRUCTION OF INTERMEDIATE DIAPHRAGMS. THE CONTRACTOR SHALL PROVIDE DESIGN CALCULATIONS FOR THE ENGINEER'S REVIEW.
7. TOP TEMPORARY STRANDS ARE PRE–TENSIONED AT THE SAME TIME AS PERMANENT STRANDS. POST–TENSIONING WITH UNBONDED STRANDS MAY BE USED FOR TEMPORARY PRESTRESSING AS APPROVED BY THE ENGINEER. TEMPORARY STRANDS SHALL BE POST–TENSIONED BEFORE LIFTING OF GIRDERS FROM CASTING BED.

GIRDER NOTES:

1. SURFACE OF END AND SIDE FACES OF PRECAST GIRDER IN CONTACT WITH THE CIP DIAPHRAGMS SHALL BE ROUGHENED. SEE "ELEVATION" ON "GIRDER DETAILS NO. 1" SHEET FOR LIMITS OF ROUGHENED SURFACE AT PRECAST GIRDER ENDS.
2. FOR LOCATIONS OF INTERMEDIATE DIAPHRAGMS, SEE "PLAN" ON "GIRDER LAYOUT" SHEET.
3. GIRDER ENDS TO BE CAST SUCH THAT A LEVEL SURFACE IS PROVIDED AT BEARING PADS.
4. THIS SHEET SHALL BE READ WITH "GIRDER DETAILS NO. 1", AND "GIRDER DETAILS NO. 3" SHEETS.

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:

KELLY BURNELL, P.E. — 72986 R.C.E. No. — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82126 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 9/7/2025
T. BRITTAIN
SCALE AS NOTED
K. BURNELL

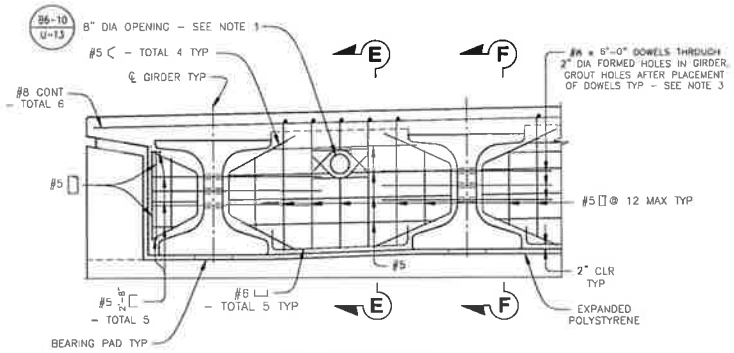
GIRDER DETAILS NO. 2

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-923
COUNTY PROJECT NO. 72948NF

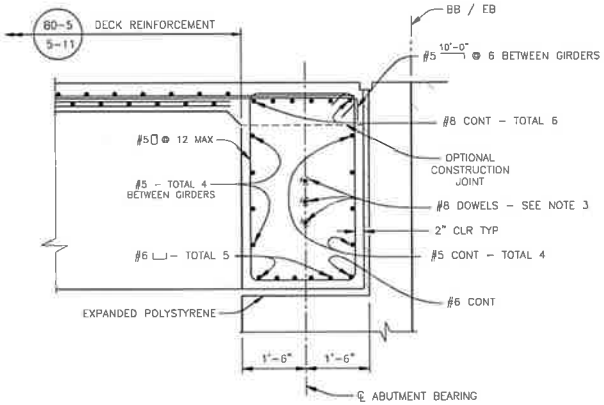
S-14

SHEET 28 OF 36



END DIAPHRAGM

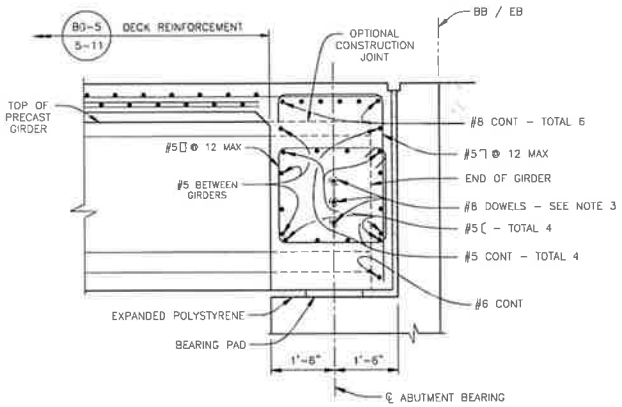
1/2" = 1'-0"



NOTE: ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

SECTION E-E

3/4" = 1'-0"



NOTE: ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.

SECTION F-F

3/4" = 1'-0"

NOTES:

1. FOR UTILITY OPENING LOCATION, SEE "TYPICAL SECTION" SHEET.
2. REINFORCING BAR LOCATIONS MAY BE ADJUSTED WITH THE ENGINEER'S APPROVAL TO AVOID CONFLICTS WITH UTILITY OPENING.
3. FOR LOCATIONS OF DOWELS, SEE "GIRDER DETAILS NO. 1" SHEET.

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770 FIRST AVENUE, SUITE 400 SAN DIEGO, CA. 92101 (619) 831-4600

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

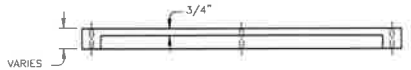
DATE 9/11/26
DESIGNED T. BRITTAIN
SCALE AS NOTED
CHECKED K. BURNELL

GIRDER DETAILS NO. 2

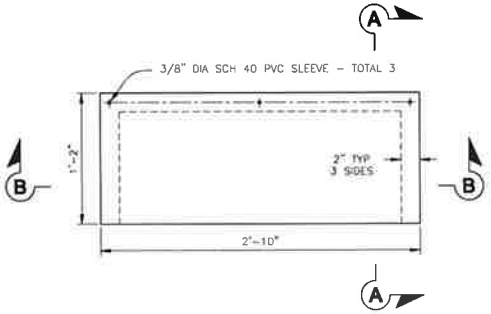
BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-323
COUNTY PROJECT NO. 7594RP

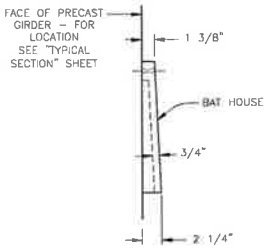
SHEET S-15
SHEET 27 OF 35



SECTION B-B



ELEVATION



SECTION A-A

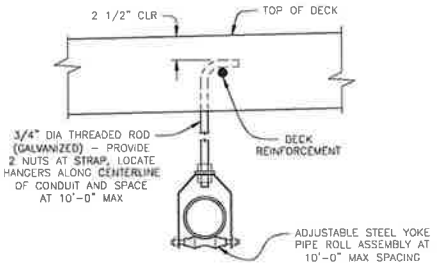
BAT HOUSE LOCATIONS	
LOCATION ALONG ℄ BRIDGE	NUMBER PER GIRDER
STA 9+75.50 TO STA 10+31.00	18

NOTES:

1. USE 3/8" DIA SCH 40 PVC PIPES X 1 3/4". HILTI KWIK BOLTS KB 14–314 (1/4 X 3 1/4) f'ci = 4,000 PSI (LIGHTWEIGHT CONCRETE).
2. USE "CHICKEN WIRE" OR EQUIVALENT FOR REINFORCEMENT IN 3/4" SLAB.
3. PLACE ALL BAT ROOSTS NEXT TO EACH OTHER IN DESIGNATED SPANS.

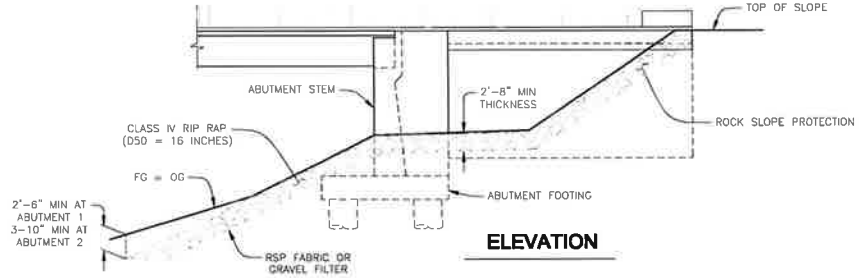
BAT HOUSE DETAILS

2" = 1'-0"

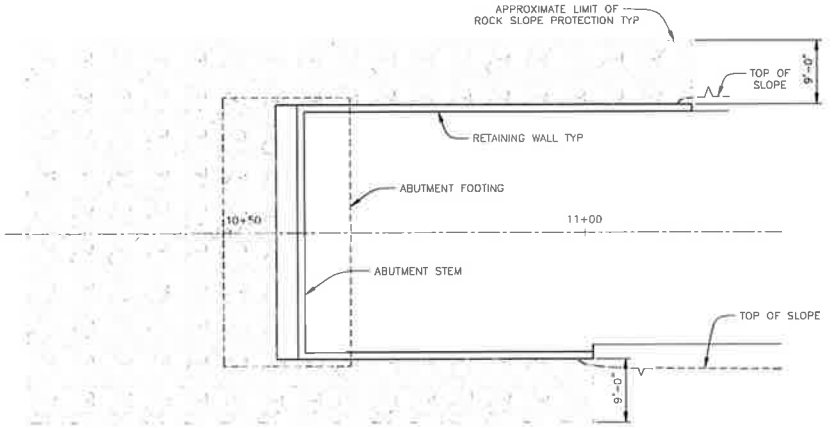


CONDUIT HANGER DETAIL

NO SCALE



ELEVATION



PLAN

NOTES:

1. ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR.
2. INSTALLED RIP RAP ROCK SHALL BE D50 = 16", CLASS IV RIP RAP.
3. RIP RAP TO BE INSTALLED AT A MINIMUM THICKNESS OF 32".
4. KEY IN THE SIDE SLOPES OF EASTERLY AND WESTERLY RIP RAP LIMITS (NEAR RIGHT-OF-WAY), MINIMUM OF 2 LINEAR FEET.
5. KEY IN THE RIP RAP TOE SLOPES, MINIMUM OF 2'–6" AT ABUTMENT 1 AND 3'–10" AT ABUTMENT 2.

ROCK SLOPE PROTECTION

NO SCALE

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — DATE — 12/31/25 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 9/1/25
DRAWN T. BRITTAIN
SCALE AS NOTED
CHECKED K. BURNELL

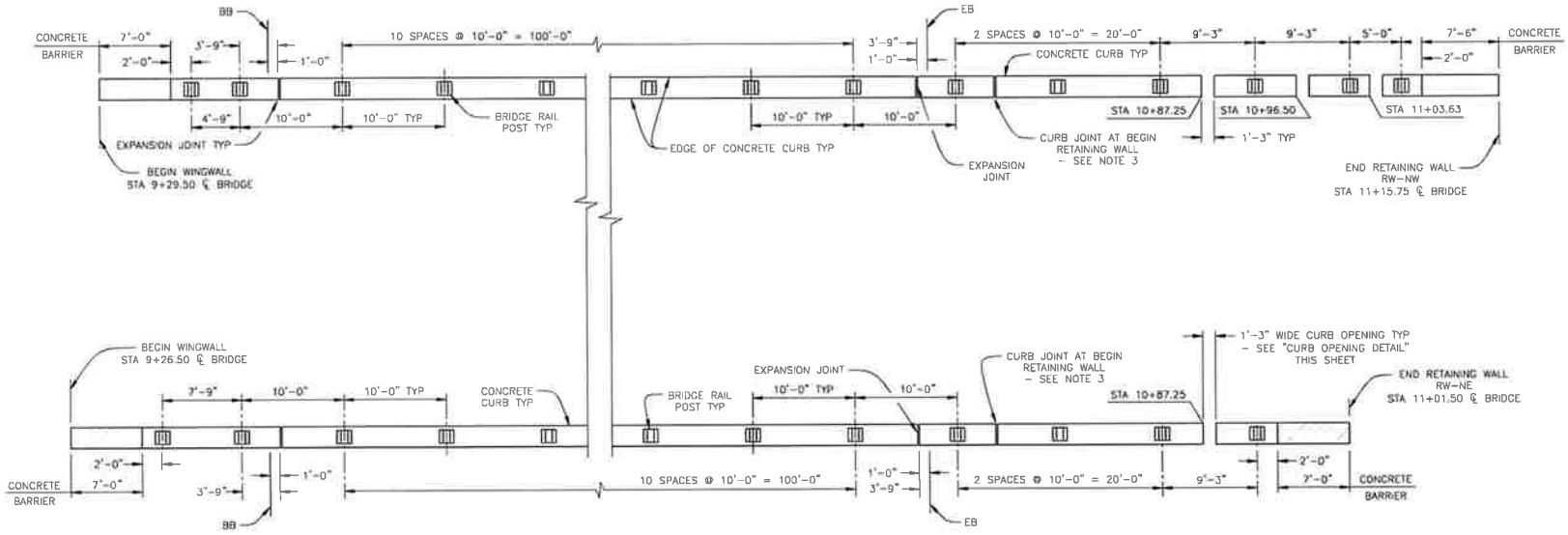
MISCELLANEOUS DETAILS NO. 1

BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0185

COUNTY REFERENCE NO. 8-325
COUNTY PROJECT NO. TSM&RP

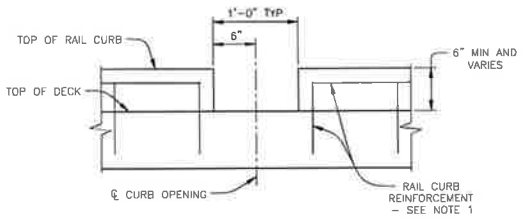
S-18

SHEET 28 OF 36



BRIDGE RAIL POST LAYOUT

NO SCALE



CURB OPENING DETAIL

1 1/2" = 1'-0"

NOTES:

1. FOR BRIDGE RAIL DETAILS, SEE CALTRANS STANDARD PLANS SHEETS B11-200, B11-201, AND B11-202.
2. FOR ADDITIONAL RAIL AND POST DETAILS, SEE CALTRANS STANDARD PLANS SHEETS B11-220, B11-221, AND B11-222.
3. NO SPLICES ARE PROVIDED IN RAILINGS AT LOCATION OF BEGINNING OF RETAINING WALLS.

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REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72585 R.C.E. No. — 12/31/26 REG. EXP. — DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
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COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

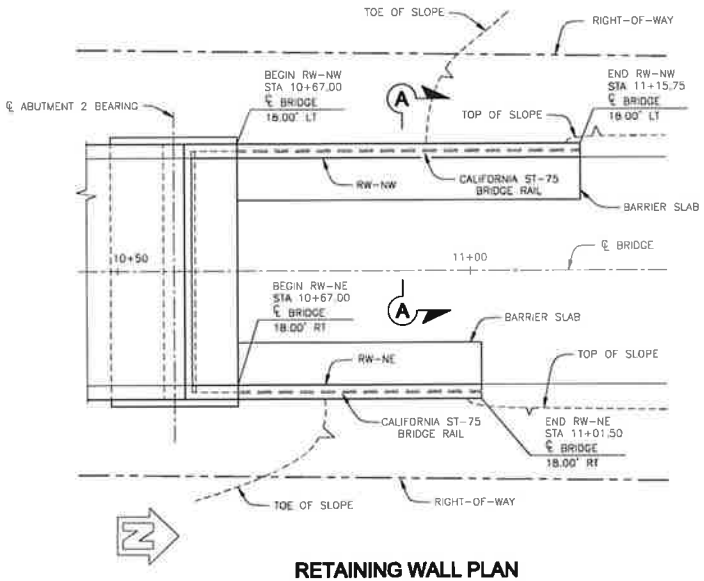
MISCELLANEOUS DETAILS NO. 2

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-3170
COUNTY PROJECT NO. TSHABRF

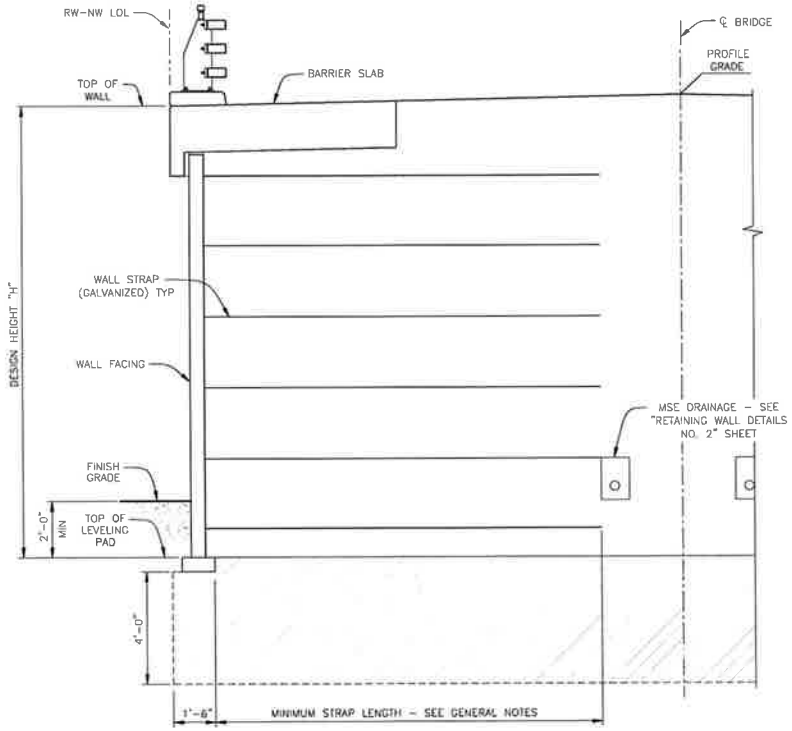
S-17

SHEET 29 OF 36



RETAINING WALL PLAN

1/8" = 1'-0"



LEGEND:

- STRUCTURE BACKFILL (RELATIVE COMPACTION ≥ 95%)
- PERMEABLE MATERIAL
- LIMITS OF SUBGRADE PREPARATION

TYPICAL SECTION A-A

1/2" = 1'-0"

GENERAL NOTES
LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION AND THE CALIFORNIA AMENDMENTS, PREFACE DATED APRIL 2009 WITH OCTOBER 2019 ERRATA

LIVE LOAD: SURCHARGE = 240 LB/FT^2

SOIL PARAMETERS: INTERNAL DESIGN ϕ = 34°, γ = 120 LB/FT^3
EXTERNAL DESIGN ϕ (RETAINED BACKFILL) = 34°, γ = 120 LB/FT^3
K_h = 0.29

NOTES:

1. KLEINFELDER HAS PERFORMED THE EXTERNAL STABILITY DESIGN AND GLOBAL STABILITY ANALYSIS FOR THE PROJECT MSE WALLS. MINIMUM STRAP LENGTHS ARE PROVIDED HEREIN TO SATISFY THESE REQUIREMENTS.
2. THE MSE SYSTEM DESIGNER IS RESPONSIBLE FOR INTERNAL STABILITY DESIGN.
3. FINAL STRAP LENGTHS FOR THE MSE WALLS SHALL NOT BE LESS THAN REQUIRED TO SATISFY ALL OF THE CRITERIA NOTED ABOVE.

MINIMUM STRAP LENGTH (FEET)

DESIGN HEIGHT "H" (FEET)	RW-NW	RW-NE
13'-6"	11'-6"	N/A
16'-0"	14'-0"	14'-0"

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REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — 12/31/26 REG. EXP. — DATE

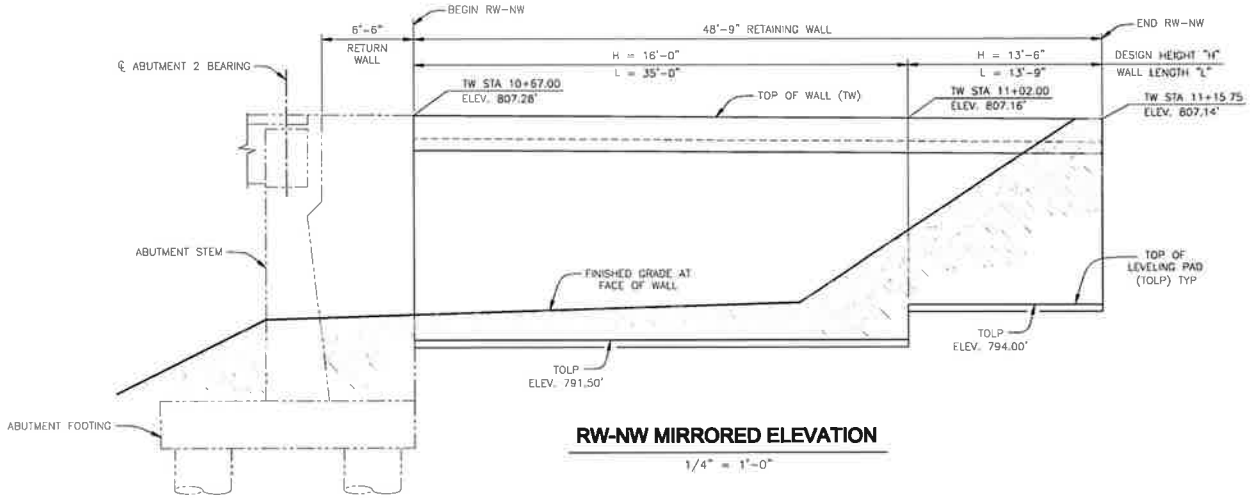
COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — 09/30/27 REG. EXP. — DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

RETAINING WALL GENERAL PLAN

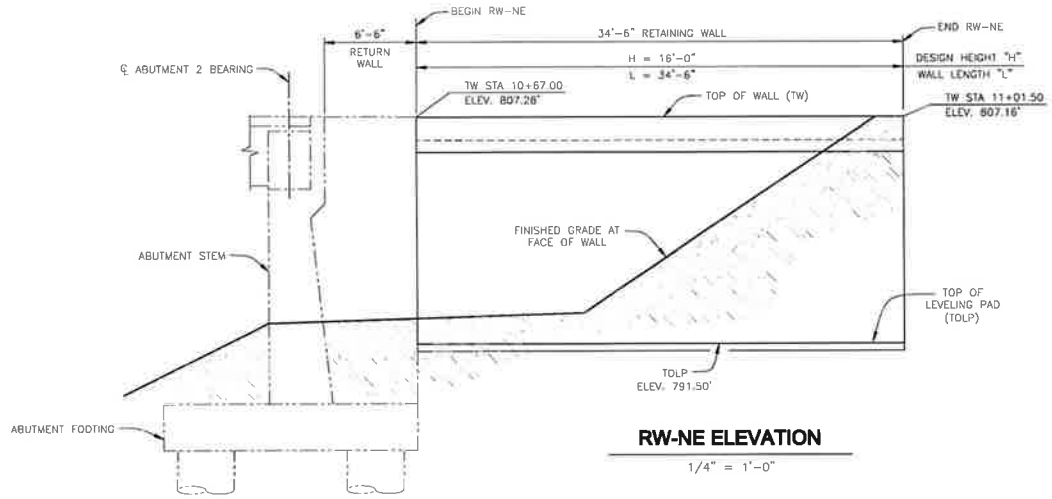
BRANDT ROAD BRIDGE OVER ALAMO RIVER
REPLACEMENT PROJECT
EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-928
COUNTY PROJECT NO. 7284BRF
S-18
SHEET 30 OF 36



RW-NW MIRRORED ELEVATION

1/4" = 1'-0"



RW-NE ELEVATION

1/4" = 1'-0"

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:

KELLY BURNELL, P.E. — 72985 R.C.E. No.

DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No.

DATE — 06/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

RETAINING WALL DETAILS NO. 1

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-703 — S-19

COUNTY PROJECT NO. 703HBRP — SHEET 31 OF 35

DESIGN DATA (BARRIER SLABS)

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION WITH CALIFORNIA AMENDMENTS, PREFACE DATED APRIL 2019

F_t = 54 KIPS ON BARRIER

EQE: K_h = 0.29

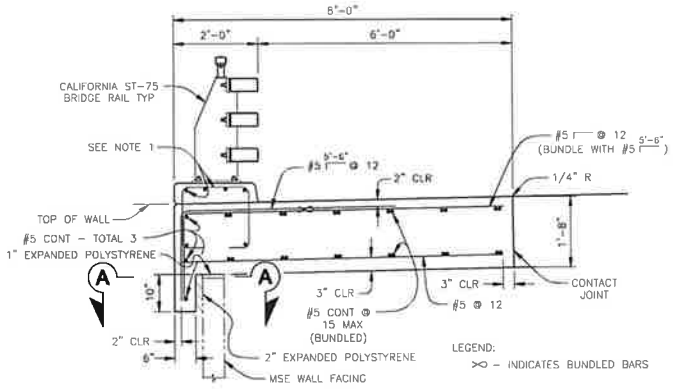
K_v = 0

REINFORCED CONCRETE:

f'c = 3,600 PSI

fy = 60 KSI

n = 8

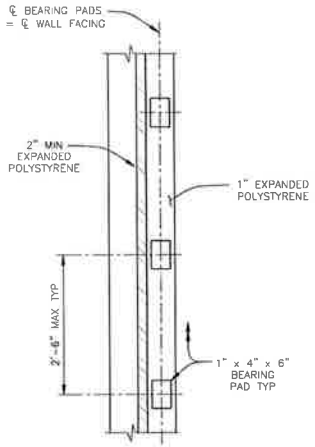


NOTES:

1. FOR CURB REINFORCEMENT, SEE CALTRANS STANDARD PLANS SHEET B11-201.
2. NO EXPANSION JOINTS IN BARRIER SLAB WITHIN WALL LIMITS.

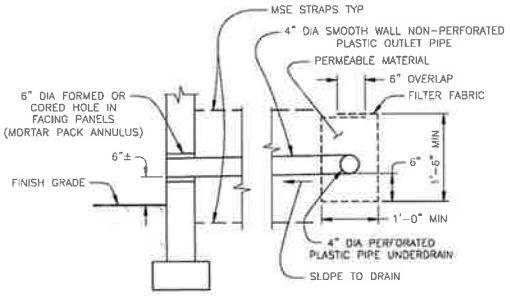
CONCRETE BARRIER SLAB

3/4" = 1'-0"



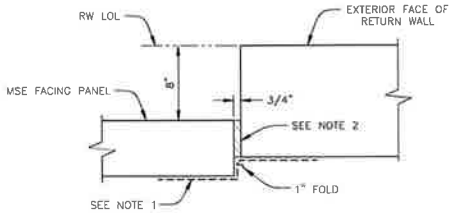
SECTION A-A

1" = 1'-0"



MSE DRAINAGE DETAILS

NO SCALE



NOTES:

1. BOND A 1'-6" WIDE STRIP OF FILTER FABRIC TO BACK OF MSE PANELS AND THE ADJACENT CONCRETE WALL FOR ENTIRE LENGTH OF VERTICAL JOINT.
2. BOND EXPANSION JOINT MATERIAL TO THE CONCRETE WALL.

MSE FACING PANEL TO RETURN WALL JOINT DETAIL

NO SCALE

KLEINFELDER

REVISION	DATE	COMMENTS

PREPARED UNDER THE SUPERVISION OF:
KELLY BURNELL, P.E. — 72985 R.C.E. No. — DATE — 12/31/26 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 82028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

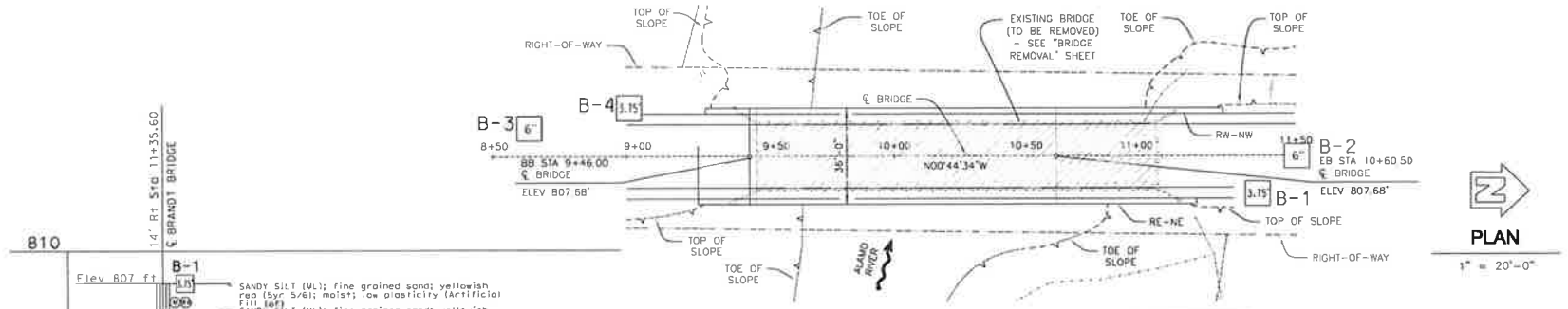
RETAINING WALL DETAILS NO. 2

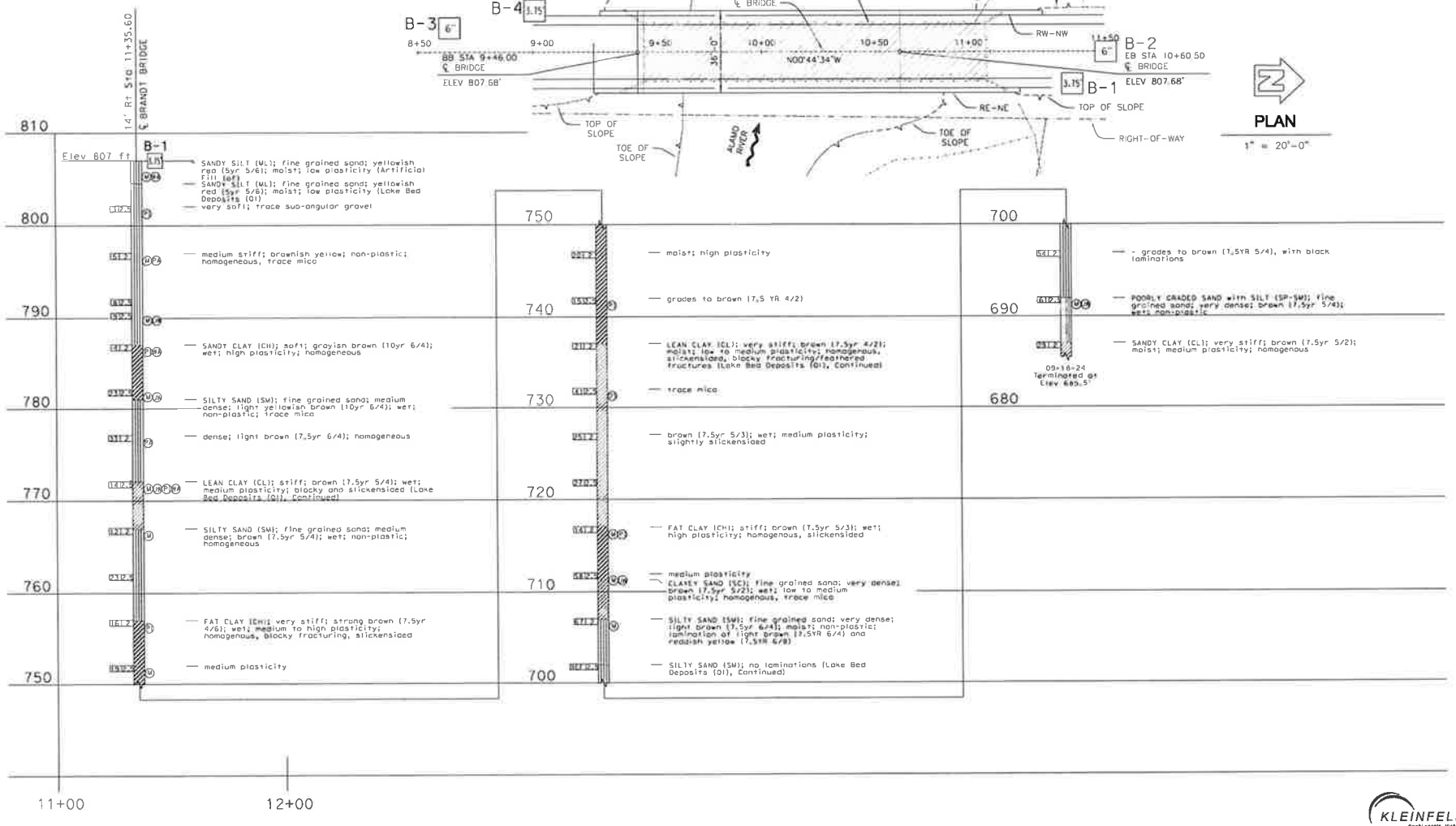
BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7094BRP

S-20

SHEET 32 OF 35





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REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
SPENCER FLOYD, P.E. — 96209 R.C.E. No. — 9-30-2026 REG. EXP. — DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 67028 R.C.E. No. — 09/30/27 REG. EXP. — DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 9/30/2025
DESIGNED D. FAHRNEY
DRAWN
CHECKED
K. CRUDMAN

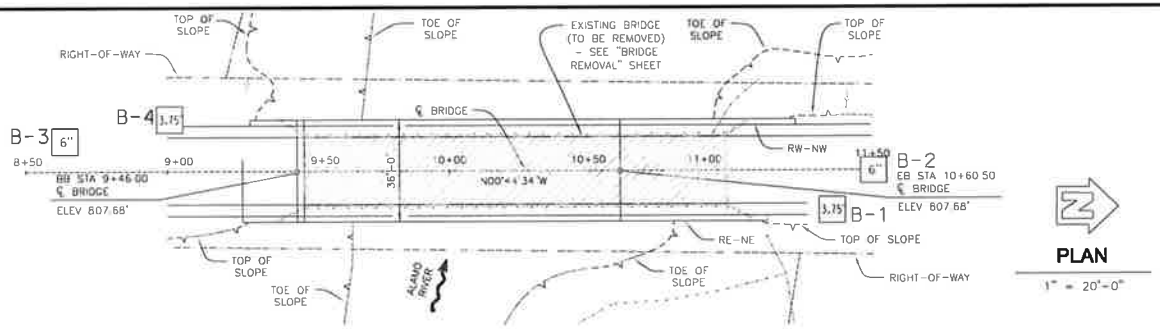
LOG OF TEST BORINGS NO. 1

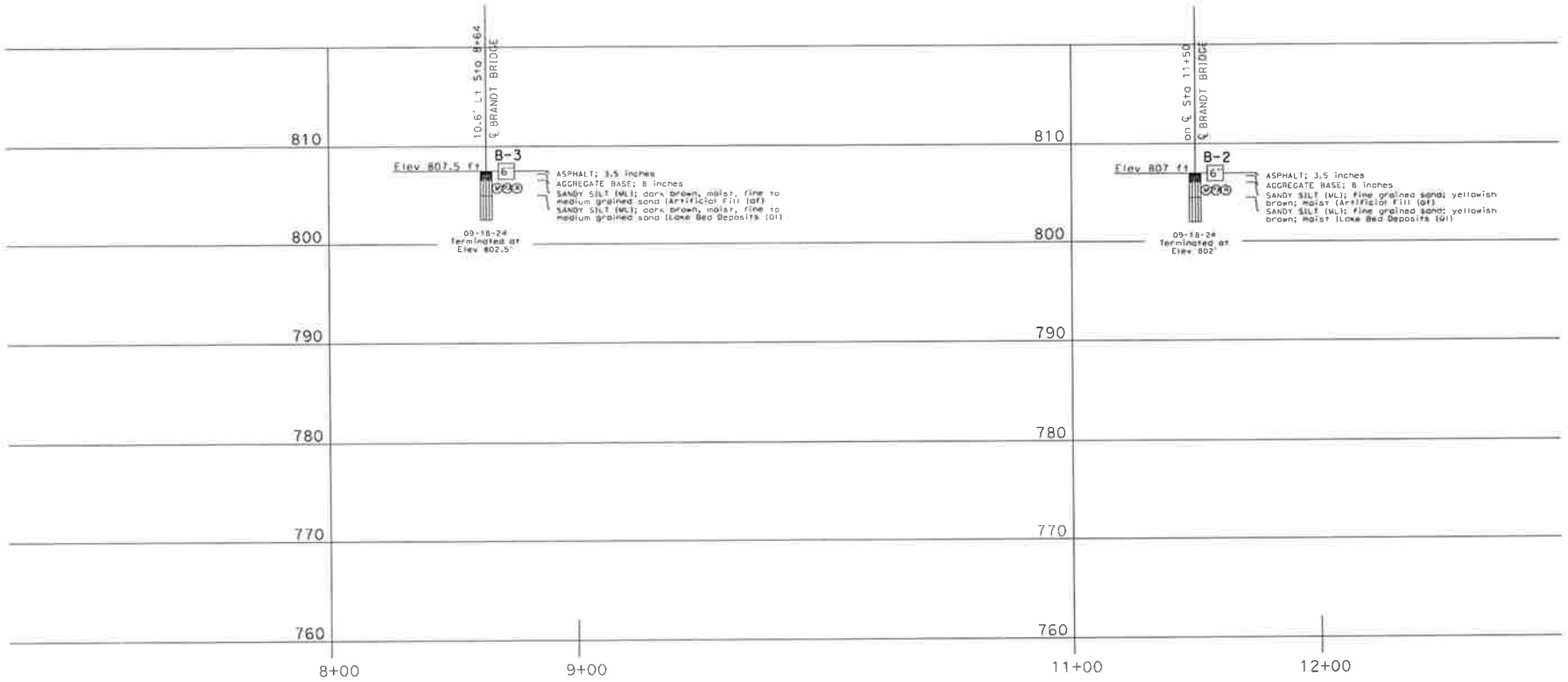
BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. BRNBRP
S-21
SHEET 33 OF 36

ORIGINAL SCALE: 0 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" INCHES — 95% SUBMITTAL — NOT FOR CONSTRUCTION

FILE PATH: C:\Users\DFahrney\OneDrive - Kleinfelder\CADD\25001840\LOTBs\25001840_Brandt-Bridge_LOTB.dwg PLOT DATE: 10/6/2025 5:46 PM





KLEINFELDER
772 FIRST AVENUE, SUITE 400 SAN DIEGO, CA 92101 (619) 831-4600

REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:

SPENCER FLOYD, P.E. — 86208 R.C.E. No. — 9-30-2026 REG. EXP. — DATE

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:

JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No. — 09/30/27 REG. EXP. — DATE

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

DATE 9/29/2025
DRAWN D. FAHRNEY
SCALE AS SHOWN
CHECKED K. GRESHAM

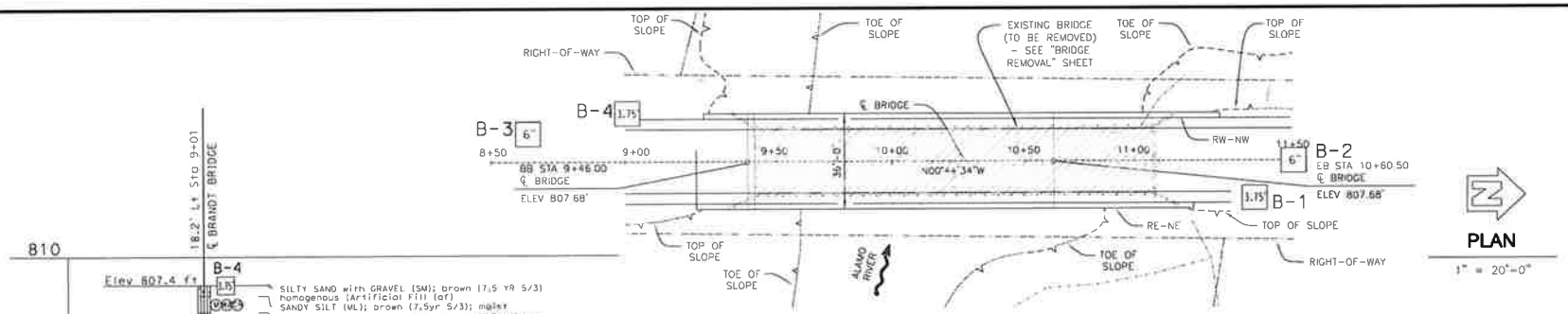
LOG OF TEST BORINGS NO. 2

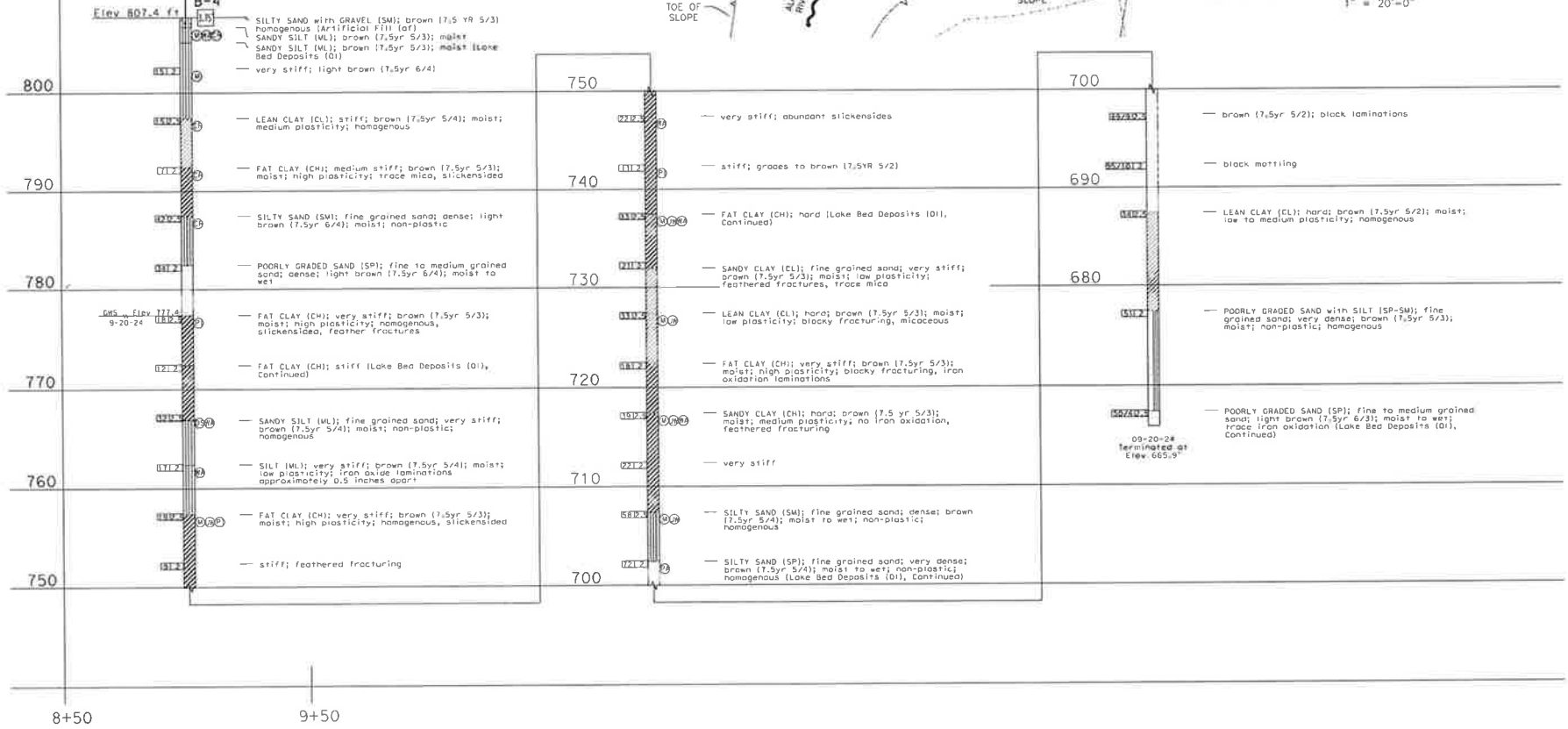
BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO: B-203
COUNTY PROJECT NO. 7094BRF
S-22
SHEET 34 OF 35

ORIGINAL SCALE: 1"

FILE PATH: C:\Users\DFahrney\OneDrive - Kleinfelder\CADD\25001840\LOTBs\25001840_Brandt-Bridge_LOTB.dwg PLOT DATE: 10/6/2025 5:46 PM





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REVISION	DATE	COMMENTS

PREPARED UNDER THE DIRECT SUPERVISION OF:
SPENCER FLOYD, P.E. — 96209 R.C.E. No. — DATE — 9-30-2026 REG. EXP.

COUNTY OF IMPERIAL PUBLIC WORKS DEPARTMENT APPROVED FOR CONSTRUCTION BY:
JOHN A. GAY, P.E. DIRECTOR OF PUBLIC WORKS — 62028 R.C.E. No. — DATE — 09/30/27 REG. EXP.

PUBLIC WORKS DEPARTMENT
COUNTY OF IMPERIAL
EL CENTRO, CALIFORNIA

LOG OF TEST BORINGS NO. 3

BRANDT ROAD BRIDGE OVER ALAMO RIVER REPLACEMENT PROJECT EXISTING BRIDGE NO. 58C0165

COUNTY REFERENCE NO. B-203
COUNTY PROJECT NO. 7054BRF
S-23
SHEET 35 OF 35

ORIGINAL SCALE:

FILE PATH: C:\Users\DFahrney\OneDrive - Kleinfelder\CADD\25001840\LOTBs\25001840_Brandt-Bridge_LOTB.dwg PLOT DATE: 10/6/2025 5:47 PM

RECON

An Employee-Owned Company

March 5, 2026

Mr. Robert Ureña III, PE
Imperial County
Department of Public Works
155 South 11th Street
El Centro, CA 92243

Reference: Air Quality Analysis for the Brandt Road Bridge Replacement Project, Imperial County, California (RECON Number 10513)

Dear Mr. Ureña:

The purpose of this report is to assess potential short-term local and regional air quality impacts resulting from the Brandt Road Bridge Replacement Project (project) consistent with the California Environmental Quality Act (CEQA) review. The analysis of impacts is based on state and federal Ambient Air Quality Standards (AAQS) and is conducted in accordance with regional guidelines, policies, and standards, as well as those of the Imperial County Air Pollution Control District (ICAPCD).

1.0 Project Description

The project is located approximately 2.5 miles southwest of the city of Calipatria, and east of the Salton Sea, in Imperial County, California (Figure 1). The project would replace an existing wood bridge constructed in 1950 that spans the Alamo River. Brandt Road is a two-lane, paved road that extends north and south of the existing bridge. The southern terminus of the existing bridge is located immediately north of an east/west dirt road that intersects with the paved Brandt Road. The segment extending in a westerly direction is named West Bowles Road, and the segment extending in an easterly direction is also named Brandt Road. Agricultural lands are located further to the south. An existing residential use is located immediately northeast of the northern terminus of the bridge, followed by agricultural lands further to the north. Access to the project is provided by the north/south paved Brandt Road from the north or south. Figure 1 shows the regional location. Figure 2 shows an aerial photograph of the project site and vicinity.

The purpose of the project is to replace the existing wood bridge with a new crossing that would satisfy current design and seismic standards. Project objectives include providing a safe and reliable crossing for the public that meets all current design standards, supports agricultural and local vehicle traffic, and accommodates heavy vehicle traffic associated with geothermal, lithium, and other metal extraction industries in the surrounding area. The existing wooden structure consists of an approximately 150-foot-long, ten-span bridge, with pile bents located within the Alamo River. The project would demolish and dispose of the existing bridge and supporting features, followed by the construction of a new single-span bridge within the same alignment. The proposed single-span bridge would not impede the flow of the Alamo River.

Bridge and Approach Road

The proposed two-lane bridge would be located within the same alignment as the existing two-lane bridge. The proposed approaches would consist of two 12-foot-wide lanes and two 8-foot-wide unpaved shoulders with a design speed of 55 miles per hour (mph). The approaches would be tapered to provide a transition between the existing

segments of Brandt Road north and south of the project site that have unpaved shoulders and the replacement bridge that would include paved shoulders.

Staging Area Preparation

Staging areas would be used to store project materials and equipment throughout construction. Staging areas would include existing segments of Brandt Road north and south of the project site, as well as segments of the banks of the Alamo River that front the project site. The affected portion of Brandt Road would be closed during the entire duration of construction. Traffic control, barricades, and construction and detour sign plans would be prepared to ensure no public traffic enters this area.

Bridge Demolition/Removal

The existing bridge abutments and associated piles would be demolished and removed prior to vegetation removal and the construction of the new bridge. Demolition activities would be designed to minimize impacts to the Alamo River. Removal of the existing wooden bridge pile supports would consist of breaking them off at, or just under, the channel bottom surface level. The lateral load imposed by a large excavator would fracture the piles near or below the drain bottom. Once the piles are broken off, they would be lifted out of the drain by an excavator with a chain and transported to an appropriate disposal facility. The use of a temporary sheet pile containment system and removal of the temporary sheet piles would result in a larger amount of "dirty water" than breaking them off without containment. The abutment piles, most of which are exposed due to drain bank erosion, would be removed in a similar manner. All work would need to occur while the river is flowing, with no proposed bypass or containment. All equipment required for removal of the existing bridge abutments and piles would be staged and operated from the banks of the river and/or Brandt Road.

Site Preparation

Vegetation would be removed during site preparation to clear the channel for the placement of any slope protection at the proposed bridge abutments. This may be performed after bridge demolition and removal, including the removal of existing wood piles from the Alamo River channel.

Road Replacement

After bridge construction is complete, the Brandt Road approaches, extending approximately 200-feet in each direction, would be placed. The structural section of the roadway would consist of aggregate base and asphalt concrete with striping and any signage needed to match existing roadway on each side of the bridge. The approaches would also include drainage features that would prevent erosion of the riverbanks.

Water Consumption

Project construction would use water for dust control during ground-disturbing and earth compaction activities. Water would likely be obtained from a nearby Imperial Irrigation District canal, through the Imperial Irrigation District encroachment permit process.

Traffic Control and Detour

The affected portion of Brandt Road would be closed during the entire duration of construction to ensure safety. Nearby roads primarily serving existing agricultural and geothermal uses would be used for detours. These would include Eddins Road north of the existing bridge and Rutherford Road south of the existing bridge. Kalin Road, approximately one mile west of Brandt Road, would serve as the north-south alternate.

Right-of-Way

The project would not require acquisition of any new right of way, as the replacement bridge would be constructed entirely within the existing right of way of Brandt Road. Similarly, all construction staging areas would also be located entirely within the right-of-way of existing County of Imperial (County) roads. The proposed approaches to the replacement bridge would consist of two 12-foot-wide lanes and two 8-foot-wide unpaved shoulders. The approaches would be tapered to provide a transition between the transition between the existing segments of Brandt Road north and south of the project site that have unpaved shoulders and the replacement bridge that would include paved shoulders.

2.0 Environmental Setting

2.1 Regulatory Setting

2.1.1 Federal Regulations

AAQS represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 (42 U.S. Code [U.S.C.] 7401) for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the CAA [42 U.S.C. 7409], the U.S. Environmental Protection Agency (U.S. EPA) developed primary and secondary National AAQS (NAAQS).

Six pollutants of primary concern were designated: ozone, carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), particulate matter with a diameter of 10 microns and less (PM_{10}), and particulate matter with a diameter of 2.5 microns and less ($PM_{2.5}$). The primary NAAQS "in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health . . . ." and the secondary standards ". . . protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" [42 U.S.C. 7409(b)(2)]. The primary NAAQS were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties). The NAAQS are presented in Table 1 (California Air Resources Board [CARB] 2024).

If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as non-attainment area for that pollutant. The project is located within the Salton Sea Air Basin (SSAB). The county is classified as a federal moderate non-attainment area for the 2008 8-hour ozone standards, marginal non-attainment area for the 2015 8-hour ozone standards, and a partial moderate non-attainment area for the $PM_{2.5}$ standards.

2.1.2 State Regulations

Criteria Pollutants

The CARB has developed the California AAQS (CAAQS) and generally has set more stringent limits on the criteria pollutants than the NAAQS (see Table 1). In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide, and vinyl chloride.

Table 1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	No Separate State Standard		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	9 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-dispersive Infrared Photometry	35 ppm (40 mg/m³)	–	Non-dispersive Infrared Photometry
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m³)	–	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		0.053 ppm (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3 Hour	–		–	0.5 ppm (1,300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[11]	–	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	–		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m³	Ion Chroma-tography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chroma-tography			

Table 1
Ambient Air Quality Standards

NOTES:
ppm = parts per million; ppb = parts per billion; $\mu g/m^3$ = micrograms per cubic meter; – = not applicable.

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

[8] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On February 7, 2024, the national annual $PM_{2.5}$ primary standard was lowered from 12.0 $\mu g/m^3$ to 9.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standards of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[14] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

SOURCE: CARB 2024.

Similar to the federal CAA, the state classifies either "attainment" or "non-attainment" areas for each pollutant based on the comparison of measured data with the CAAQS. The county is a non-attainment area for the state ozone standards and the state PM_{10} standard. The California CAA, which became effective on January 1, 1989, requires all areas of the state to attain the CAAQS at the earliest practicable date. The California CAA has specific air quality management strategies that must be adopted by the agency responsible for the non-attainment area. In the case of the SSAB, the agency responsible is the ICAPCD.

Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. Diesel particulate matter (DPM) emissions have been identified as TACs. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The California Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air.

The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels.

The Children's Environmental Health Protection Act, California Senate Bill 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires CARB to review its air quality standards from a children's health perspective, evaluate the statewide air monitoring network, and develop any additional air toxic control measures needed to protect children's health. Locally, toxic air pollutants are regulated through the ICAPCD Regulation X. Of particular concern statewide are DPM emissions. DPM was established as a TAC in 1998 and is estimated to represent a majority of the cancer risk from TACs statewide (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB and are listed as carcinogens either under the state's Proposition 65 or under the federal Hazardous Air Pollutants program.

Following the identification of DPM as a TAC in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from DPM. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (CARB 2000). To monitor the effectiveness of the efforts to reduce DPM, CARB has supported field campaigns that measure real-world emissions from heavy-duty vehicles, and results indicate that regulations aimed at reducing emissions of DPM have been successful.

In April 2005, CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005). The handbook makes recommendations directed at protecting sensitive land uses from air pollutant emissions while balancing a myriad of other land use issues (e.g., housing, transportation needs, economics, etc.). Sensitive land uses include, but are not limited to, schools, hospitals, residences, resident care facilities, and day-care centers. The handbook is not regulatory or binding on local agencies and recognizes that application takes a qualitative approach. Therefore, the CARB has provided guidelines for the siting of land uses near heavily traveled roadways. Of pertinence to this study, the CARB guidelines indicate that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles/day should be avoided when possible.

As an ongoing process, CARB will continue to establish new programs and regulations for the control of DPM and other air-toxics emissions as appropriate. The continued development and implementation of these programs and policies will ensure that the public's exposure to DPM and other TACs will continue to decline.

State Implementation Plan

The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the NAAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as air quality management plans, monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. The CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. The CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the Federal Register. All of the items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

The ICAPCD is the air district responsible for the project area. Applicable ICAPCD SIPs include the following:

- Imperial County 2009 State Implementation Plan for Particulate Matter Less than 10 Microns in Aerodynamic Diameter;
- Imperial County 2013 State Implementation Plan for the 2006 24-Hour $PM_{2.5}$ Moderate Non-attainment Area;
- Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard;
- Imperial County 2018 State Implementation Plan for the 2012 Annual Standard for Particulate Matter Less Than 2.5 Microns in Diameter; and
- Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter Less Than 10 Microns in Diameter.

California Environmental Quality Act

Section 15125(d) of the CEQA Guidelines requires discussion of any inconsistencies between the project and applicable general plans and regional plans, including the applicable air quality attainment or maintenance plan (or SIP).

2.1.3 Local Regulations

CEQA Air Quality Handbook

The ICAPCD adopted its *CEQA Air Quality Handbook: Guidelines for the Implementation of the California Environmental Quality Act of 1970* (ICAPCD CEQA Air Quality Handbook) in 2007 and amended the handbook in December 2017 (ICAPCD 2017a). The ICAPCD CEQA Air Quality Handbook provides guidance on how to determine the significance of impacts, including air pollutant emissions, related to the development of residential, commercial, and industrial projects. Where impacts are determined to be significant, the ICAPCD CEQA Air Quality Handbook provides guidance to mitigate adverse impacts to air quality from development projects.

Stationary Source Permitting

Pursuant to ICAPCD Rule 207 (New and Modified Stationary Source Review) and associated rules such as Rule 201 (Permits Required) and Rule 208 (Permit to Operate), the construction, installation, modification, replacement, and operation of any equipment which may emit air contaminants requires ICAPCD permits. The ICAPCD requires that all such equipment be assessed for its potential to result in health risk impacts and that permits to operate equipment must be renewed annually while the equipment is in use or upon its modification.

Policy Number 5, Off-site Mitigation/In-Lieu Fee

The ICAPCD issued Policy Number 5, Off-site Mitigation/In-lieu Fee in April 2014. The policy references the ICAPCD CEQA Air Quality Handbook and discusses how project proponents may achieve additional mitigation by either proposing an off-site mitigation project or paying an in-lieu mitigation fee. Mitigation fees collected by the ICAPCD are used to fund the emissions offsets projects through the ICAPCD Carl Moyer Memorial Air Quality Standards Attainment Program (Carl Moyer Program). Specific projects funded by the program achieve emissions reductions by replacing old, highly polluting equipment with newer, cleaner equipment earlier than required by regulation or through normal attrition. As outlined in Policy Number 5, total in-lieu fees for mitigation of construction emissions are calculated based on the quantity and duration of the project's construction emissions and the cost-effectiveness of the Carl Moyer Program for offsetting oxides of nitrogen (NO_X) and PM_{10} emissions.

Operational Development Fee Mitigation Program

Adopted in November 2007, Rule 310, Operational Development Fee Mitigation Program, is designed to assist in the reduction of excess air emissions resulting from new residential and commercial development (warehousing is considered a commercial use under the program) in Imperial County. Funds collected by the program are used to offset NO_X and PM_{10} emissions through local emissions reduction projects, such as paving unpaved roadways to reduce fugitive dust.

Fugitive Dust Control

The ICAPCD Regulation VIII regulates emissions of fugitive dust. Fugitive dust is:

> Particulate Matter entrained in the ambient air which is caused from man-made and natural activities such as, but not limited to, movement of soil, vehicles, equipment, blasting, and wind. This excludes Particulate Matter emitted directly in the exhaust of motor vehicles or other fuel combustion devices, from portable brazing, soldering, or welding equipment, pile drivers, and stack emissions from stationary sources (ICAPCD, Rule 800 (c)(18)).

Regulation VIII includes the following specific rules:

- Rule 800–Fugitive Dust Requirements for Control of $PM_{2.5}$
- Rule 801–Construction and Earthmoving Activities
- Rule 802–Bulk Materials
- Rule 803–Carry Out and Track Out
- Rule 804–Open Areas
- Rule 805–Paved and Unpaved Roads
- Rule 806–Conservation Management Practices

ICAPCD Rule 428

Adopted on September 11, 2018, Rule 428, Wood Burning Appliances, is intended to limit emissions of particulate matter from wood burning appliances. This rule applies to any person who manufactures, sells, offers for sale, or operates a permanently installed, indoor or outdoor, wood burning appliance within the Imperial County $PM_{2.5}$ non-attainment area. This rule also applies to any person who installs a wood burning appliance in any residential or commercial, single- or multi-building unit within the Imperial County $PM_{2.5}$ non-attainment area.

2.2 Existing Air Quality

2.2.1 Climate and Meteorology

Climate conditions at the project site, like the rest of Imperial County, are governed by the large-scale sinking and warming of air in the semi-permanent tropical high-pressure center of the Pacific Ocean. The high-pressure ridge blocks out most storms except in winter when it is weakest and farthest south. The coastal mountains prevent the intrusion of any cool, damp air found in California coastal environs. Because of the barrier and weakened storms, Imperial County experiences clear skies, extremely hot summers, mild winters, and little rainfall (ICAPCD 2017b).

Winters are mild and dry, with daily average temperatures ranging between 65 and 75 degrees Fahrenheit. Summers are extremely hot, with daily average temperatures ranging between 104 and 115 degrees Fahrenheit. The flat terrain and the strong temperature differentials created by intense solar heating result in moderate winds and deep thermal convection. The combination of subsiding air, protective mountains, and distance from the ocean all combine to severely limit precipitation (ICAPCD 2017b).

Imperial County experiences surface inversions almost every day of the year. Due to strong surface heating, these inversions are usually broken and allow pollutants to be more easily dispersed. In some circumstances, the presence of the Pacific high-pressure cell can cause the air to warm to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, can act as a nearly impenetrable lid to the vertical mixing of pollutants. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the buildup of pollutants. Highest and worst-case ozone levels are often associated with the presence of subsidence inversions (ICAPCD 2017b).

The large daily oscillation of temperature produces a corresponding large variation in the relative humidity. Nocturnal humidity rises to 50 to 60 percent but drops to about 10 percent during the day. Prevailing winds are from the west-northwest through southwest; a secondary flow maximum from the southeast is also evident. The prevailing winds from the west and northwest occur seasonally from fall through spring and are known to be from the Los Angeles area. Occasionally, Imperial County experiences periods of extremely high wind speeds. Wind speeds can exceed 31 mph, and this occurs most frequently during the months of April and May. However, speeds of less than 6.8 mph account for more than one-half of the observed wind measurements (ICAPCD 2017b).

2.2.2 Background Air Quality

Air quality at a particular location is a function of the kinds, amounts, and dispersal rates of pollutants being emitted into the air locally and throughout the basin. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the U.S. EPA. The ICAPCD maintains air quality monitoring stations throughout the SSAB. Air pollutant concentrations and meteorological information are continuously recorded at these stations. Measurements are then used by scientists to help forecast daily air pollution levels.

The Niland–English Road monitoring station, located at 7711 English Road, approximately seven miles north of the project site, and the Westmorland monitoring station, located at 202 West First Street approximately seven miles southwest of the project site, are the nearest monitoring stations. The Niland–English Road and Westmorland monitoring stations measure ozone and PM_{10}. Table 2 provides a summary of measurements collected at these monitoring stations for the years 2021 through 2023.

Table 2
Summary of Air Quality Measurements Recorded at the El Centro Monitoring Station

Pollutant/Standard	2021	2022	2023
Niland–English Road Monitoring Station			
Ozone			
Federal Max 8-hour (ppm)	0.055	0.062	0.077
Days 2015 Federal 8-hour Standard Exceeded (0.07 ppm)	0	0	2
Days 2008 Federal 8-hour Standard Exceeded (0.075 ppm)	0	0	1
State Max 8-hour (ppm)	0.055	0.062	0.077
Days State 8-hour Standard Exceeded (0.07 ppm)	0	0	2
Max. 1-hour (ppm)	0.065	0.070	0.082
Days State 1-hour Standard Exceeded (0.09 ppm)	0	0	0
PM_{10}*			
Federal Max. Daily ($\mu g/m^3$)	211.2	470.2	491.9
Measured Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	4	9	13
Calculated Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	4.0	9.2	13.5
Federal Annual Average ($\mu g/m^3$)	39.8	47.5	45.6
State Max. Daily ($\mu g/m^3$)	218.2	474.7	488.6
Measured Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	86	108	85
Calculated Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	86.0	111.7	89.0
State Annual Average ($\mu g/m^3$)	39.8	48.6	46.0
Westmoreland Monitoring Station			
Ozone			
Federal Max 8-hour (ppm)	0.072	0.067	0.084
Days 2015 Federal 8-hour Standard Exceeded (0.07 ppm)	1	0	6
Days 2008 Federal 8-hour Standard Exceeded (0.075 ppm)	0	0	1
State Max 8-hour (ppm)	0.073	0.068	0.084
Days State 8-hour Standard Exceeded (0.07 ppm)	1	0	7
Max. 1-hour (ppm)	0.081	0.085	0.090
Days State 1-hour Standard Exceeded (0.09 ppm)	0	0	0
PM_{10}*			
Federal Max. Daily ($\mu g/m^3$)	547.1	867.2	610.2
Measured Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	3	19	14
Calculated Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	3.0	19.4	14.4
Federal Annual Average ($\mu g/m^3$)	45.0	58.5	48.8
State Max. Daily ($\mu g/m^3$)	543.1	896.2	621.5
Measured Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	104	123	82
Calculated Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	105.5	125.6	86.9
State Annual Average ($\mu g/m^3$)	44.7	60.0	44.9

SOURCE: CARB 2025.
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; -- = Not available.
*Calculated days value. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

3.0 Thresholds of Significance

Thresholds used to evaluate potential impacts to air quality are based on applicable criteria in the CEQA Guidelines Appendix G. The project would have a significant air quality impact if it would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. 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.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

As stated in the State CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, Environmental Checklist Form). The State CEQA Guidelines encourage lead agencies to adopt regionally specific thresholds of significance. When adopting these thresholds, the amended Guidelines allow lead agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence.

The ICAPCD CEQA Air Quality Handbook establishes the following four separate evaluation categories (ICAPCD 2017a):

1. Comparison of calculated project emissions to ICAPCD emission thresholds.
2. Consistency with the most recent Clean Air Plan for Imperial County.
3. Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable.
4. The evaluation of special conditions which apply to certain projects.

Any development with a potential to emit criteria pollutants below significance levels defined by the ICAPCD is called a "Tier I project," and is considered by the ICAPCD to have less than significant potential adverse impacts on local air quality. For Tier I projects, the project proponent should implement a set of feasible "standard" mitigation measures (enumerated by the ICAPCD) to reduce the air quality impact to a level less than significant. A "Tier II project" is one whose emissions exceed any of the thresholds. Its impact is significant, and the project proponent should select and implement all feasible "discretionary" mitigation measures (also enumerated by the ICAPCD) in addition to the standard measures.

3.1.1 Operational Impacts

Table 3 provides general guidelines for determining the significance of impacts based on the total emissions that are expected from project operation established by the ICAPCD.

Table 3 Significance Thresholds for Operations		
Pollutant	Tier I	Tier II
NO_X and ROG	Less than 137 lbs/day	137 lbs/day and greater
PM_{10} and SO_X	Less than 150 lbs/day	150 lbs/day and greater
CO and $PM_{2.5}$	Less than 550 lbs/day	550 lbs/day and greater
SOURCE: ICAPCD 2017a. NO_X = oxides of nitrogen; ROG = reactive organic gas; PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less; SO_X = oxides of sulfur; CO = carbon monoxide; $PM_{2.5}$ = particulate matter with an aerodynamic diameter 2.5 microns or less; lbs/day = pounds per day		

As stated above, Tier 1 projects are required to implement all feasible standard measures specified by the ICAPCD. Tier II projects are required to implement all feasible standard measures as well as all feasible discretionary measures specified by the ICAPCD.

3.1.2 Construction Impacts

The ICAPCD has also established thresholds of significance for project construction. Table 4 provides general guidelines for determining the significance of impacts based on the total emissions that are expected from project construction.

Table 4 Significance Thresholds for Construction	
Pollutant	Thresholds (pounds/day)
PM_{10}	150
ROG	75
NO_X	100
CO	550
SOURCE: ICAPCD 2017a. ROG = reactive organic gas; NO_X = oxides of nitrogen; CO = carbon monoxide; PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less.	

Regardless of project size, all feasible standard measures specified by the ICAPCD for construction equipment and fugitive PM_{10} control for construction activities should be implemented at construction sites. Control measures for fugitive PM_{10} construction emissions in Imperial County are found in ICAPCD Regulation VIII and in the ICAPCD CEQA Air Quality Handbook (ICAPCD 2017a) and are discussed below.

3.1.3 Public Nuisance Law (Odors)

State of California Health and Safety Code Sections 41700 and 41705 and ICAPCD Rule 407 prohibit emissions from any source whatsoever in quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to the public health or damage to property.

The ICAPCD CEQA Air Quality Handbook provides screening level distances for potential odor sources. If a project is proposed within one mile of a wastewater treatment plant, sanitary landfill, composting station, feedlot, asphalt plant, painting and coating operation, or rendering plant, a potential odor problem may result (ICAPCD 2017a).

4.0 Emission Calculations

The project would generate air pollutant emissions during construction. Emissions were calculated using California Emissions Estimator Model (CalEEMod) Version 2022.1.1.29 (California Air Pollution Control Officers Association 2022). The CalEEMod program is a tool used to estimate emissions resulting from land development projects in the state of California. CalEEMod was developed with the participation of several state air districts.

CalEEMod estimates parameters such as the type and amount of construction equipment required, trip generation, and utility consumption based on the size and type of each specific land use using data collected from surveys performed by the South Coast Air Quality Management District (AQMD). Where available, parameters were modified to reflect project-specific data.

4.1 Construction-related Emissions

Construction-related activities are temporary, short-term sources of air pollutant emissions. Sources of construction-related emissions include the following:

- fugitive dust from grading activities;
- exhaust emissions from construction equipment;
- application of chemical coatings (paints, stains, sealants, etc.); and
- exhaust and fugitive dust emission from on-road vehicles (trips by workers, delivery trucks, and material-hauling trucks).

Heavy-duty construction equipment is usually diesel powered. Based on CARB's In-Use Off-Road Diesel-Fueled Fleets Regulation, heavy-duty construction equipment includes off-road diesel vehicles 25 horsepower or greater. In general, emissions from diesel-powered equipment contain more NO_X, SO_X, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally produce less CO and less ROG compared to gasoline-powered engines. Standard construction equipment includes tractors/loaders/backhoes, rubber-tired dozers, excavators, graders, cranes, forklifts, rollers, paving equipment, generator sets, welders, cement and mortar mixers, and air compressors.

Primary inputs are the numbers of each piece of equipment and the length of each construction stage. The construction equipment estimates are based on surveys performed by the South Coast AQMD and the Sacramento Metropolitan AQMD of typical construction projects which provide a basis for scaling equipment needs and schedule with a project's size. Air emission estimates in CalEEMod are based on the duration of construction phases; construction equipment type, quantity, and usage; grading area; season; and ambient temperature, among other parameters.

The construction schedule and equipment were obtained from the applicant. Construction activities are anticipated to begin in September 2026 and last for 16 months. Earthwork would include 1,000 cubic yards of fill. The required construction equipment, truck hauling and delivery trips, and number of workers are discussed in the sections below.

4.1.1 Fugitive Dust

Fugitive dust would be associated with construction activities that involve ground disturbance. Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, and wind erosion from exposed surfaces are all sources of fugitive dust. Calculation of fugitive dust emissions are based on the

area of disturbed ground and the fugitive dust measures implemented. Based on discussion with ICAPCD staff, watering during ground-disturbing activities would achieve a 50 percent reduction in fugitive dust.

The ICAPCD requires that, regardless of the size of a project, all feasible standard measures for fugitive PM_{10} must be implemented at construction sites. Additionally, all feasible discretionary measures for PM_{10} apply to those construction sites that are 5 acres or more for non-residential developments or 10 acres or more in size for residential developments. The project footprint consists of 0.2 acres. Standard measures from the ICAPCD handbook include the following:

Standard Measures for Fugitive PM_{10} Control:

a) All disturbed areas, including bulk material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover.

b) All on-site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering.

c) All unpaved traffic areas one acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emission shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants and/or watering. The transport of bulk materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.

d) The transport of bulk materials shall be completely covered unless six inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at delivery site after removal of bulk material.

e) All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.

f) Movement of bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers or by sheltering or enclosing the operation and transfer line.

g) The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

4.1.2 Construction Equipment

CalEEMod calculates emissions of all pollutants from construction equipment using emission factors from CARB's off-road diesel equipment emission factors database. As described in Section 4.1 above, a project-specific construction equipment list was provided by the applicant. All equipment required at any point during the construction duration was modeled during the entire 16-month construction period, resulting in a conservative

assessment. Additionally, an off-highway truck and two diesel-fueled signal boards were added to each phase to account for a water truck and signage needed to warn traffic about the closed bridge. Two dump trucks and two concrete trucks were also added to account for hauling and deliveries. The modeled construction equipment is summarized in Table 5.

Table 5
Construction Phases and Equipment

Equipment	Quantity	Daily Operation Time (hours)
Excavator	1	8
Bore/Drill Rig	1	8
Crane	1	8
Tractor/Loader/Backhoe	1	8
Concrete Deck Finisher (modeled as Paving Equipment)	1	8
Water Truck (modeled as Off-Highway Truck)	1	8
Signal Boards	2	8
Dump Trucks (modeled as Dumpers/Tenders)	2	8
Concrete Trucks (modeled as Cement and Mortar Mixers)	2	8
NOTE: Each phase would also include vehicles associated with work commutes. The off-site travel associated with dump trucks and concrete trucks were also modeled. See Section 4.1.3.		

The ICAPCD requires that, regardless of the size of a project, all feasible standard measures for construction equipment must be implemented at construction sites. Standard measures from the ICAPCD CEQA Air Quality Handbook (ICAPCD 2017a) include the following:

Standard Measures for Construction Combustion Equipment

a) Use of alternative fueled or catalyst equipped diesel construction equipment, including all off-road and portable diesel powered equipment.

b) Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes as a maximum.

c) Limit, to the extent feasible, the hours of operation of heavy duty equipment and/or the amount of equipment in use.

d) Replace fossil fueled equipment with electrically driven equivalents (provided they are not run via a portable generator set).

4.1.3 On-road Vehicles

Construction would generate mobile source emissions from worker trips, hauling trips, and vendor trips. CalEEMod calculates emissions of all pollutants from on-road trucks and passenger vehicles using emission factors derived from CARB's motor vehicle emission inventory program EMFAC2020 (CARB 2021). Vehicle emission factors were multiplied by the model default total estimated number of trips and the average trip length to calculate the total mobile emissions. The project would require a crew of three workers throughout the duration of construction, with a few short periods of time (one to two weeks) requiring up to 10 workers. To be conservative, 10 workers generating 20

daily one-way trips were modeled during the entire 16-month construction period. A total of 70 dump truck trips (140 one-way trips) would be required to haul soil to the project site. Additionally, a total of 60 concrete truck trips, 5 semi-truck trips, and 20 flatbed truck trips would be required (170 one-way trips). These truck trips were modeled over a one-week period for a maximum of 28 hauling trips per day and 34 delivery trips per day. Default trip lengths were modeled.

CalEEMod calculates dust emissions from travel on paved and unpaved roads. By default, CalEEMod assumes the percentage of paved and unpaved roads for each district as provided by the district. For Imperial County, the default assumption is 50 percent paved and 50 percent unpaved. However, this is not characteristic of the roads in the vicinity of the project site. Construction vehicles would access the site via State Route 111, West Eddins Road, and Brandt Road, which are all paved. Still, it should be noted that Imperial County roadways do experience higher levels of entrained roadway dust. To account for these dust emissions, 95 percent paved roads were modeled.

4.1.4 Construction Emission Estimates

Table 6 provides a summary of the daily criteria pollutant emissions that would be generated during project construction. CalEEMod output files are presented in Attachment 1.

Table 6
Maximum Daily Construction Air Pollutant Emissions

Year	Maximum Daily Emissions (pounds)					
	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
2026	2	16	18	<1	96	10
2027	2	16	18	<1	96	10
Max Daily Emissions	**2**	**16**	**18**	**<1**	**96**	**10**
Significance Threshold	*75*	*100*	*550*	-	*150*	-
Exceeds Threshold?	***No***	***No***	***No***	-	***No***	-

SOURCE: Attachment 1.
ROG = reactive organic gas; NO_X = oxides of nitrogen; CO = carbon monoxide;
PM_{10} = particulate matter with an aerodynamic diameter 10 microns or less;
$PM_{2.5}$ = particulate matter with an aerodynamic diameter 2.5 microns or less.

As shown in Table 6, emissions associated with project construction would not exceed the applicable ICAPCD significance thresholds. The emissions summarized in Table 5 account for the 50 percent reduction in dust due to daily watering, but do not account for any other emissions reductions from any other standard measure for dust control or construction equipment. Therefore, these emissions are conservative.

4.2 Operation-related Emissions

Once construction is complete, the project would not be a source of operational emissions. The project is limited to the demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. The project would not generate any new vehicle trips nor generate any other sources of operational emissions.

5.0 Air Quality Impact Analysis

1. Would the project conflict with or obstruct implementation of the applicable air quality plan?

CARB is the lead agency for preparation of the SIP, which outlines the state measures to achieve NAAQS. CARB delegates responsibility for preparation of SIP elements to local air districts and requires local air districts to prepare Air Quality Attainment Plans outlining measures required to achieve CAAQS.

The ICAPCD is the air district responsible for the project area. Applicable ICAPCD air quality plans include the following:

- Imperial County 2009 State Implementation Plan for Particulate matter Less than 10 Microns in Aerodynamic Diameter;
- Imperial County 2013 State Implementation Plan for the 2006 24-Hour $PM_{2.5}$ Moderate Non-attainment Area;
- Imperial County 2017 State Implementation Plan for the 2008 8-Hour Ozone Standard;
- Imperial County 2018 State Implementation Plan for the 2012 Annual Standard for Particulate Matter Less Than 2.5 Microns in Diameter; and
- Imperial County 2018 Redesignation Request and Maintenance Plan for Particulate Matter Less Than 10 Microns in Diameter.

The primary concern for assessing consistency with air quality plans is whether the project would induce growth that would result in a net increase in criteria pollutant emissions that exceed the assumptions used to develop the plan. The criteria pollutant emission projections for the ICAPCD air quality plans are based on Southern California Association of Governments' (SCAG) population growth and regional vehicle miles traveled projections, which are based in part on the land uses established by local general plans. As such, projects that propose development that is consistent with the local land use plans would be consistent with growth projections and air quality plans criteria pollutant emissions estimates. In the event that a project would result in development that is less dense than anticipated by the growth projections, the project would be considered consistent with the air quality plans. In the event a project would result in development that results in greater than anticipated growth projections, the project would result in air pollutant emissions that may not have been accounted for in the air quality plans and thus may obstruct or conflict with the air quality plans.

The project is limited to demolition of an existing bridge and construction of a replacement bridge within the same alignment in order to provide a safe and reliable crossing consistent with current standards. Furthermore, the project would not construct housing or any other uses that would result in regional population growth. Therefore, the project would not result in new growth beyond what was originally anticipated in SCAG's growth projections for Imperial County, nor generate criteria pollutants emissions beyond what was projected in the ICAPCD's air quality plans. Additionally, as shown in Table 6 above, project construction would not exceed any of the applicable significance thresholds for criteria pollutants. The project would not be a source of operational emissions. Therefore, the project would not conflict with or obstruct implementation of any of ICAPCD's air quality plans, and impacts would be less than significant.

2. *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?*

The project site is in non-attainment areas for NAAQS and CAAQS for ozone and particulate matter. The majority of regional PM_{10} and $PM_{2.5}$ emissions originate from dust stirred up by wind or by vehicle traffic on unpaved roads (ICAPCD 2009). Other PM_{10} and $PM_{2.5}$ emissions originate from grinding operations, combustion sources such as motor vehicles, power plants, wood burning, forest fires, agricultural burning, and industrial processes. Ozone is not emitted directly, but is a result of atmospheric activity on precursors. NO_X and ROG are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone. Approximately 88 percent of NO_X and 40 percent of ROG regional emissions originate from on- and off-road vehicles (ICAPCD 2010). Other major sources include solvent evaporation and miscellaneous processes such as pesticide application.

As shown in Table 6 above, project construction would not exceed the applicable ICAPCD significance thresholds. These significance thresholds are designed to provide limits below which project emissions would not significantly change regional air quality. The project would implement all standard measures for fugitive PM_{10} control and standard measures for construction combustion equipment. Furthermore, the project would adhere to Regulation VIII, which includes the following specific rules:

- Rule 800–Fugitive Dust Requirements for Control of $PM_{2.5}$
- Rule 801–Construction and Earthmoving Activities
- Rule 802–Bulk Materials
- Rule 803–Carry Out and Track Out
- Rule 804–Open Areas
- Rule 805–Paved and Unpaved Roads
- Rule 806–Conservation Management Practices

Additionally, the project would submit a Construction Notification form to the ICAPCD no less than 10 days prior to the start of construction. Therefore, project construction would not result in a cumulatively considerable net increase in emissions of ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

Long-term emissions of regional air pollutants occur from operational sources. The project would not be a source of operational emissions. Therefore, project operation would not result in a cumulatively considerable net increase in emissions of ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

3. *Would the project expose sensitive receptors (including, but not limited to, schools, hospitals, resident care facilities, day-care centers and project residents) to substantial pollutant concentrations?*

Sensitive land uses include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities. The nearest sensitive receptor is the residential property located approximately 70 feet northeast of the project footprint.

Diesel Particulate Matter – Construction

Construction of the project would result in short-term diesel exhaust emissions from on-site heavy-duty equipment. Construction of the project would result in the generation of diesel-exhaust DPM emissions from the use of off-road diesel equipment (see Table 5), and on-road diesel equipment used to bring materials to and from the project site.

Generation of DPM from construction projects typically occurs in a single area for a short period. Construction is anticipated to last for approximately 16 months. The dose of DPM to which the receptors are exposed is the primary

factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the Maximally Exposed Individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. According to the Office of Environmental Health Hazard Assessment, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Office of Environmental Health Hazard Assessment 2015). Thus, if the duration of proposed construction activities near any specific sensitive receptor were five months, the exposure would be four percent (16 months divided by 30 years) of the total exposure period used for health risk calculation. Further, the project would implement the standard measures for construction combustion equipment summarized in Section 4.1.2 above. Additionally, with ongoing implementation of U.S. EPA and CARB requirements for cleaner fuels; off-road diesel engine retrofits; and new, low-emission diesel engine types, the DPM emissions of individual equipment would be reduced over time. All construction equipment would be subject to the CARB In-Use Off-Road Diesel-Fueled Fleets Regulation, which limits unnecessary idling to five minutes, requires all construction fleets to be labeled and reported to CARB, bans Tier 0 equipment and phases out Tier 1 and Tier 2 equipment (thereby replacing fleets with cleaner equipment), and requires that fleets comply with Best Available Control Technology requirements. Therefore, due to the limited duration of construction activities, implementation of standard measures for construction combustion equipment, and implementation of the In-Use Off-Road Diesel-Fueled Fleets Regulation, DPM generated by project construction is not expected to create conditions where the probability is greater than 10 in 1 million of contracting cancer for the Maximally Exposed Individual or to generate ground-level concentrations of non-carcinogenic TACs that exceed a Hazard Index greater than 1 for the Maximally Exposed Individual. Therefore, project construction would not expose sensitive receptors to substantial pollutant concentration, and impacts would be less than significant.

Carbon Monoxide Hot Spots

A CO hot spot is an area of localized CO pollution that is caused by severe vehicle congestion on major roadways, typically near signalized intersections. CO hot spots have the potential to violate state and federal CO standards at intersections, even if the broader basin is in attainment for federal and state levels. Due to increased requirements for cleaner vehicles, equipment, and fuels, CO levels in the state have dropped substantially. All air basins are attainment or maintenance areas for CO. Therefore, recent screening procedures based on more current methodologies have been developed. The Sacramento Metropolitan AQMD developed a screening threshold in 2011, which states that any project involving an intersection experiencing 31,600 vehicles per hour or more will require detailed analysis. No intersections in the vicinity of the project carry this substantial amount of traffic. Additionally, there are no signalized intersections in the vicinity of the project site. Traffic generated during construction would not result in any heavily congested intersections. The project would not generate any increase in operational trips. Therefore, project construction and operation would not result in a CO hot spot, and impacts would be less than significant.

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

The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between the receptor and odor source, and local meteorological conditions. Project construction would result in the emission of diesel fumes and other odors typically associated with construction activities. Sensitive receptors near the project site include residential uses; however, exposure to odors associated with project construction would be short term (16 months) and temporary in nature. Further, per CARB's Airborne Toxic Control Measures 13 (California Code of Regulations Chapter 10 Section 2485), the applicant shall not allow idling time to exceed 5 minutes unless more time is required per engine manufacturers' specifications or for safety reasons.

Therefore, project construction would not generate odors adversely affecting a substantial number of people, and impacts would be less than significant.

The ICAPCD CEQA Air Quality Handbook provides screening level distances for potential odor sources. If a project is proposed within one mile of a wastewater treatment plant, sanitary landfill, composting station, feedlot, asphalt plant, painting and coating operation, or rendering plant, a potential odor problem may result (ICAPCD 2017a). The project does not include the construction of any of these uses. The project would not be a source of operational odors. Therefore, project operation would not generate odors adversely affecting a substantial number of people, and impacts would be less than significant.

6.0 Conclusions

The project's potential to result in impacts to air quality was assessed in accordance with the guidelines, policies, and standards established by the ICAPCD. The applicable ICAPCD air quality plans include the 2009, 2013, 2017, and 2018 SIPs for reducing PM_{10}, $PM_{2.5}$, and ozone. The project would replace an existing bridge and would be consistent with the SCAG's growth projections and ICAPCD's air quality plans criteria pollutant emissions estimates. Additionally, project construction would not exceed any of the applicable ICAPCD significance thresholds for criteria pollutants. Therefore, the project would not conflict with or obstruct implementation of any of ICAPCD's air quality plans, and impacts would be less than significant.

As shown in Table 6 above, project construction would not exceed the applicable ICAPCD significance thresholds. The project would implement all standard measures for fugitive PM_{10} control and standard measures for construction combustion equipment. The project would not be a source of operational emissions. Therefore, project construction and operation would not result in a cumulatively considerable net increase in emissions of ozone, PM_{10}, or $PM_{2.5}$, and impacts would be less than significant.

Project construction would not result in the exposure of sensitive receptors to significant levels of DPM that could result in excess cancer risks. Additionally, the project would not result in the creation of a CO hot spot. Therefore, construction and operation of the project would not expose sensitive receptors to substantial pollutant concentrations, and impacts would be less than significant. During construction, potential odor sources would be associated with construction equipment; however, exposure to odors associated with project construction would be short term and temporary in nature. The project would not be a source of operational odors. Therefore, the project would not generate odors adversely affecting a substantial number of people, and impacts would be less than significant. Lastly, construction emissions would not exceed the General Conformity *de minimis* levels, and the project would be exempt from all conformity requirements per 40 CFR 93.126.

If you have any questions about the results of this analysis, please contact me at jfleming@reconenvironmental.com or (619) 308-9333 extension 177.

Sincerely,

Jessica Fleming

Jessica Fleming
Senior Air Quality Specialist

JLF:jg:sjg

Attachment

7.0 References Cited

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Project Location

RECON

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FIGURE 1
Regional Location



RECON

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FIGURE 2
Project Location on Aerial Photograph

ATTACHMENT 1

CalEEMod Output Files

Brandt Road Bridge Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Brandt Road Bridge
Construction Start Date	9/1/2026
Lead Agency	Imperial County
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	4.80
Location	33.118005159184094, -115.562752273532
County	Imperial
City	Unincorporated
Air District	Imperial County APCD
Air Basin	Salton Sea
TAZ	5600
EDFZ	19
Electric Utility	Imperial Irrigation District
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Bridge/Overpass Construction	0.04	Mile	0.20	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.09	1.74	16.0	18.2	0.06	0.51	95.0	95.6	0.48	9.66	10.1	—	6,991	6,991	0.20	0.48	7.54	7,147
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.05	1.71	16.4	17.3	0.06	0.51	95.0	95.6	0.48	9.66	10.1	—	6,947	6,947	0.20	0.48	0.20	7,095
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.46	1.22	11.3	12.5	0.04	0.35	67.2	67.6	0.32	6.83	7.16	—	4,941	4,941	0.14	0.34	2.11	5,049
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.27	0.22	2.06	2.28	0.01	0.06	12.3	12.3	0.06	1.25	1.31	—	818	818	0.02	0.06	0.35	836
Exceeds (Daily Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Threshold	—	75.0	100	550	—	—	—	150	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	—	—	—	No	—	—	—	—	—	—	—	—	—	—
Exceeds (Average Daily)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Threshold	—	75.0	100	550	—	—	—	150	—	—	—	—	—	—	—	—	—	—
Unmit.	—	No	No	No	—	—	—	No	—	—	—	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.09	1.74	16.0	18.2	0.06	0.51	95.0	95.6	0.48	9.66	10.1	—	6,991	6,991	0.20	0.48	7.54	7,147
2027	2.06	1.72	15.5	18.0	0.06	0.49	95.0	95.5	0.45	9.66	10.1	—	6,921	6,921	0.20	0.48	6.82	7,076
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.05	1.71	16.4	17.3	0.06	0.51	95.0	95.6	0.48	9.66	10.1	—	6,947	6,947	0.20	0.48	0.20	7,095
2027	2.01	1.68	15.9	17.1	0.06	0.49	95.0	95.5	0.45	9.66	10.1	—	6,878	6,878	0.20	0.48	0.18	7,026
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.49	0.41	3.89	4.21	0.01	0.12	22.4	22.5	0.11	2.28	2.39	—	1,663	1,663	0.05	0.11	0.78	1,699
2027	1.46	1.22	11.3	12.5	0.04	0.35	67.2	67.6	0.32	6.83	7.16	—	4,941	4,941	0.14	0.34	2.11	5,049
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.09	0.07	0.71	0.77	< 0.005	0.02	4.09	4.11	0.02	0.42	0.44	—	275	275	0.01	0.02	0.13	281
2027	0.27	0.22	2.06	2.28	0.01	0.06	12.3	12.3	0.06	1.25	1.31	—	818	818	0.02	0.06	0.35	836

3. Construction Emissions Details

3.1. Linear, Drainage, Utilities, & Sub-Grade (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.84	1.54	12.7	15.0	0.04	0.46	—	0.46	0.42	—	0.42	—	3,772	3,772	0.15	0.03	—	3,785
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.22	5.22	< 0.005	< 0.005	0.01	5.47
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.84	1.54	12.7	15.0	0.04	0.46	—	0.46	0.42	—	0.42	—	3,772	3,772	0.15	0.03	—	3,785
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.27	5.27	< 0.005	< 0.005	< 0.005	5.53
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	0.37	3.03	3.59	0.01	0.11	—	0.11	0.10	—	0.10	—	901	901	0.04	0.01	—	904
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.55	0.65	< 0.005	0.02	—	0.02	0.02	—	0.02	—	149	149	0.01	< 0.005	—	150
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.11	2.16	0.00	0.00	27.5	27.5	0.00	2.78	2.78	—	302	302	0.01	0.01	0.99	306
Vendor	0.06	0.04	1.14	0.51	0.01	0.02	25.8	25.8	0.02	2.62	2.64	—	1,050	1,050	0.01	0.15	2.63	1,096
Hauling	0.06	0.04	2.07	0.52	0.01	0.04	41.7	41.7	0.04	4.25	4.29	—	1,862	1,862	0.02	0.29	3.90	1,954
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.13	1.22	0.00	0.00	27.5	27.5	0.00	2.78	2.78	—	255	255	0.01	0.01	0.03	259
Vendor	0.05	0.04	1.25	0.52	0.01	0.02	25.8	25.8	0.02	2.62	2.64	—	1,051	1,051	0.01	0.15	0.07	1,094
Hauling	0.05	0.04	2.27	0.53	0.01	0.04	41.7	41.7	0.04	4.25	4.29	—	1,864	1,864	0.02	0.29	0.10	1,951
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.37	0.00	0.00	6.47	6.47	0.00	0.65	0.65	—	65.5	65.5	< 0.005	< 0.005	0.10	66.4
Vendor	0.01	0.01	0.29	0.12	< 0.005	< 0.005	6.08	6.08	< 0.005	0.62	0.62	—	251	251	< 0.005	0.03	0.27	261
Hauling	0.01	0.01	0.53	0.13	< 0.005	0.01	9.83	9.83	0.01	1.00	1.01	—	445	445	< 0.005	0.07	0.40	466
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.07	0.00	0.00	1.18	1.18	0.00	0.12	0.12	—	10.9	10.9	< 0.005	< 0.005	0.02	11.0

Vendor	< 0.005	< 0.005	0.05	0.02	< 0.005	< 0.005	1.11	1.11	< 0.005	0.11	0.11	—	41.5	41.5	< 0.005	0.01	0.04	43.3
Hauling	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	1.79	1.79	< 0.005	0.18	0.18	—	73.6	73.6	< 0.005	0.01	0.07	77.2

3.3. Linear, Drainage, Utilities, & Sub-Grade (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.82	1.52	12.3	15.0	0.04	0.44	—	0.44	0.40	—	0.40	—	3,771	3,771	0.15	0.03	—	3,784
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.11	5.11	< 0.005	< 0.005	0.01	5.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.82	1.52	12.3	15.0	0.04	0.44	—	0.44	0.40	—	0.40	—	3,771	3,771	0.15	0.03	—	3,784
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.41
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Roa Equipment	1.19	1.00	8.04	9.82	0.02	0.28	—	0.28	0.26	—	0.26	—	2,465	2,465	0.10	0.02	—	2,473
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.05	0.05	< 0.005	< 0.005	< 0.005	—	3.35	3.35	< 0.005	< 0.005	< 0.005	3.52
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.18	1.47	1.79	< 0.005	0.05	—	0.05	0.05	—	0.05	—	408	408	0.02	< 0.005	—	409
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	0.56	0.56	< 0.005	< 0.005	< 0.005	0.58
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.12	0.11	1.96	0.00	0.00	27.5	27.5	0.00	2.78	2.78	—	297	297	0.01	0.01	0.90	301
Vendor	0.06	0.04	1.09	0.48	0.01	0.02	25.8	25.8	0.02	2.62	2.64	—	1,029	1,029	0.01	0.14	2.30	1,074
Hauling	0.06	0.04	2.02	0.51	0.01	0.04	41.7	41.7	0.04	4.25	4.29	—	1,820	1,820	0.02	0.29	3.62	1,911
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.12	1.10	0.00	0.00	27.5	27.5	0.00	2.78	2.78	—	251	251	0.01	0.01	0.02	254
Vendor	0.04	0.04	1.19	0.49	0.01	0.02	25.8	25.8	0.02	2.62	2.64	—	1,029	1,029	0.01	0.15	0.06	1,073
Hauling	0.05	0.04	2.22	0.52	0.01	0.04	41.7	41.7	0.04	4.25	4.29	—	1,821	1,821	0.02	0.29	0.09	1,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.07	0.91	0.00	0.00	17.7	17.7	0.00	1.79	1.79	—	176	176	0.01	0.01	0.25	179

Vendor	0.03	0.03	0.77	0.32	0.01	0.01	16.6	16.7	0.01	1.69	1.70	—	673	673	0.01	0.09	0.65	701
Hauling	0.04	0.02	1.42	0.34	0.01	0.02	26.9	26.9	0.02	2.74	2.77	—	1,190	1,190	0.01	0.19	1.02	1,248
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.17	0.00	0.00	3.23	3.23	0.00	0.33	0.33	—	29.2	29.2	< 0.005	< 0.005	0.04	29.6
Vendor	0.01	< 0.005	0.14	0.06	< 0.005	< 0.005	3.04	3.04	< 0.005	0.31	0.31	—	111	111	< 0.005	0.02	0.11	116
Hauling	0.01	< 0.005	0.26	0.06	< 0.005	< 0.005	4.91	4.91	< 0.005	0.50	0.50	—	197	197	< 0.005	0.03	0.17	207

3.5. Linear, Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.82	1.52	12.3	15.0	0.04	0.44	—	0.44	0.40	—	0.40	—	3,771	3,771	0.15	0.03	—	3,784
Onsite truck	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	0.07	0.07	< 0.005	0.01	0.01	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.41
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.10	0.78	0.95	< 0.005	0.03	—	0.03	0.03	—	0.03	—	238	238	0.01	< 0.005	—	238
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.02	0.02	0.14	0.17	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	39.3	39.3	< 0.005	< 0.005	—	39.5
Onsite truck	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.06
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	0.12	1.10	0.00	0.00	27.5	27.5	0.00	2.78	2.78	—	251	251	0.01	0.01	0.02	254
Vendor	0.04	0.04	1.19	0.49	0.01	0.02	25.8	25.8	0.02	2.62	2.64	—	1,029	1,029	0.01	0.15	0.06	1,073
Hauling	0.05	0.04	2.22	0.52	0.01	0.04	41.7	41.7	0.04	4.25	4.29	—	1,821	1,821	0.02	0.29	0.09	1,909
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.09	0.00	0.00	1.71	1.71	0.00	0.17	0.17	—	17.0	17.0	< 0.005	< 0.005	0.02	17.2
Vendor	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	1.60	1.61	< 0.005	0.16	0.16	—	64.8	64.8	< 0.005	0.01	0.06	67.6
Hauling	< 0.005	< 0.005	0.14	0.03	< 0.005	< 0.005	2.59	2.60	< 0.005	0.26	0.27	—	115	115	< 0.005	0.02	0.10	120
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.31	0.31	0.00	0.03	0.03	—	2.81	2.81	< 0.005	< 0.005	< 0.005	2.85
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	0.29	0.29	< 0.005	0.03	0.03	—	10.7	10.7	< 0.005	< 0.005	0.01	11.2
Hauling	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	0.47	0.47	< 0.005	0.05	0.05	—	19.0	19.0	< 0.005	< 0.005	0.02	19.9

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Linear, Drainage, Utilities, & Sub-Grade	Linear, Drainage, Utilities, & Sub-Grade	9/1/2026	11/30/2027	5.00	326	—
Linear, Paving	Linear, Paving	12/1/2027	12/31/2027	5.00	23.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Linear, Drainage, Utilities, & Sub-Grade	Signal Boards	Diesel	Average	2.00	8.00	6.00	0.82
Linear, Drainage, Utilities, & Sub-Grade	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Linear, Drainage, Utilities, & Sub-Grade	Cranes	Diesel	Average	1.00	8.00	367	0.29
Linear, Drainage, Utilities, & Sub-Grade	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Drainage, Utilities, & Sub-Grade	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Drainage, Utilities, & Sub-Grade	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Linear, Drainage, Utilities, & Sub-Grade	Cement and Mortar Mixers	Diesel	Average	2.00	8.00	10.0	0.56

Linear, Drainage, Utilities, & Sub-Grade	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Linear, Paving	Signal Boards	Diesel	Average	2.00	8.00	6.00	0.82
Linear, Paving	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Linear, Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.00	8.00	84.0	0.37
Linear, Paving	Cranes	Diesel	Average	1.00	8.00	367	0.29
Linear, Paving	Paving Equipment	Diesel	Average	1.00	8.00	89.0	0.36
Linear, Paving	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Linear, Paving	Cement and Mortar Mixers	Diesel	Average	2.00	8.00	10.0	0.56
Linear, Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Linear, Paving	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Linear, Drainage, Utilities, & Sub-Grade	—	—	—	—
Linear, Drainage, Utilities, & Sub-Grade	Worker	20.0	18.5	LDA,LDT1,LDT2
Linear, Drainage, Utilities, & Sub-Grade	Vendor	34.0	10.2	HHDT,MHDT
Linear, Drainage, Utilities, & Sub-Grade	Hauling	28.0	20.0	HHDT
Linear, Drainage, Utilities, & Sub-Grade	Onsite truck	1.00	1.00	HHDT
Linear, Paving	—	—	—	—
Linear, Paving	Worker	20.0	18.5	LDA,LDT1,LDT2
Linear, Paving	Vendor	34.0	10.2	HHDT,MHDT

Linear, Paving	Hauling	28.0	20.0	HHDT
Linear, Paving	Onsite truck	1.00	1.00	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Linear, Drainage, Utilities, & Sub-Grade	1,000	—	0.20	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	Other	50%	50%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Bridge/Overpass Construction	0.20	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	457	0.03	< 0.005
2027	0.00	457	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	33.1	annual days of extreme heat
Extreme Precipitation	0.00	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	11.6
AQ-PM	19.1
AQ-DPM	9.09
Drinking Water	30.6
Lead Risk Housing	50.8

Pesticides	90.5
Toxic Releases	7.58
Traffic	3.06
Effect Indicators	—
CleanUp Sites	74.2
Groundwater	77.9
Haz Waste Facilities/Generators	93.2
Impaired Water Bodies	100.0
Solid Waste	86.5
Sensitive Population	—
Asthma	87.6
Cardio-vascular	83.2
Low Birth Weights	26.9
Socioeconomic Factor Indicators	—
Education	82.7
Housing	51.4
Linguistic	88.8
Poverty	94.9
Unemployment	99.3

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	16.66880534
Employed	7.173104068
Median HI	5.299627871
Education	—

Bachelor's or higher	5.017323239
High school enrollment	16.8741178
Preschool enrollment	68.89516233
Transportation	—
Auto Access	18.40112922
Active commuting	51.10997049
Social	—
2-parent households	13.28114975
Voting	16.79712563
Neighborhood	—
Alcohol availability	70.25535737
Park access	33.85089183
Retail density	4.311561658
Supermarket access	49.58295907
Tree canopy	0.782753753
Housing	—
Homeownership	38.3036058
Housing habitability	30.96368536
Low-inc homeowner severe housing cost burden	26.76761196
Low-inc renter severe housing cost burden	52.89362248
Uncrowded housing	38.58591043
Health Outcomes	—
Insured adults	21.00603105
Arthritis	0.0
Asthma ER Admissions	30.1
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0

Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	41.7
Cognitively Disabled	50.3
Physically Disabled	19.5
Heart Attack ER Admissions	46.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	54.3
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	14.1
Elderly	42.0
English Speaking	18.7
Foreign-born	65.3
Outdoor Workers	5.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	85.8
Traffic Density	4.9

Traffic Access	23.0
Other Indices	—
Hardship	92.9
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	82.0
Healthy Places Index Score for Project Location (b)	11.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	16 month construction Last month modeled as paving

Construction: Off-Road Equipment	Equipment list provided by applicant Includes signal boards and water truck Concrete trucks modeled as cement and mortar mixers Dump trucks modeled as dumpers/tenders Concrete deck finisher modeled as paving equipment Water truck modeled as off-highway truck
Construction: Trips and VMT	Up to 10 workers per day (20 one-way trips) 70 total haul trips (140 one-way trips) modeled over 1 week period 85 total vendor trips (170 one-way trips) modeled over 1 week period 1 water truck modeled
Construction: On-Road Fugitive Dust	Assumes travel is on 95% paved roads

Natural Environment Study

(Minimal Impacts)

Brandt Road Bridge Replacement Project

Imperial County, California

District 11-Imp

County Project No. 7094BFR

August 2025

STATE OF CALIFORNIA
Department of Transportation
and Imperial County Public Works Department

Prepared By: Chelsea Polevy Date: 09/03/2025

Chelsea Polevy, Biologist
(619) 308-9333 ext. 198
RECON Environmental, Inc., 3111 Camino del Rio North, Suite 600, San Diego, CA 92108
Consultant

Prepared By: _____ Date: _____

Robert Ureña III, PE
(442) 265-1818
Imperial County Dept. of Public Works, 155 S. 11th Street, El Centro, CA 92243
Authorized Local Agency Representative

Recommended for
Approval By: _____ Date: _____

Robert A. James, Senior Environmental Planner
(619) 688-0236
Environmental Division
Caltrans - District 11, 4050 Taylor Street, San Diego, CA 92110
Cooperating Agency

Approved By: _____ Date: _____

Kevin Hovey, Chief
(619) 606-3108
Environmental Branch D
Caltrans - District 11, 4050 Taylor Street, San Diego, CA 92110

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1. Introduction

The Imperial County Public Works Department (County) proposes to replace the existing Brandt Road bridge over the Alamo River in order to provide a safe and reliable crossing for the public. The purpose of this Natural Environment Study – Minimal Impacts (NESMI) is to provide technical information and to determine the extent, if any, to which the Brandt Road Bridge Replacement Project (project) may affect special status species, their habitats, and other natural areas. This report describes the results of the biological resources surveys conducted for the project. Avoidance and minimization measures are included in this document to demonstrate that the California Department of Transportation (Caltrans) and the County have given the environment due consideration while planning the project and that the project will have minimal impacts on protected habitats and plant and wildlife species.

1.1 Project Purpose and Need

Brandt Road is located approximately 2.5 miles southwest of the city of Calipatria and east of the Salton Sea, in Imperial County, California. Brandt Road predominantly carries traffic generated by the agricultural and nearby geothermal industries. Additionally, its location is critical to the future development within Lithium Valley.

Lithium Valley is an unincorporated area of Imperial County located at the southeast side of the Salton Sea in California that possess large lithium deposits. The state recently created the Lithium Valley Commission, directed to review, investigate, and analyze opportunities and benefits for lithium recovery and use in the state, as this and other minerals are being developed from geothermal brine in the Salton Sea Geothermal Resource Area.

As geothermal, mineral and lithium extraction, and related heavy industries are exploring and proposing large projects in the area, transportation infrastructure in Lithium Valley is either lacking, or at risk of inability to serve, this increased development. These areas have been and still are also a significant part of the existing agricultural economy of the region and already at risk of transportation disruption due to an aging transportation infrastructure network.

Brandt Road conveys north-south traffic along a 12-mile route, starting at the south at Highway 78/86, between the cities of Westmorland and Brawley, and finishing north at Sinclair Road where many heavy geothermal industries currently operate and where the future of Lithium Valley is expected to develop. The Brandt Road bridge is located approximately 2.5 miles southwest of the city of Calipatria.

The purpose of the project is to replace the existing wood bridge with a new crossing that would satisfy current design and seismic standards. Project objectives include providing a safe and reliable crossing for the public that meets all current design standards, supports agricultural and local vehicle traffic, and accommodates heavy vehicle traffic associated with geothermal, lithium, and other metal extraction industries in the surrounding area.

1.2 Project Description

The project is located approximately 2.5 miles southwest of the city of Calipatria and east of the Salton Sea in Imperial County, California along Brandt Road (Appendix A: Figures 1 and 2). The project is located within the U.S. Geological Survey (USGS) 7.5-minute Westmorland East quadrangle, Township 12 South, Ranges 13 East and 14 East (USGS 1992; Appendix A: Figure 3).

The project would replace an existing wood bridge constructed in 1950 that spans the Alamo River. Brandt Road is a paved two-lane road that extends north and south of the existing bridge. The southern terminus of the existing bridge is located immediately north of an east/west dirt road that intersects with the paved Brandt Road. The segment extending in a westerly direction is named West Bowles Road, and the segment extending in an easterly direction is also named Brandt Road. Agricultural lands are located further to the south. An existing residential use is located immediately northeast of the northern terminus of the bridge, followed by agricultural lands further to the north. Access to the project is provided by the north/south paved Brandt Road from the north or south (see Appendix A: Figure 2).

The existing wooden structure consists of an approximately 150-foot-long, ten-span bridge, with pile bents located within the Alamo River. The project would demolish and dispose of the existing bridge and supporting features, followed by the construction of a new single-span bridge within the same alignment. The proposed single-span bridge would not impede the flow of the Alamo River. Staging areas would be used to store project materials and equipment throughout construction. Staging areas would include existing segments of Brandt Road north and south of the project site, as well as segments of the banks of the Alamo River that front the project site. The affected portion of Brandt Road would be closed during the entire duration of construction. Traffic control, barricades, and construction and detour sign plans would be prepared to ensure no public traffic enters this area.

The proposed two-lane bridge would be located within the same alignment but would be slightly wider than the existing two-lane bridge. The proposed approaches would consist of two 12-foot-wide lanes and two 8-foot-wide unpaved shoulders with a design speed of 55 miles per hour (mph). The approaches would be tapered to provide a transition between the existing segments of Brandt Road north and south of the project site that have unpaved shoulders and the replacement bridge that would include paved shoulders.

2. Study Methods

This chapter discusses regulatory requirements applicable to the project, literature reviewed, biological studies conducted and methods used, and coordination with agencies and other professionals. RECON conducted a literature review, performed general biological and focused species surveys, and prepared this report to provide information needed for the project to comply with state and federal environmental laws and regulations.

The Biological Study Area (BSA) for the project consists of the area that would be directly impacted by the project (project impact area [PIA]), as well as an approximate 150-foot buffer to account for indirect impacts (see Appendix A: Figure 2). The burrowing owl survey area consists of the PIA and a 500-foot buffer per the requirements of the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012).

2.1 Regulatory Requirements

2.1.1 National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA; Public Law 91-190; 42 United States Code 4321 et seq.) mandates federal agencies to consider and document environmental impacts of proposed actions and legislation. This act also mandates preparation of comprehensive environmental impact statements where proposed action is "major" and significantly affects the quality of the human environment.

2.1.2 Clean Water Act

The federal Clean Water Act (CWA) provides a structure for regulating water quality. The discharge of any pollutant from a point source into navigable waters is illegal unless a permit under its provisions is acquired. The U.S. Army Corps of Engineers (USACE), the State Water Resources Control Board (SWRCB), and the nine Regional Water Quality Control Boards (RWQCB) are responsible for implementing the CWA.

In accordance with Section 404 of the CWA, USACE regulates the discharge of dredged or fill material into Waters of the U.S. (WOTUS), including wetlands. The currently accepted regulations defining waters of the U.S. follow the September 8, 2023, publishment of the final rule: *Revised Definition of "Waters of the U.S.", Conforming*. The agencies' definition of "waters of the United States" provides jurisdiction over waterbodies that Congress intended to protect under the CWA, including traditional navigable waters (e.g., certain large rivers and lakes), territorial seas, and interstate waters. Notably, this new rule provides a new interpretation of the term "adjacent" whereas wetlands must contain a surface hydrologic connection to other waters of the U.S. to be considered adjacent waters of the U.S. and eliminates the applicability of the significant nexus standard for "non-relatively permanent waters."

WOTUS is defined as:

1. Waters which are:
   (i) 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;
   (ii) The territorial seas; or
   (iii) Interstate waters;
2. Impoundments of waters otherwise defined as Waters of the United States under this section;
3. Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;
4. Wetlands adjacent to the following waters:
   (i) Waters identified in paragraph (a)(1) of this section; or
   (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;
5. Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Activities that require a permit under Section 404 include, but are not limited to, placing fill or riprap, grading, mechanized land clearing, and dredging within jurisdictional WOTUS. Under the USACE's rules, a "discharge of dredged material" occurs when dirt or other material is removed from a USACE jurisdictional WOTUS and is then placed back in that water at the same or another location. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative.

Section 401 of the CWA requires that an applicant for a federal license or permit allowing activities resulting in a discharge to WOTUS must obtain a state certification that the discharge complies with other provisions of CWA. The RWQCBs administer this certification program in California. No license or permit may be issued by a federal agency until certification required by Section 401 has been granted. Under the CWA, USACE Section 404 permits are subject to RWQCB Section 401 water quality regulation. The USACE cannot issue a permit under Section 404 until a Water Quality Certification has been obtained from the RWQCB pursuant to Section 401.

2.1.3 Rivers and Harbors Act

The federal Rivers and Harbors Act requires permits for all structures such as riprap and activities such as dredging proposed within navigable waters of the U.S. The USACE grants or denies permits based on the effects on navigation.

2.1.4 Federal Endangered Species Act

The federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a 'take' under the ESA. Take of a federally listed threatened or endangered species is prohibited unless a take permit is issued. The ESA allows for take of a threatened or endangered species incidental to development activities once a Habitat Conservation Plan has been prepared to the satisfaction of the U.S. Fish and Wildlife Service (USFWS) and an incidental take permit has been issued. The ESA also allows for the take of threatened or endangered species after consultation has deemed that development activities will not jeopardize the continued existence of the species. The ESA also provides for consultation between USFWS and other federal agencies when an action that may impact federally listed species is proposed by another federal agency; e.g., issuance of a permit for impacts to federal waters by USACE under Section 404 of the federal CWA.

2.1.5 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 United States Code 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive and is listed at 50 Code of Federal Regulations [CFR] 10.13. The regulatory definition of "migratory bird" is broad and includes any mutation or hybrid of a listed species and any part, egg, or nest of such birds (50 CFR 10.12). Migratory birds are not necessarily federally listed endangered or threatened birds under the ESA. The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The take, possession, import, export, transport, sale, purchase, barter, or offering of these activities is prohibited, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

2.1.6 Executive Order 11990 – Protection of Wetlands

Federal Executive Order (EO) 11990 established a national policy to avoid adverse impacts on wetlands whenever there is a practicable alternative. The U.S. Department of Transportation (DOT) promulgated DOT Order 5660.1A in 1978 to comply with this direction. On federally funded projects, impacts to wetlands must be identified and alternatives that avoid wetlands

must be considered. If wetland impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding. This order also requires early public involvement in projects affecting wetlands.

2.1.7 Executive Order 13112 – Invasive Species

Federal EO 13112 requires federal agencies to prevent the introduction or spread of invasive species in the U.S. and established the National Invasive Species Council as the coordinating body. The order defines invasive species as "an alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Subsequent Federal Highway Administration guidance directs the use of the state's invasive species list, maintained by the California Invasive Species Council, to define the invasive plants that must be considered as part of the NEPA analysis for a project. Under this order, federal agencies cannot "authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the U.S. or elsewhere unless … the agency has determined … that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

2.1.8 California Environmental Quality Act

The California Environmental Quality Act (CEQA) provides guidelines for defining impacts. Appendix G of the guidelines contains questions that local jurisdictions should evaluate when analyzing a project's potential impacts. The CEQA provides these guidelines so that local jurisdictions are able to determine what constitutes an "adverse effect" and significant impact to a biological resource.

2.1.9 Porter-Cologne Water Quality Control Act

The State of California Porter-Cologne Water Quality Control Act provides for statewide coordination of water quality regulations. The SWRCB was established as the statewide authority, and nine separate RWQCBs were developed to oversee water quality on a day-to-day basis. Under Porter-Cologne, the SWRCB and the RWQCBs regulate the "discharge of waste" to waters of the State (WOTS). The term "discharge of waste" is broadly defined in Porter-Cologne, such that discharges of waste include fill, any material resulting from human activity, or any other "discharge" that may directly or indirectly impact WOTS relative to implementation of Section 401 of the CWA. WOTS that are not also WOTUS (e.g., most vernal pools in southern California) are provided protection under Porter-Cologne.

Porter-Cologne is the state equivalent of the CWA. Specifically, Porter-Cologne requires each RWQCB to formulate and adopt water quality plans for all areas within their region (also known as "Basin Plans"). Basin Plans establish beneficial uses, water quality standards, and water quality objectives for major watershed areas (i.e., RWQCB boundaries) throughout the state. Parties proposing to discharge waste that could affect WOTS (other than into a community sewer system) must file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB will respond to a Report of Waste Discharge by issuing Waste Discharge Requirements (WDRs) in a public hearing, or by waiving the WDR (with or without conditions) for the proposed discharge into jurisdictional waters. If a Section 401 Water Quality Certification is requested concurrently, the WDR and 401 Water Quality Certification can be issued concurrently.

2.1.10 California Fish and Game Code

Multiple regulations from the California Fish and Game Code (CFGC) apply to projects in the state:

- Section 200 of the CFGC grants general authority to the Fish and Game Commission to regulate the taking or possession of birds, mammals, fish, amphibians, and reptiles subject to more specific statutory restrictions.

- Under Section 1600-1607, California Department of Fish and Wildlife (CDFW) regulates activities that would divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. CDFW has jurisdiction over riparian habitats associated with watercourses. Jurisdictional waters are delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. CDFW jurisdiction does not include tidal areas or isolated resources. Notification is generally required for any activity that will take place in or in the vicinity of a river, stream, lake, or their tributaries. Generally, the CDFW is concerned with activities that have the potential to impact state-regulated resources at the activity site, as well as the effects of those actions on the ecosystem at and surrounding the activity (i.e., upstream, downstream, and neighboring).

- Conservation of Aquatic Resources (CFGC Section 1700 et seq.). This legislation declares state policy to encourage conservation of the living resources of the ocean and other state waters, including species preservation.

- Native Species Conservation and Enhancement Act (CFGC Section 1750 et seq.). This act declares a policy of maintaining sufficient populations of all species of wildlife and native plants and the habitat necessary to ensure their continued existence at optimum levels and establishes an account to manage private donations toward that end.

- The Native Plant Protection Act (Section 1900 et seq.) governs the preservation, protection, and enhancement of endangered or rare native plants.

- The California Endangered Species Act (Sections 2050-2069) declares state policy regarding threatened and endangered species, provides for a listing and review process, prohibits certain acts as damaging to listed species, and provides a consultation process for state projects.

- Section 3503 states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto," and Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird" unless authorized.

2.2 Studies Required

2.2.1 Literature Search

RECON conducted a review of existing literature and databases relevant to the biological resources known from the vicinity of the BSA to determine special status species historically

reported or with potential to occur within the BSA. Literature reviewed included, but was not limited to, the following:

- Staff Report on Burrowing Owl Mitigation (CDFW 2012),
- All Species Occurrences Database (USFWS 2025a),
- The USFWS Information, Planning, and Consultation System (IPaC; USFWS 2025b),
- California Natural Diversity Database (CNDDB; CDFW 2025a), and
- The California Native Plant Society (CNPS) database (CNPS 2025).

All species recorded within a 5-mile buffer of the BSA on the USFWS and CNDDB databases and species with potential to occur based on the USFWS IPaC and CNPS database are provided in Appendix B. Additional maps, imagery, databases, and references reviewed included a USGS topographic map (USGS 1992), soils maps (U.S. Department of Agriculture [USDA] 1981), and aerial photographs. The BSA is located outside of the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries) jurisdiction; as such, a NOAA Fisheries species list was not generated.

2.2.2 Survey Methods

Surveys began with a general biological survey to inventory plant and wildlife species, map vegetation, and assess the suitability of habitat for special status species identified as having potential to occur based on the literature review discussed above. Following the general biological survey, an aquatic resource delineation, burrowing owl (*Athene cunicularia*) habitat assessment and focused breeding season surveys, and a bat reconnaissance survey were conducted as described below.

2.2.2.1 General Biological Survey

Prior to initiating focused surveys, a general biological survey was conducted within the BSA to map vegetation communities and land cover types, document observed plant and wildlife species, and assess the potential for special status species to occur on-site. Most of the BSA was covered on foot; however, some portions of the BSA were not accessible due to dense vegetation and/or private property restrictions. Such areas were surveyed visually with the aid of binoculars from the nearest accessible location.

Vegetation communities and aquatic resources within the BSA were mapped on a 1-inch-equals-100-feet scale aerial photograph. Dominant plant species were noted for each vegetation community. Vegetation community classifications follow Sawyer et al. (2009), with cross-reference to Holland (1986) as modified by Oberbauer et al. (2008).

Plant species observed within the BSA were noted, and plants that could not be identified in the field were identified later using taxonomic keys. The survey included a directed search for sensitive plants that would have been apparent at the time of the survey. Floral nomenclature follows the Jepson Flora Project (2025). In instances where common names are not provided in this resource, common names follow Rebman and Simpson (2014). Additional common names are from the USDA maintained database (USDA 2025) or the *Sunset Western Garden Book* (Brenzel 2001) for ornamental/horticultural plants.

Wildlife species observed directly or detected from calls, tracks, scat, nests, den/burrow, or carcass were noted. Zoological nomenclature for invertebrates is in accordance with NatureServe (2025) and Evans (2008) for invertebrates; for fish with NatureServe (2025); for reptiles with Crother et al. (2017); for birds with Chesser et al. (2025); and for mammals with Bradley et al. (2014) and American Society of Mammologists (2025).

For this report, species will be considered sensitive if they are (1) listed or proposed to be listed by state or federal agencies as threatened or endangered (CDFW 2025b-e); (2) on California Rare Plant Rank (CRPR) 1B (considered endangered throughout its range), CRPR 2 (considered endangered in California but more common elsewhere), CRPR 3 (more information about the plant's distribution and rarity needed), and CRPR 4 (plants of limited distribution) of the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS 2025); or (3) provided additional designation (e.g., fully protected or species of special concern) by CDFW (2025b–e). Determination of the potential occurrence for listed, special status, or noteworthy species is based upon known ranges and habitat preferences for species follows Nature Festivals of San Diego County 2002, Evans 2008, Page et al. 2013, Unitt 2004, Tremor et al. 2017, Western Bat Working Group 2017, and Harvey et al. 2011.

2.2.2.2 Aquatic Resource Delieation

A routine aquatic resource (waters/wetland) delineation, following the guidelines set forth by the USACE (1987 and 2008), was performed to gather field data at locations where aquatic resources occur in the survey area. Once on-site, the potential areas where federal and state jurisdictional may occur were examined to determine the presence and extent of any aquatic resources.

Prior to conducting the delineation, aerial photographs and USGS topographic maps of the survey area were examined to assess the potential for wetlands and hydrologic activity. Once on-site, areas with potential to support federal or state wetlands or waters were examined to determine the presence and extent of any jurisdictional waters.

Wetland aquatic resources were delineated using three parameters: hydrophytic vegetation, wetland hydrology, and hydric soils. The hydrophytic status of each plant species was determined based on the National Wetland Plant List (USACE 2020), which breaks down the indicator status of each species as follows: Obligate (OBL), Facultative-Wet (FACW), Facultative (FAC), Facultative Upland (FACU), and Upland (UPL). Dominant species not included on the National Wetland Plant List were evaluated as either wetland or upland indicator species based on local professional knowledge of where the species are most often observed in habitats that are characteristic of southern California.

Soil pits were dug to a depth of at least 18 inches or to a depth necessary to determine indicators of hydric soils. A Munsell Soil-Color Book (2009) was used to determine soil colors. The 2008 Arid West Regional Supplement (USACE 2008) and the Field Indicators of Hydric Soils in the United States guide (USDA 2017) were used to determine the presence of hydric soil indicators.

Hydrologic information for the site was obtained by reviewing USGS topographic maps and by directly observing hydrology indicators in the field. All portions of any potentially occurring wetland or non-wetland water aquatic resources within the survey area were inspected for signs of hydrology as defined in the 2008 Arid West Regional Supplement (USACE 2008). Non-wetland aquatic resources within the survey area were delineated along their ordinary high

water mark (OHWM) as identified by the presence of hydrogeomorphic OHWM indicators. The identification of these characteristics was determined using the 2008 Arid West Regional Supplement (USACE 2008) and A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region (Lichvar and McColley 2008).

2.2.2.3 Burrowing Owl Habitat Assessment and Breeding Season Surveys

A habitat assessment and four breeding season burrowing owl surveys were conducted in accordance with the guidelines developed by the CDFW in the Staff Report on Burrowing Owl Mitigation (CDFW 2012). Wildlife databases, including the CNDDB, were consulted and available information of known burrowing owl observations was gathered and compared to the location of the BSA prior to the start of surveys.

The habitat assessment area included the entire burrowing owl survey area, which includes the PIA and a buffer extending 500 feet outside of the PIA per the requirements of the CDFW Staff Report on Burrowing Owl Mitigation (CDFW 2012; see Appendix A: Figure 2). For the habitat assessment, the entire survey area was evaluated for the presence of suitable habitat; however, the majority of the 500-foot buffer occurred within private property. This area was evaluated using binoculars, as access onto adjacent private property was not granted.

Four breeding season burrowing owl surveys were then conducted within areas determined to support potentially suitable habitat for the species. For the breeding season surveys, meandering transects were walked through all accessible habitat within the Burrowing Owl Survey Area. The portion of the 500-foot buffer within private property was surveyed using binoculars. All four surveys were conducted between morning civil twilight and 10:00 a.m. or between two hours before sunset until evening civil twilight and were spaced throughout the breeding season. All wildlife species observed during the surveys were noted, and all burrowing owl occurrences and suitable burrows were recorded using a handheld global positioning system (GPS) device.

2.2.2.4 Bat Reconnaissance Survey

A bat reconnaissance survey was conducted to assess the potential for bat species that are known from the vicinity of the PIA to use the bridge and adjacent habitats. A qualified biologist visually inspected the existing Brandt Road bridge during twilight hours to identify any bats and/or bat sign present within the BSA. The biologist carefully inspected Brandt Road bridge, where night roosting would likely occur. The biologists also visually assessed the Alamo River for foraging bats.

2.3 Personnel and Survey Dates

Surveys are summarized in Table 1 by date, type, and personnel. Individual qualifications are summarized below.

Table 1: Surveys Performed by Date, Type, and Personnel

Survey Date	Survey Type	Personnel	Survey Time	Survey Conditions
November 19, 2024	General Biological Survey, Aquatic Resource Delineation, & Burrowing Owl Habitat Assessment	Chelsea Polevy and Camille Defrenne	10:00 a.m. - 1:00 p.m.	67-70°F, 50-30% cloud cover, wind 0-3 mph
March 3, 2025	Burrowing Owl Breeding Season Survey #1	Chelsea Polevy	7:00 a.m. - 9:00 a.m.	54-58°F, 25% cloud cover, wind 3-7 mph
April 28, 2025	Burrowing Owl Breeding Season Survey #2 and Bat Reconnaissance Survey	Alex Fromer	6:15 p.m. - 7:45 p.m.	79-73°F, 0% cloud cover, wind 0-1 mph
May 27, 2025	Burrowing Owl Breeding Season Survey #3	Chelsea Polevy	5:45 p.m. - 7:30 p.m.	96-92°F, 40-35% cloud cover, wind 3-6 mph
June 26, 2025	Burrowing Owl Breeding Season Survey #4	Alex Fromer	8:30 a.m. - 10:00 a.m.	81-88°F, 0% cloud cover, wind 1-4 mph

°F = degrees Fahrenheit; mph = miles per hour

Chelsea Polevy has eight years of experience conducting impact analyses of biological and wetland resources in support of CEQA. She is also experienced in habitat assessments; vegetation mapping; focused surveys for endangered, threatened, and sensitive species; wetland delineation; and compliance monitoring in a variety of habitats in southern California. Ms. Polevy has extensive experience conducting focused surveys for burrowing owl, rare plants, and numerous other species.

Camille Defrenne has five years of experience conducting plant and wildlife surveys throughout southern California. She conducts protocol surveys for endangered, threatened, and sensitive species and performs biological resources surveys and monitoring. Ms. Defrenne has experience performing aquatic resource delineations in compliance with local, state, and federal regulations. She also has experience as an academic researcher in scientific writing, data analysis, and programming.

Alex Fromer holds a USFWS ESA Section 10(a)(1)(A) recovery permit for multiple species and has 18 years of experience conducting vegetation mapping, species surveys, and construction monitoring in southern California. He has performed focused surveys for numerous species, including burrowing owl and small mammals. He also has formal field training in California bat ecology, field capture and handling, and acoustic monitoring.

2.4 Agency Coordination and Professional Contacts

There has been no agency coordination for this project to date. The current project-specific species list was obtained from USFWS on July 31, 2025 (Appendix B).

2.5 Limitations That May Influence Results

The general biological survey was conducted during late fall, outside the blooming period for some annual plant species.

During the general biological survey, breeding season burrowing owl surveys, and bat reconnaissance survey, wildlife species observed directly or detected from calls, tracks, scat, nests, or other sign were noted. The seasonal timing of surveys, which spanned from late fall to early summer, would have maximized detection of target avian species. However, wildlife surveys were limited by temporal factors. Surveys were conducted during the daytime and late afternoon/evening to maximize visibility for the detection of most wildlife species. Nonetheless, diurnal and crepuscular surveys may result in fewer observations of wildlife species that are more active at night, such as mammals. In addition, many species of reptiles and amphibians are nocturnal and/or secretive in their habitats and are difficult to observe using standard meandering transects. To account for survey limitations, special-status species that could occur based on species records, known ranges, and habitat preferences are analyzed herein based on their potential to occur.

3. Results: Environmental Setting

This chapter describes the existing biological and physical conditions of the BSA and the larger region within which the project is proposed. This includes a summary of topographical and hydrological features, soils, habitat, and level of human and/or natural disturbance.

3.1 Description of the Existing Physical and Biological Conditions

The PIA (i.e., Brandt Road bridge) is located at the intersection of Brandt Road and West Bowles Road and crosses the Alamo River approximately six miles southeast of the Salton Sea, southwest of the city of Calipatria, Imperial County, California (see Appendix A, Figures 1-3). Other project components (e.g., construction staging areas) extend north and south along Brandt Road. The project will close the road to public access, and all staging areas will occur within the existing roadway within 200 feet of the bridge.

3.1.1 Biological Study Area

The BSA consists primarily of private land, including active and fallow agricultural lands, with associated irrigation ditches and dirt roads in all directions (see Appendix A: Figure 2). The Alamo River flows east to west through the center of the BSA. A tributary to the Alamo River, Lateral One, flows north to south in the northwestern portion of the BSA. The BSA also encompasses developed areas that consist of the two-lane paved north/south Brandt Road, Brandt Road bridge, and a private residence in the northeast portion of the BSA.

A 500-foot buffer surrounding the PIA encompasses land containing suitable habitat for burrowing owl (i.e., the burrowing owl survey area; see Appendix A: Figure 2) and comprises agricultural land in all directions. This buffer will account for indirect impacts associated with the project from construction noise and lighting.

3.1.2 Physical Conditions

3.1.2.1 Climate

The BSA is located within the Sonoran Desert region of southern California, in an area generally hot and dry throughout most of the year, with slightly cooler and wetter winters. Most of the precipitation typically falls between December and March as infrequent, low-intensity rainfall. Very localized high-intensity monsoonal rainfall can occur during the summer months. The Imperial, California, National Weather Service station lists the average daily maximum temperature over the past 30 years as 108.6 degrees Fahrenheit (°F) in July and the average daily minimum temperature as 41.9°F in December (National Resource Conservation Service [NRCS] 2025).

3.1.2.2 Topography

The majority of the BSA is generally flat. Elevation ranges from approximately 220 feet below mean sea level in the southwestern corner of the BSA to 195 feet below mean sea level in the northwestern corner of the BSA.

3.1.2.3 Soils

Soils from three soil series—Vint, Indio, and Holtville—are mapped within the BSA. Soil types mapped within the BSA are shown on Appendix A: Figure 4. Information on soil types mapped within the BSA is summarized from the Soil Survey for Imperial County, California, Imperial Valley Area (USDA 1981).

The Vint soil series consists of very deep, somewhat excessively drained soils formed in stratified stream alluvium. This soil type is somewhat excessively drained with very slow runoff and moderately rapid permeability. Vint and Indio very fine sandy loams, wet (0 to 2 percent slope) comprises the majority of the northern half of the BSA. Vint loamy very fine sand, wet (0 to 2 percent slope) occurs in the southeastern corner of the BSA.

The Indio soil series consists of very deep, well- or moderately-well-drained soils formed in alluvium derived from mixed rock sources. Indio soils generally develop on alluvial fans, lacustrine basins, and flood plains. This soil type is well or moderately well drained with slow runoff and moderate permeability. Indio loam, wet (0 to 2 percent slope) occupies the majority of the southern half of the BSA and occurs as a thin strip in the northwestern corner of the BSA.

The Holtville soil series consists of very deep, well-drained soils formed in mixed and stratified alluvium. Holtville soils develop on flood plains and basins. This soil type is well drained with low runoff and slow permeability. Holtville silty clay, wet (0 to 2 percent slope) occurs as a small patch in the eastern portion of the BSA, just south of the Alamo River.

3.1.2.4 Hydrology

The BSA is located in the Imperial Hydrologic Unit of the Colorado River Basin (RWQCB 2014). Hydrologic inputs to the BSA occur from natural seasonal rainfall events and agricultural runoff from upslope agricultural lands to the north and south of the BSA, which is relatively flat as described above.

Based on on-site observations and review of the USGS National Hydrography Dataset (NHD; USGS 2025) and the USFWS National Wetlands Inventory (NWI; UFSWS 2025c), The BSA

consists of a segment of the Alamo River, a segment of the Lateral One canal, and three irrigation ditches. The Alamo River flows east-west through the center of the BSA and travels in a northwesterly direction for approximately seven miles before emptying into the Salton Sea. Based on the NWI, NHD, and field observations, the Alamo River carries perennial flows.

The Lateral One canal is managed by the Imperial Irrigation District and supplies water to irrigation ditches that are used by private farming operations. This approximately 1.3-mile-long canal begins at the C Lateral West canal and extends westward before pivoting south and emptying into the Alamo River. Within the BSA, the Lateral One canal flows parallel to the two-lane paved north/south Brandt Road and contains an earthen bottom (i.e., is not lined with any impervious material). Based on the NWI and field observations, the Lateral One canal carries intermittent flows.

The three irrigation ditches are associated with the agricultural fields on either side of Brandt Road in the southern portion of the BSA. Two irrigation ditches occur on the western side of Brandt Road; one is concrete-lined and the other is earthen-lined. The ditch that occurs on the eastern side of Brandt Road is earthen-lined.

3.1.3 Biological Conditions in the Biological Study Area

3.1.3.1 Vegetation Communities/Land Cover Types

The following six vegetation communities/land cover types are present within the BSA: tamarisk thickets (*Tamarix* spp. shrubland semi-natural alliance), arrow weed thickets (*Pluchea sericea* shrubland alliance), agriculture, non-vegetated channel, disturbed habitat, and urban/developed (Appendix A: Figure 5). Table 2 summarizes the acreage of each community within the PIA and the BSA.

Table 2: Vegetation Communities/Land Cover Types within the BSA

Vegetation Community/Land Cover Type[1]	PIA (acres)	BSA (PIA plus 150-foot buffer; acres)
Above/Adjacent to Existing Bridge		
Tamarisk Thickets	0.03	0.78
Arrow Weed Thickets	--	0.51
Agriculture	--	1.58
Non-vegetated Channel	0.02	0.52
Disturbed Habitat	0.02	2.58
Urban/Developed	0.35	1.70
Under Existing Bridge		
Non-vegetated Channel	--	0.03
Disturbed Habitat	0.06	0.06
TOTAL	**0.48**	**7.76**

[1]Vegetation community classifications follow Sawyer et al. (2009), with cross reference to Holland (1986) as modified by Oberbauer et al. (2008).

Tamarisk Thickets (*Tamarix* spp. shrubland semi-natural alliance)

Tamarisk thickets consist of land where saltcedar (*Tamarix ramosissima*) or another tamarisk species (*Tamarix* ssp.) is dominant in the shrub canopy (Sawyer et al. 2009). The canopy is continuous or open and the herbaceous layer is sparse. This vegetation community is present

along arroyo margins, lake margins, ditches, washes, rivers, and other watercourses (Sawyer et al. 2009).

Dense tamarisk thickets are present along the banks of the Alamo River within the BSA (Appendix C: Photograph 1). This vegetation community is dominated by mature saltcedar and athel (*Tamarix aphylla*), with some giant reed (*Arundo donax*) and common reed (*Phragmites australis*) directly adjacent to Brandt Road bridge. The understory is sparse, with few individuals of iodine bush (*Allenrolfea occidentalis*), big saltbush (*Atriplex lentiformis*), and allscale saltbush (*Atriplex polycarpa*) scattered throughout.

Arrow Weed Thickets (*Pluchea sericea* shrubland alliance)

Arrow weed thickets consist of land where arrow weed (*Pluchea sericea*) is dominant or co-dominant in the shrub canopy (Sawyer et al. 2009). The canopy is intermittent to continuous and the herbaceous layer is sparse with seasonal annuals. This vegetation community is present around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally flooded washes (Sawyer et al. 2009).

Dense, linear stands of arrow weed thickets are present on either side of the Lateral One canal within the BSA (Appendix C: Photograph 2). This vegetation community is dominated by arrow weed, with some giant reed and common reed present along the margins of the canal, and scattered individuals of salt cedar and athel throughout.

Agriculture

Agriculture refers to lands that support an active agricultural operation (Oberbauer et al. 2008). Agriculture within the BSA consists of an active agricultural field used for row crops consisting of alfalfa (*Medicago sativa*) in the southwestern portion of the BSA, an area that has been recently disked and is currently devoid of vegetation in the southeastern portion of the BSA, and an active agricultural field in the northwestern corner of the BSA.

Non-Vegetated Channel

Non-vegetated channel refers to waterways or flood channels that contain little or no vegetation and loose sandy soils due to sediment deposition during flow events. If vegetation is present, this land cover type typically has less than 10 percent cover (Oberbauer et al. 2008).

Non-vegetated channel within the BSA consists of the Alamo River (Appendix C: Photographs 3 and 4), the Lateral One canal (see Appendix C: Photograph 2), and irrigation ditches (Appendix C: Photographs 3 and 4). As described above, the Alamo River is earthen-lined and supports dense stands of tamarisk thickets along its banks. The Lateral One canal is earthen-lined and supports a dense overstory of arrow weed thickets. One irrigation ditch is concrete-lined and two irrigation ditches are earthen-lined; the concrete-lined ditch is devoid of vegetation and the earthen-lined ditches support sparse vegetation in some areas with common species including Bermuda grass (*Cynodon dactylon*), alkali heliotrope (*Heliotropium curassavicum*), and pitseed goosefoot (*Chenopodium berlandieri*).

Disturbed Habitat

Disturbed habitat refers to areas that have been physically disturbed by previous legal human activity and are no longer recognizable as a native or naturalized vegetation association. This

includes areas that have experienced repeated use that prevents natural revegetation such as dirt parking lots, construction staging areas, and off-road-vehicle trails (Oberbauer et al. 2008).

The disturbed habitat within the BSA consists of the road shoulders of Brandt Road, dirt roads, and staging and storage areas associated with agricultural operations (Appendix C: Photograph 5). In addition, disturbed habitat occurs underneath Brandt Road bridge (Appendix C: Photograph 6). The disturbed habitat is predominantly devoid of vegetation, with some scattered big saltbush and burrobush (*Ambrosia salsola*) and weedy species including Bermuda grass (*Cynodon dactylon*), London rocket (*Sisymbrium irio*), and purslane (*Portulaca oleracea*).

Urban/Developed

Urban/developed areas have been constructed or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation (Oberbauer et al. 2008). The urban/developed areas within the BSA include a private residence, Brandt Road, and Brandt Road bridge (Appendix C: Photograph 7). Vegetation within the urban/developed areas consist of ornamental landscaping associated with the residence in the northwestern portion of the BSA.

3.1.3.2 Plant Species

A total of 21 plant species, of which nine are native to the locality, were observed within the BSA during the biological surveys. A complete list of plant species detected is provided in Appendix D.

3.1.3.3 Wildlife Species

A total of 29 wildlife species, including one reptile and 28 birds, were detected within or adjacent to the BSA during the biological surveys. A complete list of wildlife species detected is provided in Appendix E.

Birds commonly detected within the BSA include species typical of the urban-wildland interface. These commonly observed species included killdeer (*Charadrius vociferus*), mourning dove (*Zenaida macroura*), American crow (*Corvus brachyrhynchos*), song sparrow (*Melospiza melodia*), western meadowlark (*Sturnella neglecta*), house finch (*Haemorhous mexicanus*), and house sparrow (*Passer domesticus*).

3.1.3.4 Invasive Species

Invasive/noxious plant species were observed within the BSA and are listed in Table 3. Species considered invasive are those listed in the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory Database (Cal-IPC 2025) and/or on the California Noxious Weeds list (California Department of Food and Agriculture [CDFA] 2021).

Table 3: Invasive Plant Species within the BSA

Common Name	Scientific Name	Rating
ANGIOSPERMS: MONOCOTS		
POACEAE (GRAMINEAE) GRASS FAMILY		
Giant reed	*Arundo donax*	high (Cal-IPC), noxious weed (CDFA)
Red brome	*Bromus rubens* [=*Bromus madritensis* ssp. *rubens*]	high (Cal-IPC)
Bermuda grass	*Cynodon dactylon*	moderate (Cal-IPC)
Mediterranean schismus	*Schismus barbatus*	limited (Cal-IPC)
ANGIOSPERMS: EUDICOTS		
Brassicaceae (Cruciferae) Mustard Family		
London rocket	*Sisymbrium irio*	limited (Cal-IPC)
Chenopodiaceae Goosefoot Family		
Russian thistle, tumbleweed	*Salsola tragus*	limited (Cal-IPC), noxious weed (CDFA)
Tamaricaceae Tamarisk Family		
Athel	*Tamarix aphylla*	limited (Cal-IPC)
Saltcedar	*Tamarix ramosissima*	high (Cal-IPC), noxious weed (CDFA)

Cal-IPC Ratings:
High = These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
Moderate = These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
Limited = These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

3.1.4 Habitat Connectivity

Within the BSA, the Alamo River serves as a movement corridor for wildlife species. The floodplain supports riparian habitats, including tamarisk thickets and arrow weed thickets, that provide cover and movement opportunities for terrestrial and avian species. The Alamo River provides connectivity from approximately 0.5-mile south of the international border in Mexico to the Salton Sea to the northwest, traveling predominately through active agriculture for approximately 60 miles. As such, the Alamo River provides additional movement opportunities for avian species, particularly those along the Pacific Flyway, and for fish and other aquatic species.

The remaining portions of the BSA are heavily influenced by human activity and consist of land cover types including agriculture, disturbed habitat, and urban/developed that are further surrounded by active agricultural fields. Though these areas may support urban-adapted species, these land cover types within the BSA do not connect large expanses of natural communities and do not function as a regional wildlife movement corridor.

3.2 Regional Species and Habitats and Natural Communities of Concern

Three special status plant species and eight special status wildlife species have been recorded in the vicinity of the BSA or have potential to occur based on the USFWS IPaC and CNPS database, as shown in Appendix B and Table 4. Potentially suitable habitat for an additional six special status wildlife species is present within the BSA. However, only two special status wildlife species were identified within or adjacent to the BSA during biological surveys, one of which was detected flying overhead and has low potential to occur within the BSA (see Appendix A: Figure 5), and five special status wildlife species have a moderate potential to occur within the BSA.

Assessments for the potential occurrence of sensitive or noteworthy species are based upon known ranges and habitat preferences for the species, as well as species occurrence records from regional databases, and are discussed in Table 4 below. Species identified or with moderate potential to occur in the BSA are discussed further in Chapter 4.

Natural communities of concern found within the BSA include three vegetation communities/land cover types: tamarisk thickets, arrow weed thickets, and non-vegetated channel. Other regional or local issues of concern include wildlife movement corridors and jurisdictional resources. Each of these communities/issues is addressed in Table 4 and discussed further in Chapter 4.

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
SPECIAL STATUS PLANT SPECIES					
BORAGINACEAE BORAGE FAMILY					
Ribbed cryptantha	*Johnstonella costata*	CNPS 4.3	Desert dunes in Mojavean desert scrub and Sonoran desert scrub; sandy soils; blooms February-May; elevation -195 to 1,640 feet.	A	Not expected. The BSA lacks suitable Mojavean and Sonoran desert scrub habitats with desert dunes.
FABACEAE LEGUME FAMILY					
Gravel milk-vetch	*Astragalus sabulonum*	CNPS 2B.2	Desert dunes in Mojavean desert scrub and Sonoran desert scrub; blooms February-June; elevation -195 to 3,050 feet.	A	Not expected. The BSA lacks suitable Mojavean and Sonoran desert scrub habitats with desert dunes.
NAMACEAE NAMA FAMILY					
Mud nama	*Nama stenocarpa*	CNPS 2B.2	Marshes, swamps, lake margins, and riverbanks; blooms January-July; elevation 15 to 1,640 feet.	HP	Low potential. The riverbank habitat within the BSA is characterized by disturbed, saline environments with altered hydrology and limited native vegetation. Moreover, this species would likely have been observed, if present during focused biological surveys.
SPECIAL STATUS WILDLIFE SPECIES					
INVERTEBRATES					
APIDAE HONEY BEES, BUMBLE BEES, AND ALLIES					
Crotch's bumble bee	*Bombus crotchii*	SCE	Coastal areas, open grasslands, shrub habitats.	HP	Low potential. Crotch's bumble bees are floral generalists, meaning they gather pollen and nectar from a wide variety of flowering plants (Xerces Society 2018). The BSA supports nectar sources including arrow weed, burrobush, Mexican devil-weed (*Chloracantha spinosa* var. *spinosa*), and alfalfa. The BSA also supports suitable nesting sites consisting of bare ground and rodent burrows. However, this species is not known to occur in northeastern Imperial County and has not been detected within 5

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
					miles of the BSA and (CDFW 2025a, USFWS 2025a).
NYMPHALIDAE BRUSH-FOOTED BUTTERFLIES					
Monarch	*Danaus plexippu*	FC	Wide variety of habitats, including urban areas. Roosts and overwinters on Eucalyptus trees. Host plant is milkweed (*Asclepias* sp.).	A	Not expected. The host plant for this species, *Asclepias* sp., was not observed within the BSA. Moreover, the BSA lacks suitable overwintering habitat (i.e., Eucalyptus trees) and the nearest overwintering site is located approximately 94 miles southwest of the BSA along the coast in San Diego County (USFWS 2023, 2025a). This species has not been detected within 5 miles of the BSA (CDFW 2025a, USFWS 2025a).
FISHES					
CYPRINODONTIDAE PUPFISH					
Desert pupfish	*Cyprinodon macularius*	FE, SE	Shallow waters of springs, small streams, and marshes. Often associated with soft substrates and clear water.	A	Not expected. The BSA lacks a suitable marine environment with shallow waters of springs, small streams, or marshes. Moreover, the Alamo River is highly degraded due to elevated salinity, channelization, altered flows, and agricultural runoff, resulting in poor water quality and lack of habitat complexity. In addition, this species is known to occupy a small number of locations limited to San Felipe Creek, San Sebastian Marsh, and a few isolated wetlands near the Salton Sea in Imperial County (USFWS 1993). One record of this species occurs approximately 4.90 miles northwest of the BSA in an irrigation drain located between the Imperial State Wildlife Area and the Salton Sea National Wildlife Refuge (CDFW 2025a).

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
CATOSTOMIDAE SUCKERS					
Razorback sucker	*Xyrauchen texanus*	FE, SE	Warm tributaries, shallow water, gravelly-bottom rivers.	A	Not expected. Within the BSA, the Alamo River is highly degraded due to elevated salinity, channelization, altered flows, and agricultural runoff, resulting in poor water quality and lack of habitat complexity. Moreover, most populations of this species have been extirpated from the lower Colorado River Basin (USFWS 1998). Only one individual of this species was detected in the BSA in 1945 (CDFW 2025a) and one additional species record from 1949 occurs approximately 3.90 miles northwest of the BSA near the confluence of the Alamo River and the Salton Sea. No recent records occur in Imperial County.
BIRDS					
THRESKIORNITHIDAE IBISES & SPOONBILLS					
White-faced ibis	*Plegadis chihi*	WL	Freshwater ponds, irrigated fields, brackish lagoons. Migrant and winter visitor, rare in summer. Very localized breeding.	HP	Observed, but low potential. Although this species was detected flying overhead during biological surveys (see Appendix A: Figure 5) and potential foraging habitat may be present during periods of agricultural field inundation, suitable nesting habitat is not present within the BSA. This species nests primarily in shallow freshwater marshes with islands of emergent vegetation (Ryder and Manry 1994). In addition, this species has not been detected within 5 miles of the BSA (CDFW 2025a, USFWS 2025a).

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
RALLIDAE RAILS, GALLINULES, & COOTS					
California black rail	*Laterallus jamaicensis coturniculus*	ST, CFP	Tidal marshes, grassy marshes. Resident populations extirpated.	A	Not expected. The BSA lacks suitable nesting and foraging habitat consisting of marshes with pickleweed (*Salicornia virginica*) and shallow water. Within the BSA, the Alamo River and its floodplain are characterized by high salinity levels, altered flow regimes, and limited emergent vegetation. Moreover, no recent species occurrence records exist in Imperial County. This species was detected adjacent to the Salton Sea in 1947 and in the vicinity of Finney Lake between 1977 and 1989 (CDFW 2025a).
Yuma Ridgway's [=clapper] rail	*Rallus obsoletus [=longirostris] yumanensis*	FE, ST, CFP	Marshland vegetation, dense cattail stands, bulrush, reeds. Resident.	A	Not expected. Although the tamarisk thickets and arrow weed thickets within the BSA contain some reeds, this species occupies emergent dense marsh vegetation, such as pickleweed and cordgrass (*Spartina foliosa*), as well as dense, mature stands of cattail and bulrush, interspersed with shallow open water or mudflats for foraging (CDFW 2004, USFWS 2009). The Alamo River and its floodplain are highly degraded and characterized by high salinity levels, altered flow regimes, and limited emergent vegetation. This species has been detected approximately 4.5 miles northwest of the BSA at the Salton Sea National Wildlife Refuge during point count surveys conducted between 2004 and 2009 and approximately 3.50 miles southeast of the BSA at Ramer Lake and Finney Lake in 1974, 1982, and 2000 (CDFW 2025a, USFWS 2025a).

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
CHARADRIIDAE LAPWINGS & PLOVERS					
Mountain plover	*Charadrius montanus*	SSC	Grasslands, fields, valleys. Localized winter resident.	HP	Moderate potential. The BSA supports agricultural fields suitable for nesting and foraging. This species has been detected less than 1 mile northwest of the BSA in agricultural fields in Calipatria (CDFW 2005a).
STRIGIDAE TYPICAL OWLS					
Burrowing owl	*Athene cunicularia*	SSC, SCE	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	P	Observed. One burrowing owl pair was detected adjacent to the BSA within suitable agricultural land during focused burrowing owl surveys (see Appendix A: Figure 5). Numerous occurrences of this species exist approximately 3 miles east/northwest and approximately 3.65 miles southeast of the BSA within agricultural lands and in the vicinity of the Imperial National Wildlife Refuge (CDFW 2025a).
PICIDAE WOODPECKERS & SAPSUCKERS					
Gila woodpecker	*Melanerpes uropygialis*	SE	Saguaro and willow-cottonwood desert. Date palms, tamarisk. Lower Colorado River.	A	Not expected. Although tamarisk is present within the BSA, riparian trees in isolated patches smaller than 49 acres do not support this species (U.S. Department of the Interior 2004). Moreover, no recent species occurrence records exist in Imperial County. This species was detected approximately 3.05 miles northwest of the BSA southeast of the Salton Sea in 1950 (CDFW 2025a).

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
MAMMALS					
VESPERTILIONIDAE VESPER BATS					
Pallid bat	*Antrozous pallidus*	SSC	Arid deserts and grasslands. Day and night roosts in rock crevices in outcrops and cliffs, caves, mines, trees, bridges, and other human structures. Roosts tend to be warm and elevated. Forage for large-bodied arthropods over open shrublands, grasslands, and orchards.	HP	Moderate potential. Suitable cliff roosting habitat does not exist within the BSA; however, crevices on the underside of Brandt Road bridge are capable of supporting roosting for this species. This species has not been detected within 5 miles of the BSA (CDFW 2025a, USFWS 2025a).
Western red bat	*Lasiurus frantzii*	SSC	Occurs throughout California, and western Nevada, east into Arizona and Utah. Roosts in foliage of riparian trees, particularly willows, sycamores, and cottonwoods. Feeds on a variety of moths and other flying insects.	HP	Moderate potential. The BSA supports suitable desert riparian habitat with trees capable of supporting roosting for this species. This species has not been detected within 5 miles of the BSA (CDFW 2025a, USFWS 2025a).
Western yellow bat	*Lasiurus xanthinus*	SSC	Active year-round. Roosts in the foliage of trees in arid habitats, particularly in native and exotic palm trees. Forages for a variety of flying insects over streams and ponds. Ranges from southern California and Arizona into western Mexico.	HP	Moderate potential. The BSA supports suitable arid habitats with trees capable of supporting roosting for this species. In addition, the BSA contains open water for foraging. This species has not been detected within 5 miles of the BSA (CDFW 2025a, USFWS 2025a).
MOLOSSIDAE FREE-TAILED BATS					
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	SSC	Roosts in crevices in vertical cliffs and quarries. Forages over a variety of habitats for flying beetles and large moths. Ranges from Orange County south through San Diego and east through southern Arizona.	HP	Moderate potential. Suitable cliff roosting habitat does not exist within the BSA; however, crevices on the underside of Brandt Road bridge are capable of supporting roosting for this species. This species has not been detected within 5 miles of the BSA (CDFW 2025a, USFWS 2025a).

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale
NATURAL COMMUNITIES AND OTHER SENSITIVE RESOURCES					
Tamarisk thickets		*	Densely vegetated riparian thickets dominated by saltcedar or another tamarisk species (*Tamarix* ssp.) in the shrub canopy. The canopy is continuous or open and the herbaceous layer is sparse.	P	This vegetation community is present within the BSA.
Arrow weed thickets		*	Densely vegetated riparian thickets dominated by arrow weed in the shrub canopy. The canopy is intermittent to continuous and the herbaceous layer is sparse with seasonal annuals.	P	This vegetation community is present within the BSA.
Non-vegetated channel		*	Waterways or flood channels that contain little or no vegetation and loose sandy soils due to sediment deposition during flow events. This land cover type typically has less than ten percent vegetation cover.	P	This land cover type is present within the BSA.
Wildlife movement corridor		N/A	Areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance.	P	The BSA functions as part of a wildlife movement corridor, which comprises the Alamo River and adjacent undeveloped floodplain, and connects to the Salton Sea to the northwest.
Jurisdictional wetlands/waters		N/A	May include wetlands, non-wetland waters, riparian habitat, and isolated waters.	P	Resources potentially under the jurisdiction of USACE, CDFW, and RWQCB were identified within the BSA. These include non-wetland waters of the U.S, non-wetland waters of the State, and riparian habitat.

NOTE: Scientific and common names were primarily derived from Jepson eFlora (Jepson Flora Project 2025). In instances where common names were not provided in this resource, common names were obtained from Rebman and Simpson (2014). Additional common names were obtained from the USDA maintained database (USDA 2025) or the *Sunset Western Garden Book* (Brenzel 2001) for ornamental/horticultural plants. Zoological nomenclature for invertebrates is in accordance with the NatureServe 2025 and Evans 2008; for fish with NatureServe 2025; for birds with Chesser et al. 2025; for mammals with Bradley et al. (2014), American Society of Mammalogists 2025. Determination of the potential occurrence for listed, sensitive, or noteworthy species is based upon known ranges and habitat preferences for species follows Nature Festivals of San Diego County 2002, Evans 2008, Page et al. 2013, Unitt 2004, Tremor et al. 2017, Western Bat Working Group 2017, and Harvey et al. 2011. Federal and state listing status is based on California Department of Fish and Wildlife, Natural Diversity Database (CDFW) 2025a.

Table 4: Listed, Proposed Species, and Natural Communities Potentially Occurring or Known to Occur within and adjacent to the BSA

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Occurrence Determination and Rationale

STATUS

FEDERAL CANDIDATES AND LISTED SPECIES

FE = Federally listed endangered

FC = Federal candidate for listing (taxa for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list as endangered or threatened; development and publication of proposed rules for these taxa are anticipated)

STATE LISTED SPECIES

CFP = California Department of Fish and Wildlife fully protected species

SE = Listed as endangered by the state of California

ST = Listed as threatened by the state of California

SCE = State candidate for listing as Endangered

SSC = State Species of Special Concern

WL = California Department of Fish and Wildlife watch list species

CALIFORNIA NATIVE PLANT SOCIETY (CNPS): CALIFORNIA RARE PLANT RANKS (CRPR)

1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.

2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing

4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations

.2 = Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)

.3 = Species not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)

***NATURESERVE'S HERITAGE PROGRAM**

Considered an imperiled community according to the rarity rankings established by the NatureServe's Heritage Program methodology. Alliances or associations with a G1 through G3 code are considered rare and threatened throughout their range. An alliance or association with a G5 and an S1 through an S3 code is secure through its range outside the State but is rare and threatened in California. A G4 S4 alliance may or may not be endemic to the state and is considered secure statewide (Sawyer et al. 2009).

HABITAT PRESENT/ABSENT

A = Absent - no habitat present and no further work needed.

HP = Habitat Present - habitat is or may be present. The species may be present.

P = Present - the species is present.

4. Results: Biological Resources, Discussion of Impacts and Mitigation

This chapter describes the habitats and natural communities of special concern, special status plant species, and special status wildlife species that are known or likely to occur within the BSA; the potential impacts to these resources; and the avoidance, minimization, and mitigation measures proposed to protect these sensitive resources.

4.1 Habitats and Natural Communities of Special Concern

Habitats and natural communities of special concern are those communities that (1) are of limited distribution; (2) have federal, state, or local laws regulating their development; and/or (3) support concentrations of special status plant or wildlife species. Waters of the U.S./waters of the State are also considered sensitive by both federal and state agencies.

The following habitats and/or natural communities of special concern were mapped within the BSA: tamarisk thickets, arrow weed thickets, and non-vegetated channel (see Appendix A: Figure 5). Other regional or local issues of concern include wildlife movement and jurisdictional resources. Potentially jurisdictional waters within the BSA are shown on Appendix A: Figure 6.

Permanent and temporary impacts to vegetation communities are presented in Table 5. The full width of the proposed bridge is considered a permanent impact in vegetated areas (i.e., tamarisk thickets, disturbed habitat, and urban/developed land) due to installation of bridge supports (including abutments and riprap) and permanent shading effects. However, within the non-vegetated channel, only the permanent shading effects associated with the expanded bridge width are considered permanent impacts. No new piles or piers will be installed within the channel. Instead, the replacement bridge design would remove approximately 28 square feet of existing supports (piers with timber columns and cross-braces). The remainder of the PIA is included in temporary impact calculations to account for use of construction staging areas, which will occur within Brandt Road within 200 feet of the bridge. Impacts to vegetation communities are shown on Appendix A: Figure 7.

Table 5: Vegetation Communities/Land Cover Types, Impacts, and Mitigation

Vegetation Community/ Land Cover Type[1]	Permanent Impacts (acres)	Temporary Impacts (acres)	Mitigation Ratio (Permanent/ Temporary)	Mitigation Requirements (Permanent/ Temporary; acres)
Tamarisk Thickets[2]	0.03	--	2:1 / 1:1	0.06 / --
Arrow Weed Thickets[2]	--	--	2:1 / 1:1	-- / --
Agriculture	--	--	N/A	N/A
Non-vegetated Channel[2]	0.02	--	-- / --	-- / --
Disturbed Habitat	0.08	--	N/A	N/A
Urban/Developed	0.04	0.31	N/A	N/A
TOTAL[3]	**0.17**	**0.31**		**0.06 / --**

[1]Vegetation community classifications follow Sawyer et al. (2009), with cross reference to Holland (1986) as modified by Oberbauer et al. (2008).
[2]Vegetation community/land cover type subject to jurisdiction by USACE under Section 404 of the CWA, CDFW under Sections 1600-1616 of the State Fish and Game Code, and RWQCB under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. Impacts are addressed further in Section 4.1.5.
[3]Areas are presented in acres rounded to the nearest 0.01. Any discrepancies in the total are due to rounding.

4.1.1 Discussion of Tamarisk Thickets

Although tamarisk thickets are dominated by non-native invasive tree species, this vegetation community is associated with riparian systems and is known to provide similar physical, chemical, and habitat-related functions. Tamarisk thickets can provide suitable cover, foraging, and nesting opportunities for a variety of wildlife species.

Tamarisk thickets within the BSA are potentially subject to jurisdiction by CDFW under Sections 1600-1616 of the CFGC. Impacts to tamarisk thickets are addressed further in Section 4.1.5.

4.1.1.1 Survey Results

Dense tamarisk thickets providing moderate ecological value occur along the banks of the Alamo River within the BSA. Although tamarisk is a non-native invasive species, tamarisk thickets provide riparian function and have connectivity to larger stands of native and non-native riparian vegetation that extend up- and downstream along the Alamo River outside of the BSA, thus contributing localized habitat functions, including foraging and nesting opportunities for wildlife in an otherwise highly modified landscape. Tamarisk thickets may also provide suitable roosting habitat for special status mammals, including State Species of Special Concern western red bat and State Species of Special Concern western yellow bat.

4.1.1.2 Project Impacts

The project would result in direct permanent impacts to 0.03 acre of tamarisk thickets (see Table 5). No direct temporary impacts are anticipated to occur to tamarisk thickets as a result of the project.

4.1.1.3 Avoidance and Minimization Efforts/Compensatory Mitigation

The project is a bridge replacement and will not increase capacity, add lanes, or substantially widen the bridge. The project has been designed to keep permanent impacts to the minimum necessary to fulfill the project purpose and need. The following measures will be employed during project construction to avoid and/or minimize impacts to biological resources:

BIO-1. Prior to initiation of construction activities, orange construction fencing or equivalent high-visibility construction fencing shall be installed along the limits of disturbance adjacent to sensitive biological resource areas. All construction (including access/staging areas) shall be restricted to developed areas or previously defined and approved work areas. Equipment staging, storage, and maintenance shall be located outside the active river channel and riparian habitats. Temporary fencing will be removed at the completion of construction.

BIO-2a. A qualified biologist (approved by CDFW and USFWS) shall monitor construction activities as needed to oversee avoidance of sensitive biological resources, with full-time monitoring during initial vegetation removal, grubbing, and grading. Monitoring biologists shall be familiar with the special status species known to be present or with potential to occur on-site that could occur within the sensitive vegetation communities to be removed. Should a special status species be encountered, the biological monitor shall request that the resident engineer (RE) stop work in the area.

The biological monitor shall determine the next steps required, e.g., implement avoidance measures, contact Caltrans, the County or Wildlife Agencies, and will work with the RE to identify areas where work can proceed while avoidance measures are determined.

BIO-2b. An employee education program shall be developed and implemented prior to construction by a qualified biologist. Each construction employee (including temporary, contractors, and subcontractors) shall receive a training/awareness program prior to working on the proposed project. Employees shall be advised of listed species in the project's vicinity and the potential penalties for taking of such species. At a minimum, the program shall include: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of federal and state laws, reporting requirements, and project-specific mitigation and avoidance and minimization measures designed to reduce impacts to these species. The employee education program shall also cover project permit requirements, if applicable, and communication protocol with the public agency constructing the project.

BIO-3. The following general construction BMPs will be employed to minimize and avoid impacts to sensitive biological resources from construction activities:

- Any nighttime construction lighting (e.g., staging areas, equipment storage sites, active work areas) shall be selectively placed and directed toward the construction site. Lighting shall be limited to the lowest illumination necessary to allow for safe completion of work and directed away from, shielded, or pointed downward and away from the river corridor and adjacent habitat.
- Erosion and sediment control measures, e.g., straw wattles, gravel bags, silt fencing, shall be in place and in functional condition throughout all phases of the project where sediment run-on or run-off from exposed slopes threatens to enter the river or aquatic habitats. Jute for straw wattles must be made of natural material, not plastic.
- Monitoring biologist shall check the project site immediately prior to and periodically during construction, to identify presence of invasive weeds and recommend measures to avoid their inadvertent spread resulting from construction activities. Measures may include inspection and cleaning of construction equipment and use of eradication strategies. Special care shall be taken during transport, use, and disposal of soils containing invasive weed seeds and all weedy vegetation removed during construction shall be properly stored and disposed of to prevent spread into areas outside of the construction area.
- All heavy equipment shall be washed and cleaned of sediment, debris, and foreign matter prior to entering the project area to minimize the spread of invasive weeds.
- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall be restricted to designated areas located outside of marked (e.g., flagged/staked) wetlands or waters. Spill prevention supplies, such as drip pans and spill kits, shall be maintained on-site to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach WOTUS/WOTS.

- All steep trenches, holes, and excavations during construction shall be covered at night with backfill, plywood, metal plates, or other means, and the edges covered with soils and plastic sheeting such that small wildlife cannot access them.
- Soil piles shall be covered at night to prevent wildlife from burrowing in. The edges of the sheeting shall be weighed down by sandbags. These areas may also be fenced to prevent wildlife from gaining access.
- Exposed trenches, holes, and excavations shall be inspected daily (i.e., at the end of the workday, before sealing the exposed area) by the Resident Engineer, construction inspector, superintendent or project foreman to monitor for wildlife entrapment. Excavations shall provide an earthen ramp to allow for a wildlife escape route.
- All waste must be removed from the project area. All food-related trash shall be enclosed in sealed wildlife-proof containers and removed from the site daily. All construction-related debris, excess materials, and building materials shall be removed from the project site for disposal at an authorized landfill or other disposal site in compliance with federal, state, and local laws and regulations.
- Project personnel shall be prohibited from bringing domestic pets to construction sites to ensure pets do not disturb or depredate wildlife in adjacent habitats.

Mitigation for permanent impacts to tamarisk thickets will be accomplished in the form of enhancement, restoration, and/or creation of habitat, on- or off-site; deduction of credits from a pre-approved mitigation area; or other off-site preservation of permanent impacts. Mitigation for 0.03 acre of permanent impacts is proposed at a 2:1 ratio, which equates to a mitigation total of 0.06 acre. A Habitat Restoration and Mitigation Plan would be prepared to detail the proposed mitigation program. This plan would also include mitigation required for jurisdictional waters as noted in Section 4.1.5.

4.1.2 Discussion of Arrow Weed Thickets

Arrow weed thickets are a native riparian vegetation community typically occurring along washes, streams, and floodplains. These thickets contribute to bank stabilization, soil retention, and nutrient cycling, and they provide important structural habitat within riparian corridors. Arrow weed thickets can support a variety of wildlife species by offering cover, foraging opportunities, and nesting or roosting habitat for birds and small mammals.

Arrow weed thickets within the BSA are potentially subject to jurisdiction by CDFW under Sections 1600-1616 of the CFGC.

4.1.2.1 Survey Results

Dense, linear stands of arrow weed thickets providing moderate ecological value are present on either side of the Lateral One canal within the BSA. While this vegetation community contributes structural cover, nesting habitat, and foraging resources, its artificial setting limits its overall hydrologic and habitat functions. Nonetheless, arrow weed thickets may provide localized habitat value and connectivity to the Alamo River corridor within an otherwise highly disturbed agricultural landscape.

4.1.2.2 Project Impacts

No direct permanent or temporary impacts are anticipated to occur to arrow weed thickets as a result of the project (see Table 5).

4.1.2.3 Avoidance and Minimization Efforts/Compensatory Mitigation

As detailed in Section 4.1.1.3, the project has been designed to keep permanent impacts to the minimum necessary to fulfill the project purpose and need. Implementation of BIO-1 through BIO-3, described in Section 4.1.1.3 above, would avoid indirect impacts to arrow weed thickets. As no direct impacts to arrow weed thickets are expected to occur, no compensatory mitigation is required.

4.1.3 Discussion of Non-vegetated Channel

Non-vegetated channels, including natural waterways and constructed lateral canals, function as important components of the regional hydrologic system. Although lacking vegetative cover, these channels convey surface water, support sediment transport, and influence local hydrology and water quality. The open water provides foraging habitat for a variety of wildlife species, particularly waterfowl, wading birds, and raptors, and serves as movement corridors across an otherwise intensively managed agricultural landscape.

Non-vegetated channels within the BSA are potentially subject to jurisdiction by USACE under Section 404 of the CWA, CDFW under Sections 1600-1616 of the CFGC, and RWQCB under Section 401 of the CWA and the Porter-Cologne Act. Impacts to the non-vegetated channel are addressed further in Section 4.1.5.

4.1.3.1 Survey Results

Within the BSA, non-vegetated channels consist of a natural riverine system (Alamo River) and constructed irrigation systems (Lateral One canal and irrigation ditches) providing low to moderate ecological value. The Alamo River provides moderate ecological value, functioning as a permanent water source and movement corridor that supports foraging and roosting habitat for birds and bats, though its value is reduced by degraded water quality and dominance of non-native vegetation along the floodplain. Similarly, the Lateral One canal offers aquatic and riparian habitat as well as movement corridors for wildlife within an otherwise highly managed agricultural landscape. Irrigation ditches provide low ecological value, primarily serving as artificial waterways that may offer temporary foraging or cover for birds and small mammals but generally lack native riparian functions.

4.1.3.2 Project Impacts

Approximately 0.10 acre of the existing bridge footprint spanning vegetated areas (tamarisk thickets, disturbed habitat, and urban/developed land) and the non-vegetated channel will be replaced as part of the project. However, as discussed in Section 4.1, within the non-vegetated channel consisting of the Alamo River, only the permanent shading effects associated with the expanded bridge width are considered permanent impacts. No new piles or piers will be installed within the channel; instead, approximately 28 square feet of existing supports will be removed. Based on this assessment, the project would result in direct permanent impacts to 0.02 acre of non-vegetated channel from expanded shading (see Table 5).

Direct temporary impacts may also occur as a result of construction activity if hazardous materials, sediment, or other construction-related runoff enters the non-vegetated channel. Release of pollutants or sedimentation may reduce water quality.

4.1.3.3 Avoidance and Minimization Efforts/Compensatory Mitigation

As detailed in Section 4.1.1.3, the project has been designed to keep permanent impacts to the minimum necessary to fulfill the project purpose and need. Implementation of BIO-1 through BIO-3, described in Section 4.1.1.3 above, would minimize impacts to the non-vegetated channel. Compensatory mitigation for permanent impacts to the non-vegetated channel are addressed further in Section 4.1.5.

4.1.4 Discussion of Wildlife Movement Corridors/Habitat Connectivity

Habitat linkages and wildlife corridors are defined as areas that connect suitable wildlife habitat areas in a region otherwise fragmented by rugged terrain, changes in vegetation, or human disturbance. Natural features such as canyon drainages, ridgelines, or areas with vegetation cover provide corridors for wildlife travel. Habitat linkages and wildlife corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas; and facilitate the exchange of genetic traits between populations (Beier and Loe 1992). Wildlife movement corridors are considered sensitive by resource and conservation agencies.

4.1.4.1 Survey Results

The Alamo River within the BSA serves as a movement corridor for wildlife species. The floodplain and adjacent slopes support riparian habitats that provide cover and movement opportunities for terrestrial and avian species. In addition, the river channel provides movement opportunities for fish and other aquatic species between the river system and the Salton Sea. Specifically, although the Alamo River is highly degraded and does not function as a movement corridor for special status fish species as detailed in Table 4, some tolerant species adapted to poor water quality, such as common carp (*Cyprinus carpio*), mosquitofish (*Gambusia affinis*), and tilapia (*Oreochromis* spp.), may utilize the river as a movement corridor.

4.1.4.2 Project Impacts

The project would not result in direct permanent impacts to wildlife movement along the Alamo River. Although the project includes installation of bridge supports in areas consisting primarily of disturbed habitat and urban/developed land and a slight increase in bridge width that would result in localized permanent shading impacts, these modifications would not obstruct the river channel or otherwise create a barrier to wildlife passage. No piles or piers will be installed within the river; instead, the replacement design would remove existing supports. As such, the project is not anticipated to substantially obstruct movement of terrestrial or aquatic wildlife species and will allow for unobstructed passage.

Indirect temporary impacts to wildlife movement could occur during construction activities associated with the project. Although construction activity would not occur directly within the Alamo River corridor (i.e., work would primarily occur in existing developed/disturbed areas), the presence of equipment, increased human activity, and elevated noise levels may temporarily deter wildlife from utilizing or moving through the area. No construction-related fencing or other

features would fully restrict wildlife passage. Activity levels and noise within work areas would return to pre-construction conditions following completion of bridge construction, allowing for continued wildlife movement.

4.1.4.3 Avoidance and Minimization Efforts/Compensatory Mitigation

As mentioned in Section 4.1.1.3, the project has been designed to keep permanent impacts to the minimum necessary to fulfill the project purpose and need. Implementation of BIO-1 through BIO-3, described in Section 4.1.1.3 above, would minimize impacts to wildlife movement, and the following measure will be employed during project construction to further minimize potential impacts to wildlife movement:

> **BIO-4.** Temporary construction fencing shall be configured so that at least one unobstructed land passage remains open on each side of the river to facilitate wildlife movement.

As no direct impacts to wildlife movement corridors or habitat connectivity would occur, no mitigation is required.

4.1.5 Discussion of Jurisdictional Resources

An aquatic resources delineation was conducted to determine the extent of resources within the BSA that have the potential to fall under the jurisdiction of water regulatory agencies. As detailed in Section 2.1 above, USACE regulates the discharge of dredged or fill material into WOTUS in accordance with Section 404 of the CWA, with jurisdiction limited to WOTUS as currently defined (33 CFR 328.3, revised 2023). CDFW regulates activities that would divert or obstruct the natural flow or would substantially change the bed, channel, or bank of any river, stream, or lake that supports fish or wildlife in accordance with sections 1600–1607 of the CFGC. CDFW also has jurisdiction over riparian habitats associated with these watercourses, as delineated by the outer edge of riparian vegetation or at the top of the bank of streams or lakes, whichever is wider. RWQCB is the regional agency responsible for protecting water quality in California, with jurisdiction including all WOTS, which include all WOTUS as well as isolated and ephemeral waters, pursuant to both the federal CWA and the California Porter-Cologne Water Quality Control Act.

4.1.5.1 Survey Results

As presented in the Aquatic Resource Delineation Report for the Brandt Road Bridge Replacement Project (Appendix F) and shown on Appendix A: Figure 8, resources potentially under the jurisdiction of USACE, RWQCB, and CDFW were identified within the BSA. These include potential Non-wetland WOTUS/WOTS and CDFW Streambed and Riparian.

4.1.5.2 Project Impacts

Direct permanent and temporary impacts to potentially jurisdictional aquatic resources for each agency are presented in Table 6 and Appendix A: Figure 8.

Table 6: Potential Jurisdictional Resources within BSA

Potential Jurisdictional Resource	Acreage in BSA (linear feet)	Acreage of Temporary Impacts (linear feet)	Acreage of Permanent Impacts (linear feet)
USACE Waters of the U.S.	**0.59 (1,389)**	--	**0.02 (871)[1]**
Non-wetland Waters of the U.S.	0.59 (1,389)	--	0.02 (871)[1]
RWQCB Waters of the State	**0.59 (1,389)**	--	**0.02 (871)[1]**
Non-wetland Waters of the State	0.59 (1,389)	--	0.02 (871)[1]
CDFW State Waters	**1.88**	--	**0.05**
Streambed	0.59 (1,389)	--	0.02 (871)[1]
Riparian	1.29	--	0.03

[1]As discussed in Section 4.1, within the potentially jurisdictional Alamo River, only the permanent shading effects associated with the expanded bridge width are considered permanent impacts.
NOTE: Any discrepancies in total are due to rounding.

The project would result in direct permanent impacts to 0.02 acre (871 linear feet) of USACE non-wetland WOTUS, 0.02 acre (871 linear feet) of RWQCB non-wetland WOTS, and 0.05 acre of CDFW state waters (streambed and riparian). Impacts to USACE non-wetland WOTUS, RWQCB non-wetland WOTS, and CDFW streambed would coincide with impacts to non-vegetated channel. Impacts to CDFW riparian would coincide with impacts to tamarisk thickets.

4.1.5.3 Avoidance and Minimization Efforts/Compensatory Mitigation

As detailed in Section 4.1.1.3, the project has been designed to keep permanent impacts to the minimum necessary to fulfill the project purpose and need. Implementation of BIO-1 through BIO-3, described in Section 4.1.1.3 above, would minimize impacts to jurisdictional resources.

Impacts to jurisdictional waters may require permit authorizations from the USACE through the Section 404 Permit Program, from the CDFW through a 1602 Streambed Alteration Agreement, and from the RWQCB through a Section 401 Water Quality Certification. Authorized impacts would require in-kind compensatory mitigation, such as creation, enhancement, or preservation of aquatic habitat, designed to achieve no-net-loss of both acreage and ecological function, consistent with Resource Agency mitigation ratios and functional assessment requirements. Mitigation projects would include monitoring and maintenance to ensure the successful establishment of habitat over a multi-year period.

Prior to issuance of a grading permit for any on-or-off-site improvement that would affect the bed or bank of a channel, canal, or drain, the applicant shall provide documentation that the action is covered by existing Resource Agency permits, demonstrate a no substantial effect determination, or obtain appropriate permits (e.g., Section 404 Permit, Section 1602 Streambed Alteration Agreement, Section 401 Water Quality Certification).

4.2 Special Status Plant Species

Plant species are considered sensitive if they (1) are listed by state or federal agencies as threatened or endangered or are proposed for listing; (2) have a CRPR of 1B (considered endangered throughout its range), 2B (considered endangered in California but more common elsewhere), 3 (lacking sufficient distribution, endangerment, and/or taxonomic information), or 4 (limited distribution) of the CNPS Inventory of Rare and Endangered Vascular Plants of

California (2021); or (4) are considered rare, endangered, or threatened by the State of California or local conservation organizations or specialists.

Three special status plant species, ribbed cryptantha (*Johnstonella costata*), gravel milk-vetch (*Astragalus sabulonum*), and mud nama (*Nama stenocarpa*), have potential to occur based on the CNPS database (see Appendix B); however, the BSA does not support suitable habitat for ribbed cryptantha or gravel milk-vetch and mud nama has a low potential to occur (see Table 4). No additional special status plant species are expected to occur within the BSA due to high levels of disturbance from surrounding agricultural activities, including elevated salinity, altered hydrology, soil compaction and erosion, reduced native vegetation, proliferation of non-native and invasive species, and associated habitat degradation.

4.3 Special Status Wildlife Species

Wildlife species are considered sensitive if they (1) are listed by state or federal agencies as threatened or endangered or are proposed for listing; (2) are state species of special concern or fully-protected; or (3) are considered rare, endangered, or threatened by the state of California, CNDDB, or local conservation organizations or specialists.

One special status wildlife species, burrowing owl, was observed outside and just south of the burrowing owl survey area during of the surveys (see Table 4 and Appendix A: Figure 5). Five additional special status species have a moderate potential to occur within the BSA: mountain plover (*Charadrius montanus*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus frantzii*), western yellow bat (*Lasiurus xanthinus*), and pocketed free-tailed bat (*Nyctinomops femorosaccu*; see Table 4). In addition, migratory birds and raptors have potential to occur within the BSA. Survey work, impact analyses, and avoidance, minimization, and mitigation measures for these species or groups of species occurring or with potential to occur within the BSA are also provided in the following sections.

4.3.1 Discussion of Burrowing Owl

The burrowing owl is a state species of special concern and a state candidate for listing as endangered. Burrowing owl is primarily restricted to the western United States and Mexico. Habitat for the burrowing owl includes dry, open, short-grass areas with level to gentle topography and well-drained soils (CDFW 2012). These areas are also often associated with burrowing mammals (Haug et al. 1993). In Imperial County, this species can be found in desert scrub, grassland, and agricultural areas, where it digs its own or occupies existing burrows. The burrowing owl is diurnal and perches during daylight at the entrance to its burrow or on low posts. Nesting occurs from March through August. Burrowing owls form a pair–bond for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Burrowing owls are opportunistic feeders, consuming a diet that includes arthropods, small mammals, and birds, and occasionally amphibians and reptiles (Haug et al. 1993). Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this species include the poisoning of squirrels and prairie dogs, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

4.3.1.1 Survey Results

One burrowing owl pair and occupied burrow was observed outside of but adjacent to the burrowing owl survey area during the habitat assessment and breeding surveys (see Appendix A: Figure 7). Detailed results from the habitat assessment and breeding season surveys are presented in the post-survey report (Appendix G). The owl pair and occupied burrow were observed to the south of the Burrowing Owl Survey Area, along a berm situated between Brandt Road and an active agricultural field. An additional five potential burrows consisting of rodent burrows and man-made structures with cavities of suitable size were observed within the BSA, burrowing owl survey area, and adjacent to the burrowing owl survey area during the habitat assessment and breeding season surveys (see Appendix A: Figure 7).

4.3.1.2 Project Impacts

The project has the potential to result in direct and indirect impacts to burrowing owl. Approximately 0.08 acres of suitable habitat within the PIA would be subject to direct and indirect impacts from vegetation clearing, grubbing, grading, or other construction activities. If occupied burrows are present, owls could be directly impacted through removal of burrows or indirectly impacted through noise and disturbance associated with heavy equipment operation. These impacts would be particularly significant if construction occurs during the nesting season of February 1 through August 31 (CDFW 2012), when disturbance may affect nesting success, or at any time of year if active burrows are present. Impacts to burrowing owls and their habitat would be considered potentially significant and would require implementation of avoidance, minimization, and mitigation measures.

4.3.1.3 Avoidance and Minimization Efforts/Compensatory Mitigation

Implementation of measures BIO-1 through BIO-3, described in Section 4.1.1.3 above, would minimize impacts to burrowing owl. The following additional measures are included to further avoid and/or minimize impacts to this species:

> **BIO-5:** Initial grading should take place between September 1 and January 31 to avoid impacts to breeding burrowing owls (CDFW 2012). If construction is to begin during the breeding season, it is recommended that the measures below be implemented prior to February 1 to discourage the nesting of the burrowing owls within the area of impact. As construction continues, any area where owls are sighted should be subject to frequent surveys for burrows before the breeding season begins, so that owls can be relocated before nesting occurs. Pre-construction surveys would be conducted for burrowing owls prior to the commencement of construction activities. The surveys would conform to the survey protocol in the CDFW 2012 Staff Report. No more than 14 days prior to any ground-disturbing activities, a qualified biologist would conduct a take avoidance survey for burrowing owls. If no owls are found during this first survey, a final survey would be conducted 24 hours prior to ground disturbance to confirm that burrowing owls are absent. If burrowing owls are found on-site during the surveys, any potentially impacted burrowing owl individuals must be relocated out of the impact areas using passive or active methodologies approved by the resource agencies. A Burrow Exclusion Plan would be prepared according to the 2012 CDFW guidelines and approved by CDFW. The Burrow Exclusion Plan may include the use of artificial burrows as a means of replacing burrows lost to impacts.

A biologist familiar with burrowing owl biology would monitor construction activities to make sure that burrowing owls that may move into the area during construction are detected and impacts are avoided.

BIO-6: As the project construction schedule and details are finalized, a qualified biologist would prepare a Conceptual Burrowing Owl Mitigation Plan in accordance with the CDFW 2012 Staff Report or the most recent state and/or federal protocols/guidance for approval by the relevant resource agencies. Consultation with CDFW may be necessary during their review of the proposed plan in order to gain their approval. The Conceptual Burrowing Owl Mitigation Plan would include off-site mitigation for the loss of 0.08 acre of suitable burrowing owl habitat at a ratio of 1:1. The quality of preserved suitable occupied burrowing owl habitat must be comparable to or better than the habitat being impacted. The land to be preserved must be occupied by burrowing owl and support fossorial mammals. A conservation easement for the protection of burrowing owl/habitat would be placed over the mitigation land.

A Mitigation Land Management Plan for the long-term maintenance and monitoring of the approved mitigation land would be prepared to identify a long-term funding mechanism (e.g., an endowment) for the maintenance of the mitigation lands for burrowing owl.

Implementation of the mitigation and monitoring measures listed above would reduce impacts to burrowing owl to a level of less than significant.

4.3.2 Discussion of Mountain Plover

Mountain plover is a CDFW species of special concern. Mountain plovers are migratory, wintering in California, southern Arizona, Texas, and Mexico and breeding primarily in Colorado and Montana from April through June (USFWS 2011). Mountain plovers use non-breeding (wintering) habitats that are similar to those they use on breeding grounds: heavily grazed pastures, burned fields, fallow fields, and tilled fields (Andres and Stone 2009). Mountain plovers are known to overwinter in the Imperial Valley, foraging within the large agricultural complex that surrounds El Centro and spans from Mexico to the Salton Sea. This species forages in the fields at various stages of crop rotation. In California's Imperial Valley, mountain plovers preferentially use alfalfa fields that have been harvested and grazed by domestic sheep, as well as Bermuda grass fields that have been burned post-harvest (Andres and Stone 2009). Threats to the mountain plover include loss of habitat due to conversion of grasslands to urban and active agricultural uses in their breeding grounds, prairie dog control, domestic livestock management, human disturbance during the nesting season, grasshopper control measures, use of pesticides, and other land uses throughout this species' range (USFWS 2011).

4.3.2.1 Survey Results

Mountain plover was not observed and is not expected to occur within the PIA due to lack of suitable habitat. However, this species has a moderate potential to occur within the BSA due to the presence of agricultural fields, including an active agricultural field used for row crops consisting of alfalfa, containing suitable nesting and foraging habitat in the northwestern and southwestern corners of the BSA.

4.3.2.2 Project Impacts

No direct impacts are anticipated to occur to mountain plover as a result of the project due to lack of suitable habitat within the PIA. However, indirect impacts could result from project construction noise if this species nests within suitable habitat adjacent to PIA.

4.3.2.3 Avoidance and Minimization Efforts/Compensatory Mitigation

Implementation of measures BIO-1 through BIO-3, described in Section 4.1.1.3 above, would minimize indirect impacts to mountain plover. As no direct impacts to mountain plover or its habitat are expected to occur, no species-specific compensatory mitigation is proposed.

4.3.3 Discussion of Bats

Several bat species listed as CDFW species of special concern have a moderate potential to occur within the BSA, primarily within the crevices on the underside of Brandt Road bridge or within the tall trees in the riparian habitat: pallid bat, western red bat, western yellow bat, and pocketed free-tailed bat.

The pallid bat ranges from southern British Columbia south to the tip of Baja California and central mainland Mexico, and east to Texas. This bat is most commonly associated with grasslands and open shrublands at lower elevations, but will use coniferous woodlands and forests at higher elevations, up to 6,400 feet. It is most common at lower elevations, though pallid bats roost in rock and tree crevices, caves, mines, and buildings in rural settings (Tremor et al. 2017). This species feeds on large, hard-shelled prey items such as centipedes, cicadas, spiders, scorpions, and crickets, which it captures on the ground (Bat Conservation International 2023a). Pallid bats are sensitive to roost site disturbance as roosts are crucial for metabolic economy and juvenile development. Population declines are generally attributed to loss of roost habitat resulting from human intrusion and physical alteration (Zeiner et al. 1990).

The western red bat ranges from southern British Columbia south through California, western Nevada, Arizona, southern Utah, and western Mexico into South America (Harvey et al. 2011). It is almost exclusively a tree-roosting bat that primarily roosts in riparian woodlands and forests near water dominated by sycamores, cottonwoods, velvet ash and elderberry trees (Bat Conservation International 2023b). Western red bats have adapted somewhat to urbanization, using orchard trees such as avocado, orange, fig, and walnut, as well as ornamental species like bougainvillea. This species primarily forages for moths in riparian and adjacent habitats, but has also been found foraging around street lights in suburban neighborhoods and parks. The primary threat to this species is loss of riparian habitat; however, individuals in urban and orchard trees can be at risk from tree trimming and herbicide use (Tremor et al. 2017).

The western yellow bat's distribution extends from Los Angeles County east through western Arizona, southwestern New Mexico, and south to approximately Mexico City. It is found in riparian, desert wash, and palm oasis habitats in the deserts and mountains from near sea level up to over 5,000 feet in elevation. Western yellow bats roost primarily in groves of California fan palm (*Washingtonia filifera*) but will also use non-native palms, cottonwoods, and yuccas. In palms, this species prefers tall trees with a skirt of dead fronts around the trunks. While most common in the mountains and deserts, the western yellow bat appears to have expanded its range into suburban areas, roosting in exotic palms used in landscaping. Threats to this species include drought and resultant drying of palm oases, as well as maintenance and trimming of occupied suburban palm trees (Tremor et al. 2017).

The pocketed free-tailed bat is found in southwestern United States and western Mexico (Bat Conservation International 2023c). This species roosts in crevices in rugged canyons, rock outcrops, and high cliffs, and has been found roosting in rock quarries, in La Mesa and Mission Trails Regional Park (Tremor et al. 2017). Given its wide distribution, the species can be found foraging for large moths in a wide variety of habitats, including riparian areas, oak woodlands, grasslands, sage scrub, reservoirs, and ponds (Western Bat Working Group 2019). Overall detections of pocketed free-tailed bats have increased in recent years, either as a result of population increases or increased ease of ultrasonic detection. Threats to this species include loss of cliff roosting habitat from mining or quarrying, as well as recreational uses such as rock climbing (Tremor et al. 2017).

4.3.3.1 Survey Results

The bat reconnaissance survey conducted within the BSA identified habitat features that may provide suitable roosting and foraging opportunities for special-status bat species. Bat sign (guano) was observed beneath and adjacent to the Brandt Road bridge, suggesting potential use of the structure by bats. Crevices located on the underside of the bridge may provide roosting habitat for crevice-roosting species, including pallid bat and pocketed free-tailed bat. Additionally, riparian trees along the Alamo River corridor may provide suitable roosting habitat for tree-roosting species, including western red bat and western yellow bat. No special-status bat species were observed during the survey. However, due to the availability of suitable roosting and foraging habitat and evidence of bat use within the BSA, pallid bat, western red bat, western yellow bat, and pocketed free-tailed bat all have a moderate potential to occur.

4.3.3.2 Project Impacts

The proposed project has the potential to result in both direct and indirect impacts to sensitive bat species with potential to occur within the BSA. If present, crevice-roosting species including pallid bat and pocketed free-tailed bat could be directly affected during removal of the existing Brandt Road bridge, which contains crevices on the underside that may provide suitable roosting habitat. Similarly, tree-roosting species including western red bat and western yellow bat could be directly impacted if individuals are roosting in riparian trees that may be removed as part of project activities. Indirect impacts could also occur from construction-related noise, lighting, vibrations, and general disturbance within the riparian corridor. Such impacts would be significant and would require species-specific avoidance, minimization, and/or mitigation measures.

4.3.3.3 Avoidance and Minimization Efforts/Compensatory Mitigation

Implementation of measures BIO-1 through 3, described in Section 4.1.1.3, would minimize impacts to potentially occurring bat species. The following additional measures are included to further avoid and/or minimize impacts to bats:

BIO-7. Implementation of the mitigation and monitoring measures listed below would reduce impacts to potentially occurring bat species to a level of less than significant:

- A biologist with expertise and experience with bats shall be retained as a qualified bat biologist. The qualified bat biologist shall have at least 3 years of experience in conducting bat habitat assessments, day roosting surveys, and acoustic monitoring, and have adequate experience identifying local bat species

(visual and acoustic identification), type of habitat, and differences in roosting behavior and types (i.e., day, night, maternity). The biologist shall conduct pre-construction surveys of the existing Brandt Road bridge and riparian trees within 500 feet of the PIA to identify active bat roosts. Surveys shall occur no more than 14 days prior to the initiation of construction activities.

- If active hibernacula or day roosts are detected within PIA, they shall be avoided to the extent feasible. If active maternity roosts are identified within 500 feet of the PIA, project construction shall be limited to October 1 through February 28, outside of the maternity roosting season (March 1 through September 30), to avoid direct impacts to flightless young. If avoidance of the maternity roosting season is not feasible, preconstruction surveys shall be conducted immediately prior to project construction to confirm no maternity roosts are present. Maternity roosts shall not be evicted, excluded, removed, or otherwise disturbed.

- During construction, the removal of riparian trees or branches shall be avoided to the maximum extent practicable within or adjacent to occupied bat habitat, if found. If tree removal or trimming is unavoidable and trees are determined to be occupied by roosting bats, additional avoidance or mitigation measures shall be implemented as recommended by the qualified bat biologist.

- To provide compensatory roosting habitat, bat boxes (or other appropriate artificial roosting structures) shall be incorporated into the design of the new Brandt Road bridge or installed on suitable structures and/or trees within the Alamo River corridor under the guidance of a qualified bat biologist. The number, type, and placement of bat boxes shall be determined by the qualified bat biologist in consultation with the appropriate regulatory agencies.

4.3.4 Discussion of Migratory Birds and Raptors

The MBTA, which is enforced by the USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt such actions, except as permitted by regulation. The take, possession, import, export, transport, sale, purchase, barter, or offering of these activities is prohibited, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11).

Nesting birds and raptors (birds of prey) and active raptor nests are also protected by the CFGC 3503 and 3503.5, which states that it is "unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto" and "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird", respectively, unless authorized by CDFW.

4.3.4.1 Survey Results

A variety of common and special status resident and migratory bird species were observed and have potential to nest within the BSA. Common bird species observed during biological surveys include red-winged blackbird (*Agelaius phoeniceus*), black phoebe (*Sayornis nigricans semiatra*), killdeer (*Charadrius vociferus vociferous*), and Eurasian collared-dove (*Streptopelia decaocto*). No nests were observed within the BSA during surveys.

4.3.4.2 Project Impacts

Direct impacts may occur to nesting and migratory birds if vegetation removal takes place during the combined avian and raptor nesting season (January 15 through September 15).

4.3.4.3 Avoidance and Minimization Efforts/Compensatory Mitigation

Implementation of measures BIO-1 through 3, described in Section 4.1.1.3 above, would minimize impacts to migratory birds and raptors. The following additional measure is included to minimize direct impacts to individuals occurring within the PIA:

> **BIO-8.** All clearing/grubbing of vegetation shall take place between September 16 through January 14, outside the combined avian and raptor nesting season. If vegetation removal needs to occur during the breeding season, pre-construction surveys and monitoring would be required. If vegetation is removed outside of the breeding season, no additional monitoring would be required.
>
> During the bird breeding season, a qualified biologist will perform a focused pre-construction surveys in and adjacent to suitable habitat to determine the presence of active nests within the PIA. Survey will be conducted a maximum of 7 days prior to performing construction within 300 feet of suitable habitat during the breeding season. If suitable habitat is not removed during the initial clearing/grading construction effort during the breeding season, additional surveys will be conducted immediately prior to habitat removal during project construction within 300 feet of suitable habitat. If pre-construction surveys are negative for active nests within the PIA, no additional measures would be required.

5. Conclusions and Regulatory Determination

5.1 Federal Endangered Species Act Consultation Summary

Caltrans District 11 obtained the list of threatened and endangered species that may occur in and/or be affected by the Brandt Road Bridge project from USFWS on July 31, 2025. The species identified in this list are presented in Table 7 below. A preliminary effect determination for each species is presented in the table based on the impact analyses provided in this report.

No federally endangered, threatened, or candidate species or Critical Habitat were identified within the BSA. Additionally, no federally listed species were observed during surveys or are expected to occur within the BSA. Thus, the project will have no effect on species protected by the ESA and a formal Section 7 consultation is not required.

Table 7: Threatened and Endangered Species Identified by USFWS with Potential to Occur and/or Be Affected by the Project

Species	Federal Status	Critical Habitat within the Project Area	Preliminary Effect Determination
Monarch butterfly (*Danaus plexippus*)	Proposed Threatened	No	No effect
Desert pupfish (*Cyprinodon macularius*)	Endangered	No	No effect
Yuma Ridgway's rail (*Rallus obsoletus yumanensis*)	Endangered	No	No effect

5.2 Essential Fish Habitat Consultation Summary

No essential fish habitat occurs within the BSA; thus, essential fish habitat consultation with the National Oceanic and Atmospheric Administration is not required.

5.3 Migratory Bird Treaty Act Summary

The BSA supports and has the potential to support a wide variety of resident and migratory avian species. This includes common species such as red-winged blackbird, black phoebe, killdeer, and Eurasian collared-dove; as well as special status species such as burrowing owl and mountain plover. Therefore, removal of vegetation during the combined breeding season (January 15 through September 15) may result in impacts to nesting birds protected by the MBTA unless avoided or minimized.

5.4 Invasive Species Summary

Invasive species observed within the BSA are presented in Table 3 in Section 3.1.3.4. Implementation of proposed avoidance and minimization measure BIO-1 through BIO-3 discussed in Section 4.1.1.3, which include general best management practices and biological monitoring during construction, is anticipated to prevent the introduction or spread of invasive species as a result of construction activities.

Implementation of measures BIO-1 through 3, described in Section 4.1.1.3 and measure BIO-7, described in Section 4.3.4.3, would minimize impacts to migratory birds and raptors to a level of less than significant.

5.5 Wetlands and Other Waters Coordination Summary

An aquatic resources delineation for the project was conducted in 2024 (see Appendix F). Potential Non-wetland WOTUS/WOTS and CDFW streambed and riparian occur within the PIA. Total potential jurisdictional waters that occur within the PIA are presented in Table 6 (see Section 4.1.5.2) and discussed in more detail in Section 4.1.5.

Impacts to jurisdictional waters may require permit authorizations from the USACE through the Section 404 Permit Program, from the CDFW through a 1602 Streambed Alteration Agreement, and from the RWQCB through a Section 401 Water Quality Certification. Prior to the issuance of any grading or development permits, consultation with the Resource Agencies is required to determine the extent of jurisdiction over the potential Non-wetland WOTUS/WOTS and CDFW streambed and riparian, possible permit requirements, and potential mitigation options, if necessary.

5.6 California Environmental Quality Act Summary

The project has the potential to impact biological resources. Implementation of the avoidance, minimization, and mitigation measures provided in Chapter 4 is anticipated to reduce impacts to a level of less than significant.

5.7 California Endangered Species Act Consultation Summary

One state candidate for listing as endangered, burrowing owl, occurs within the BSA. In addition, the following five state-listed species have potential to occur within the BSA: mountain plover, pallid bat, western red bat, western yellow bat, and pocketed free-tailed bat. However, none of these species were observed within the PIA. With implementation of the avoidance, minimization, and mitigation measures listed in Sections 4.1 and 4.3, no take of state-listed species is anticipated. The proposed avoidance and minimization measures include general best management practices, pre-construction surveys, biological monitoring during construction, and seasonal restrictions. The proposed on-site and off-site habitat-based mitigation is discussed in Section 4.1.1.3.

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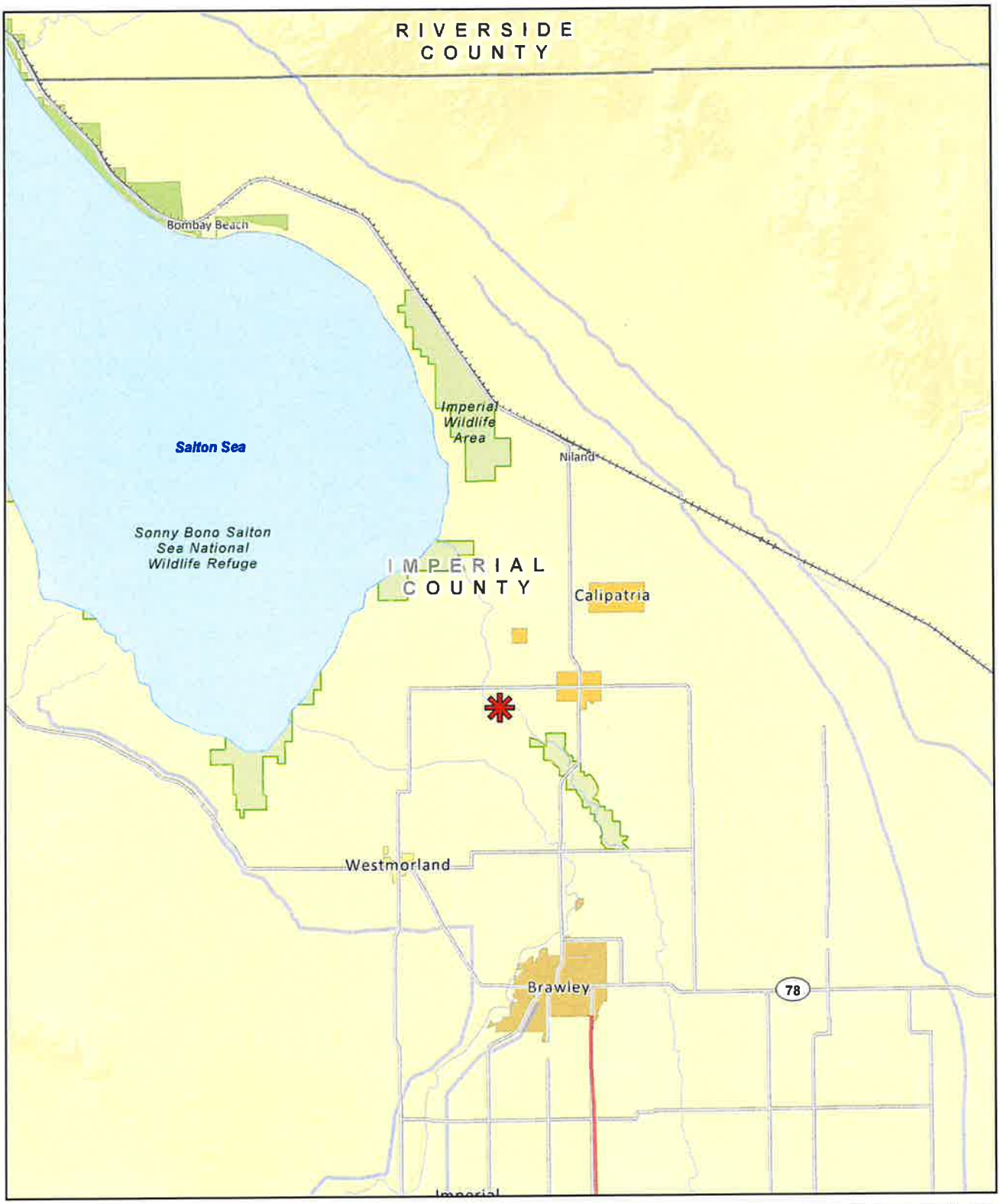
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Appendix A: Project Maps



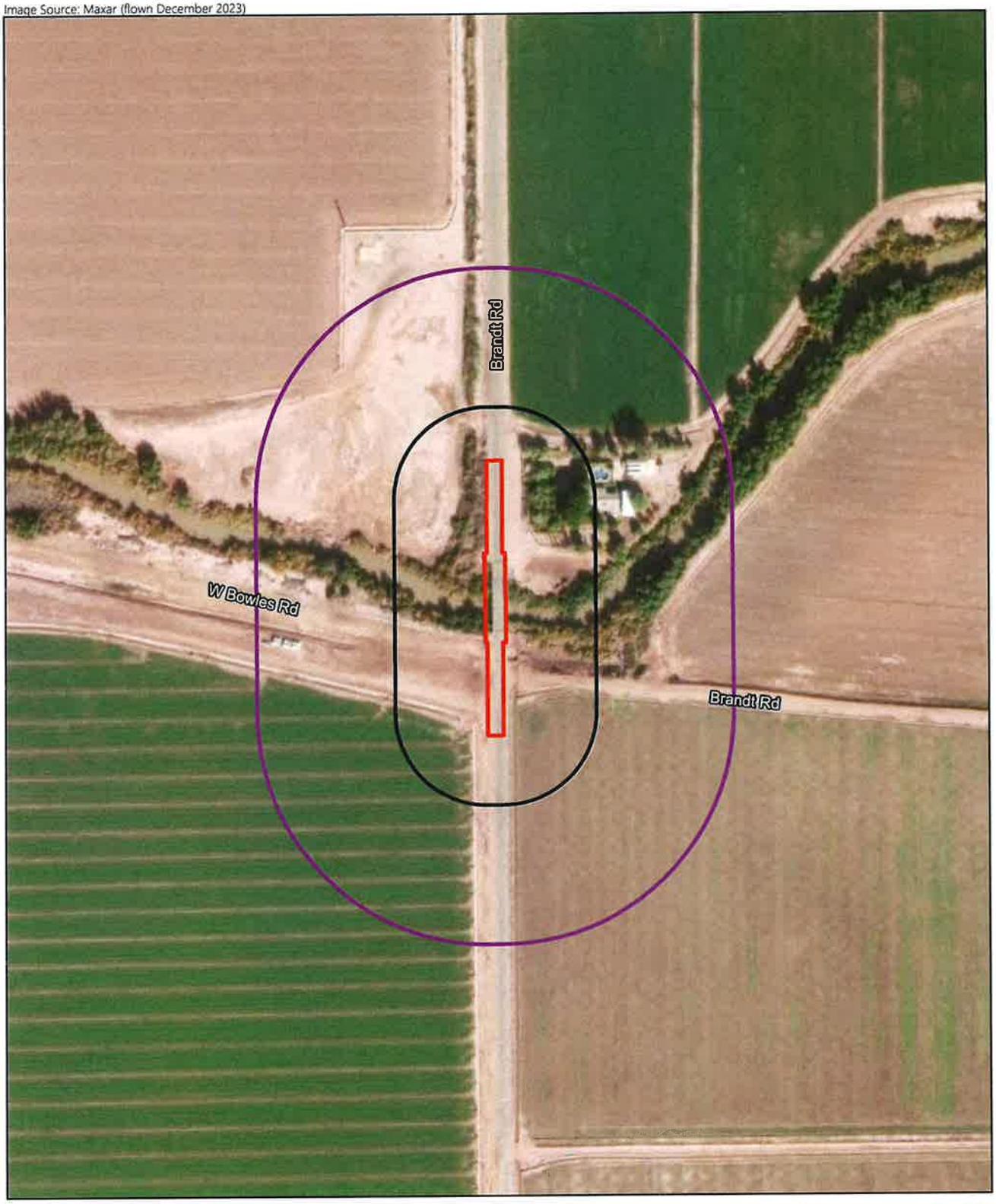
Project Location

RECON

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FIGURE 1
Regional Location

Image Source: Maxar (flown December 2023)

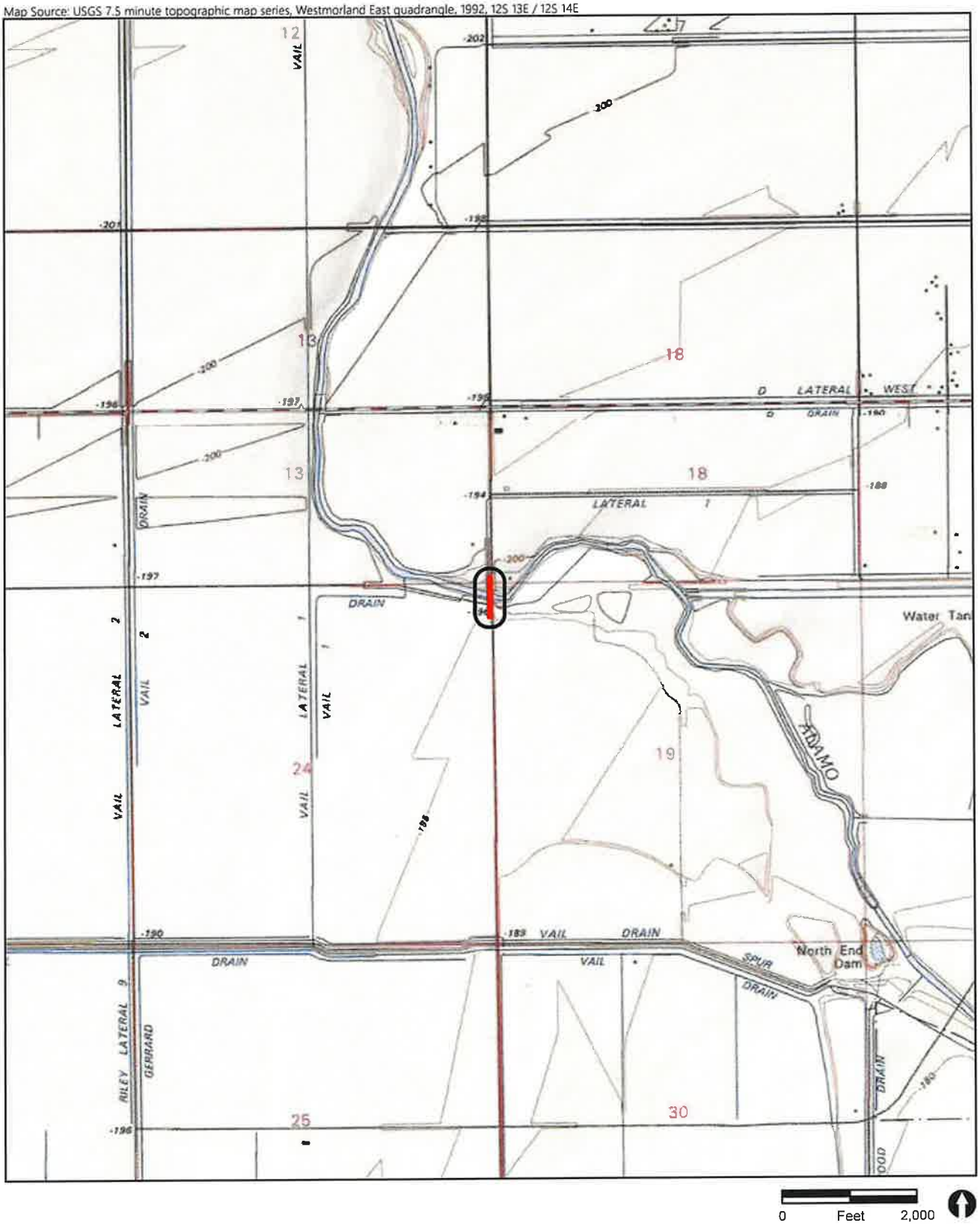


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FIGURE 2
Project Biological Study Area

Map Source: USGS 7.5 minute topographic map series, Westmorland East quadrangle, 1992, 12S 13E / 12S 14E



Project Impact Area

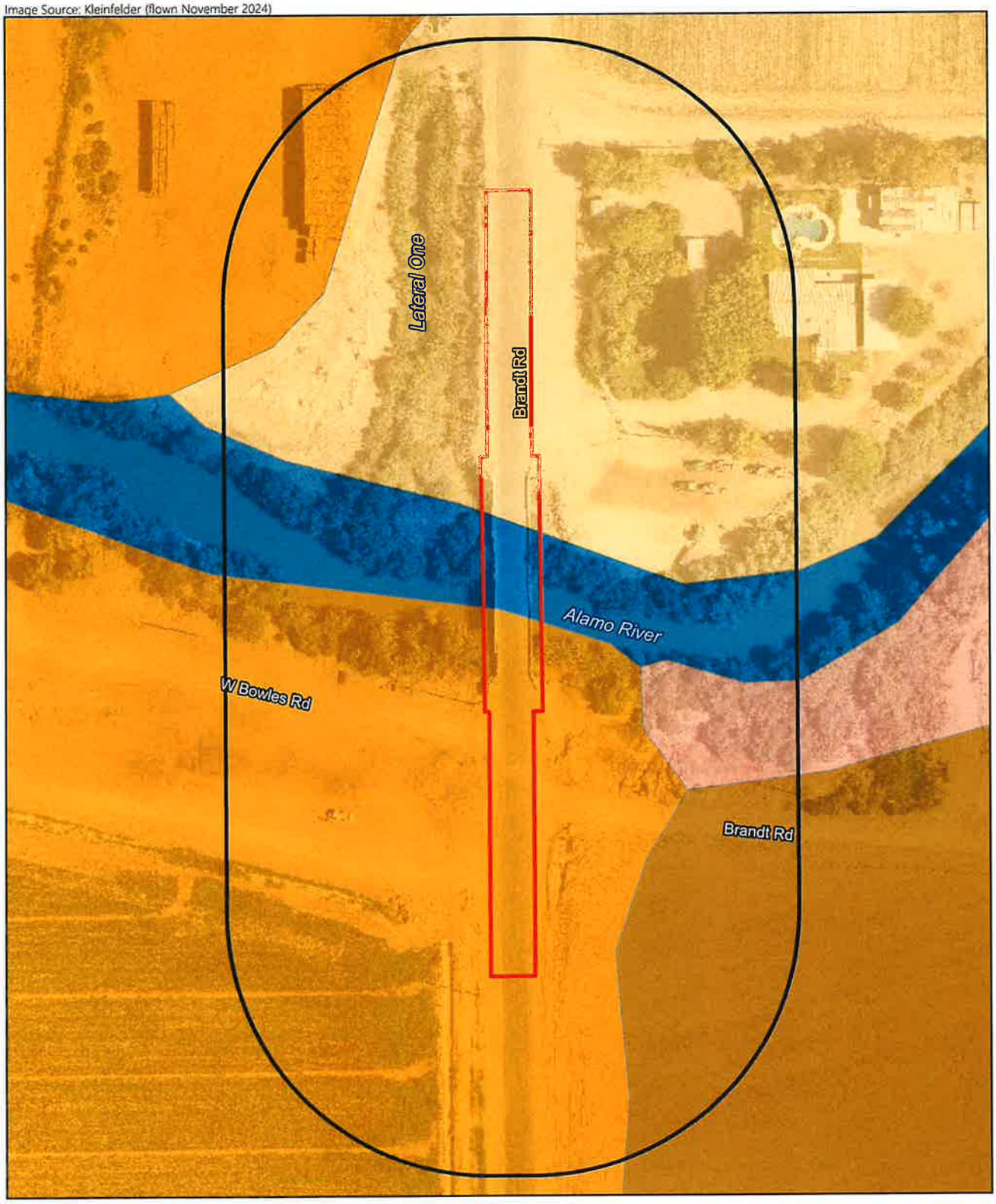
Biological Study Area

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FIGURE 3
Project Location on USGS Map

Image Source: Kleinfelder (flown November 2024)



Project Impact Area
Biological Study Area

Soil Type
- Holtville Silty Clay, Wet
- Indio Loam, Wet
- Vint And Indio Very Fine Sandy Loams, Wet
- Vint Loamy Very Fine Sand, Wet
- Water

0 Feet 100

RECON

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FIGURE 4
Soil within the Biological Study Area

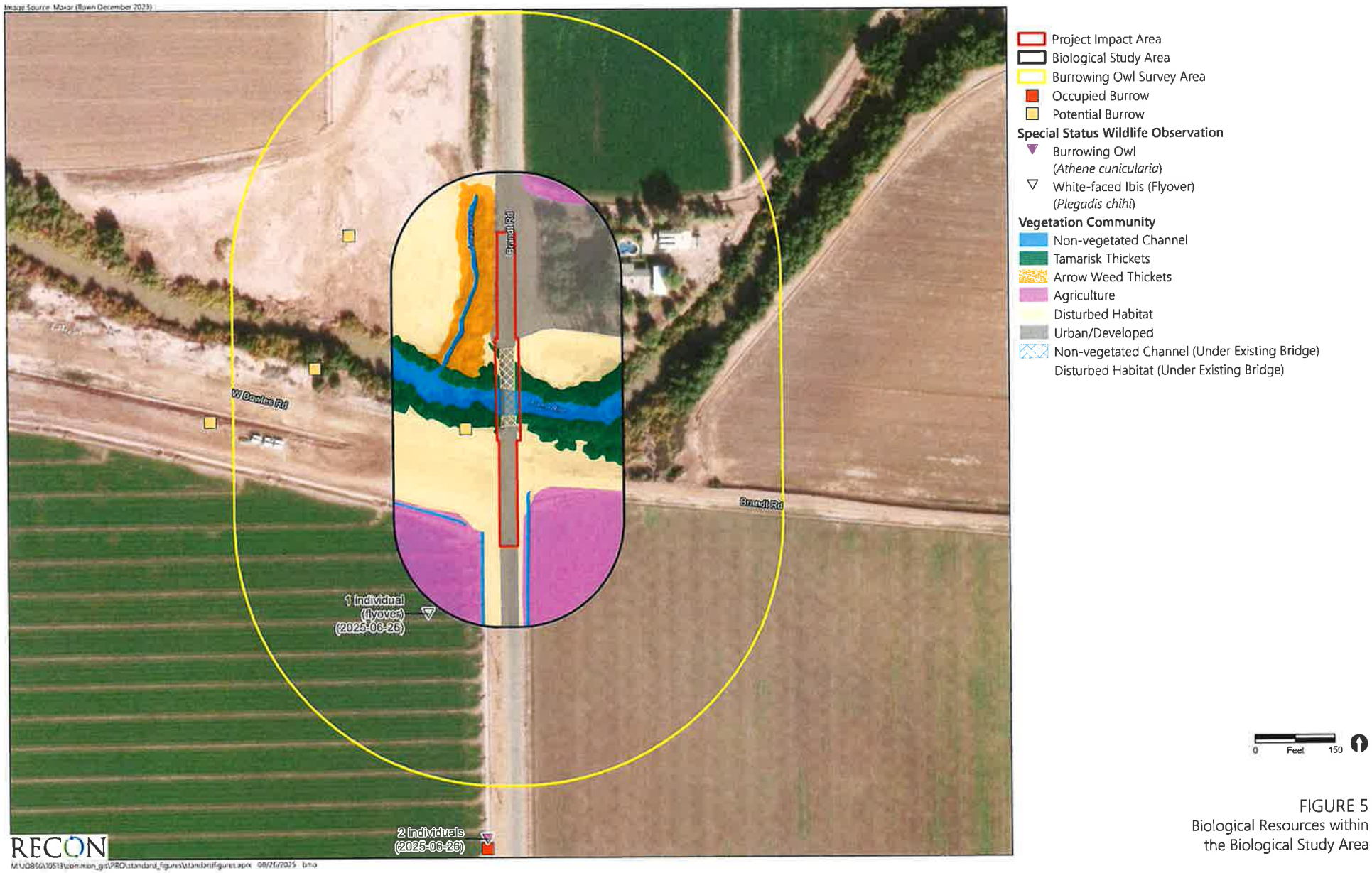
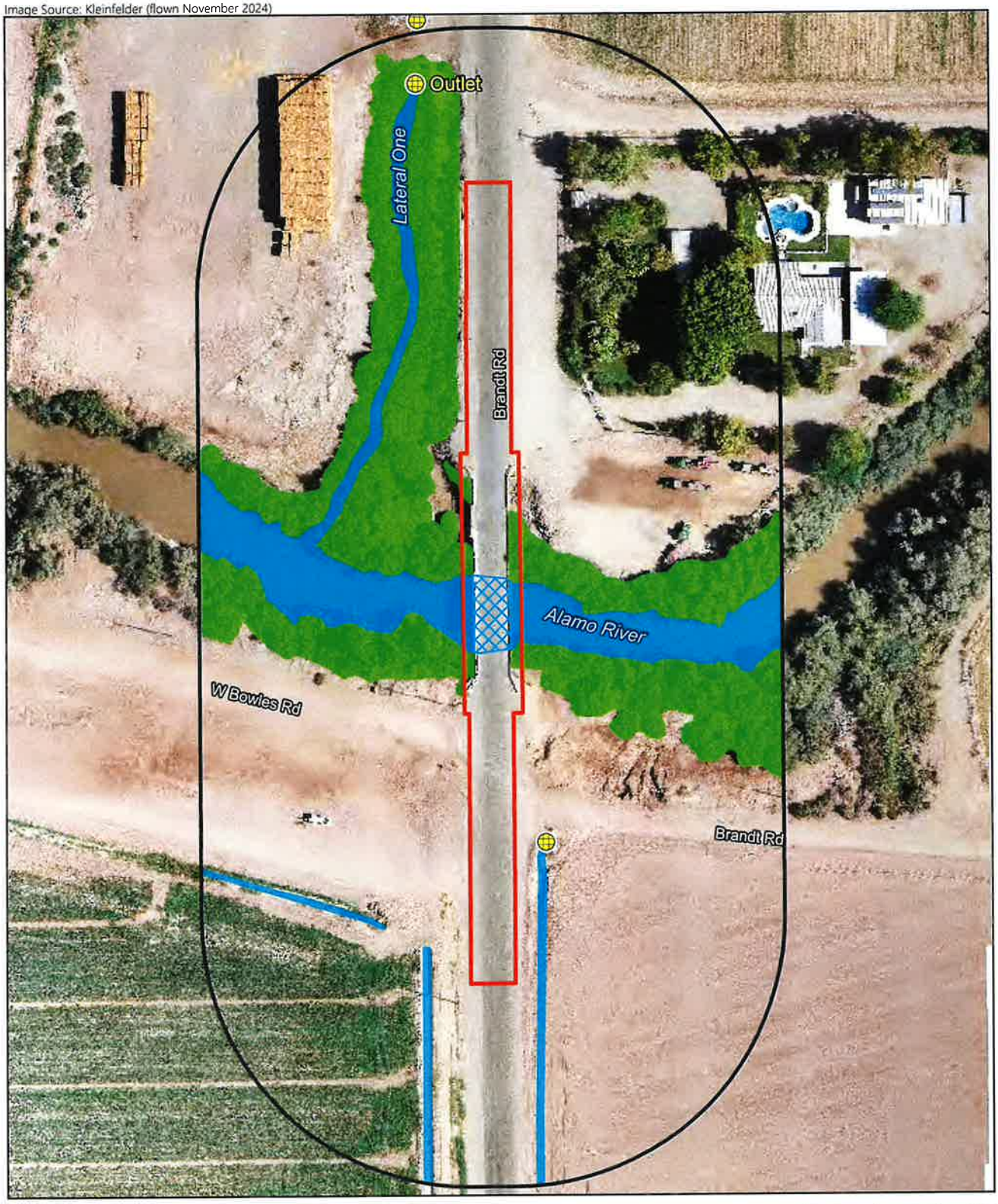


FIGURE 5
Biological Resources within
the Biological Study Area

Image Source: Kleinfelder (flown November 2024)



Project Impact Area
Biological Study Area
Culvert
Potential Jurisdictional Non-wetland Waters
Potential Jurisdictional Riparian
Potential Jurisdictional Non-wetland Waters (Under Existing Bridge)

0 Feet 100

RECON

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FIGURE 6
Potential Jurisdictional Resources within the Biological Study Area

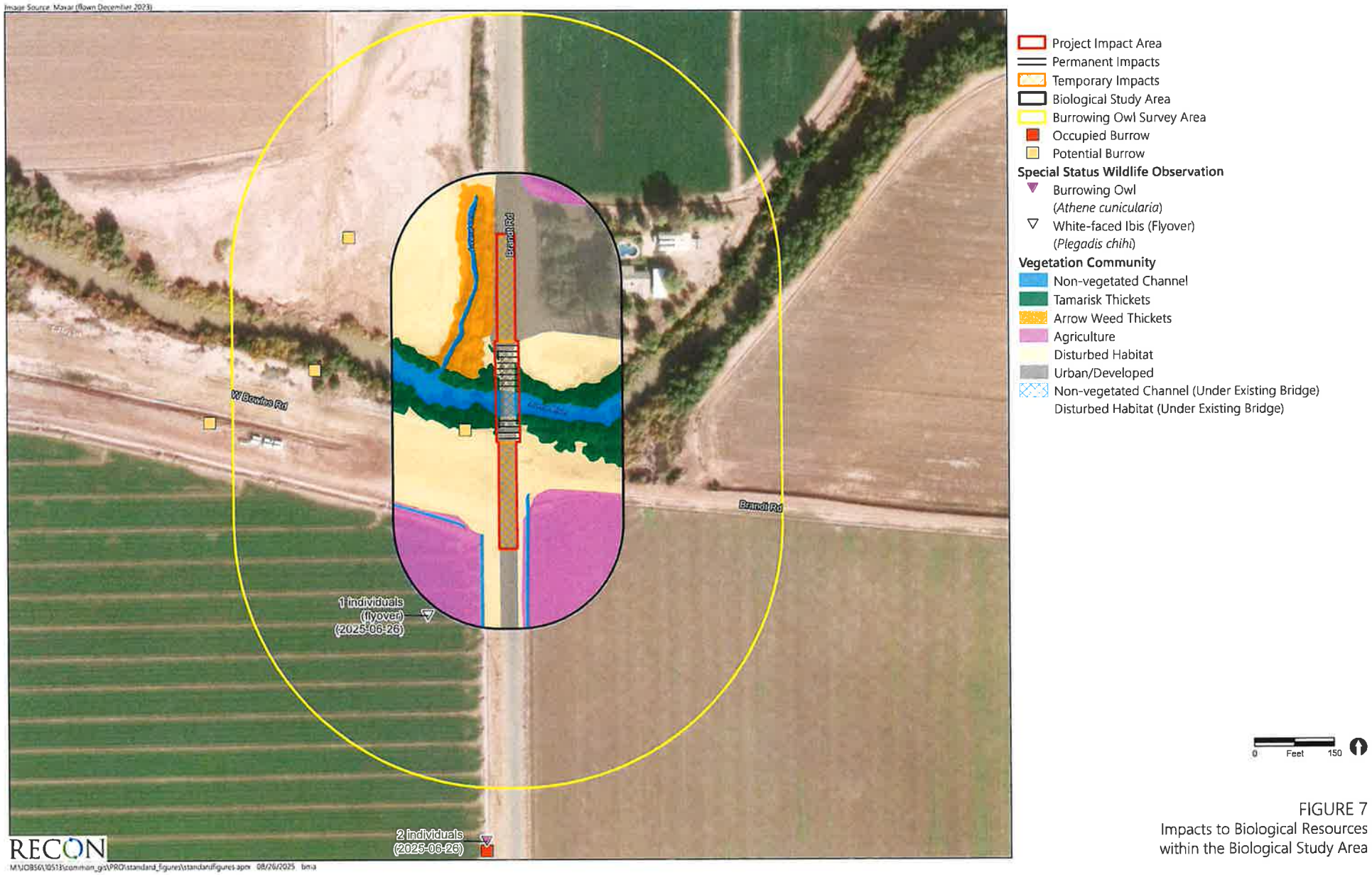
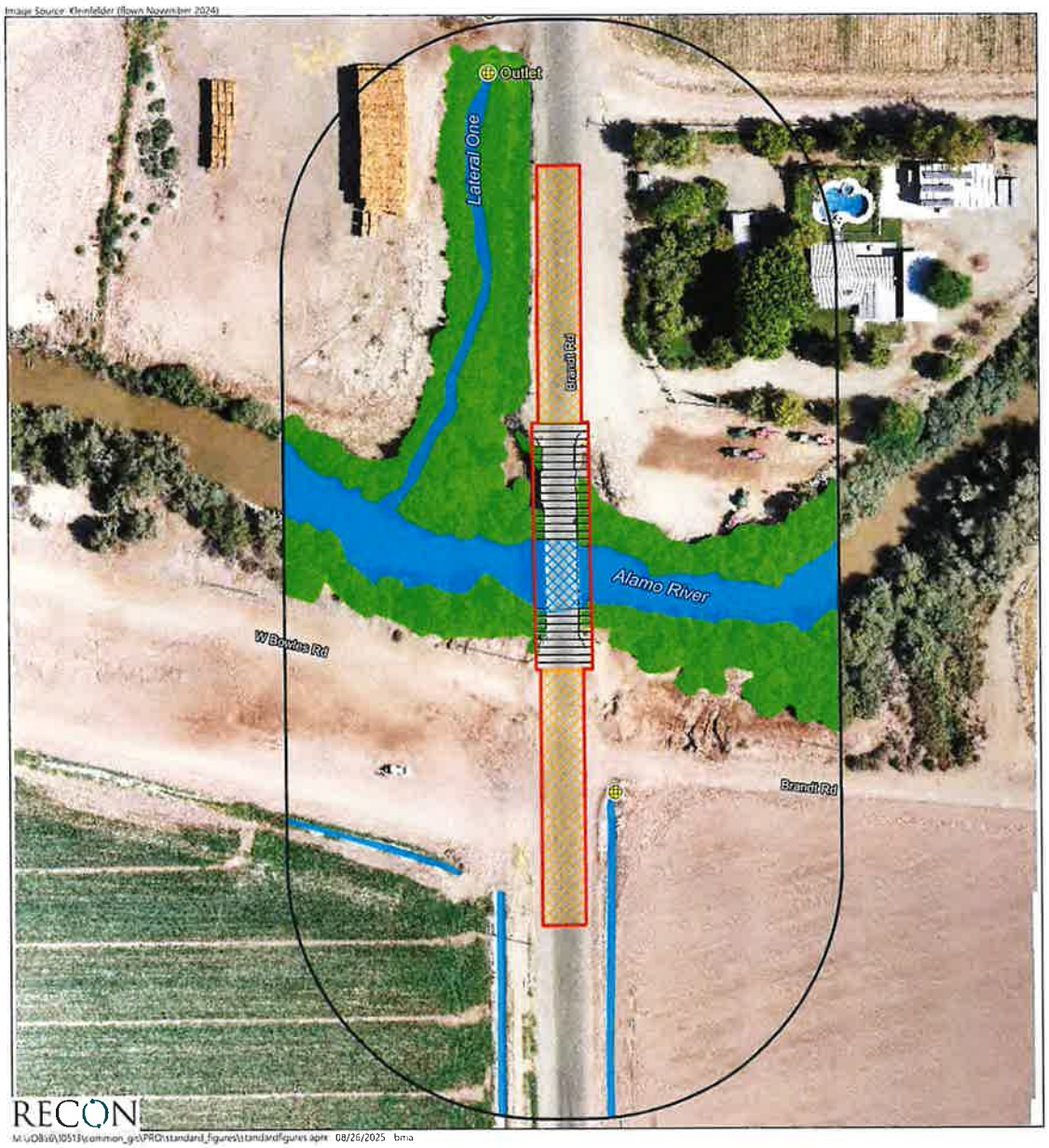


FIGURE 7
Impacts to Biological Resources
within the Biological Study Area



Project Impact Area
Permanent Impacts
Temporary Impacts
Biological Study Area
Culvert
Potential Jurisdictional Non-wetland Waters
Potential Jurisdictional Riparian
Potential Jurisdictional Non-wetland Waters (Under Existing Bridge)

0 Feet 100

FIGURE 8
Impacts to Potential Jurisdictional Resources
within the Biological Study Area

Appendix B: U.S. Fish and Wildlife Service, California Natural Diversity Database, and California Native Plant Society Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
Phone: (760) 431-9440 Fax: (760) 431-5901

In Reply Refer To:
Project Code: 2025-0031462
Project Name: 10513_BrandtBridge

07/31/2025 21:10:12 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a biological assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a biological assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found at the Fish and Wildlife Service's Endangered Species Consultation website at:

https://www.fws.gov/service/esa-section-7-consultation

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

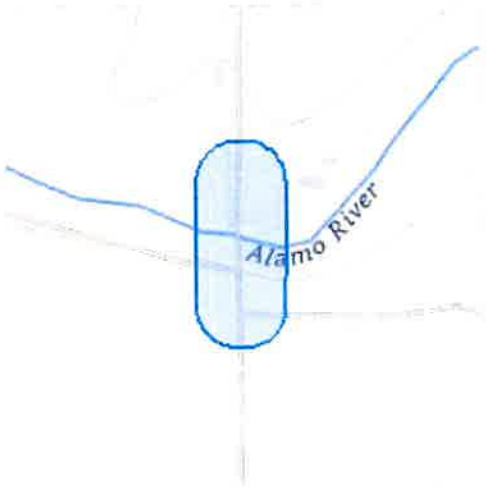
This species list is provided by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

PROJECT SUMMARY

Project Code: 2025-0031462
Project Name: 10513_BrandtBridge
Project Type: Bridge - Replacement
Project Description: Brandt Bridge, Imperial County
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@33.1178778,-115.56263267495838,14z



Counties: Imperial County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Yuma Ridgway's Rail *Rallus obsoletus yumanensis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3505

FISHES

NAME	STATUS
Desert Pupfish *Cyprinodon macularius*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7003

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Proposed Threatened

There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/9743

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Benjamin Arp
Address:	3111 Camino del Rio North
Address Line 2:	Suite 600
City:	San Diego
State:	CA
Zip:	92108
Email	benarp@reconenvironmental.com
Phone:	6193089333

California Natural Diversity Database – Species Occurrence Records Within Five Miles of the Biological Study Area

Common Name	Scientific Name
Burrowing owl	*Athene cunicularia*
Mountain plover	*Charadrius montanus*
Desert pupfish	*Cyprinodon macularius*
California black rail	*Laterallus jamaicensis coturniculus*
Gila woodpecker	*Melanerpes uropygialis*
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*
Yuma hispid cotton rat	*Sigmodon hispidus eremicus*
American badger	*Taxidea taxus*
Crissal thrasher	*Toxostoma crissale*
Razorback sucker	*Xyrauchen texanus*

California Native Plant Society Inventory of Rare and Endangered Plants of California – Westmorland & Niland Quadrangles

Common Name	Scientific Name
Gravel milk-vetch	*Astragalus sabulonum*
Ribbed cryptantha	*Johnstonella costata*
Mud nama	*Nama stenocarpa*

Appendix C: Photographs



PHOTOGRAPH 1
View of Alamo River and Surrounding Tamarisk Thickets from Brandt Road Bridge in Center of BSA, Facing West; Photo Taken November 19, 2024



PHOTOGRAPH 2
View of Arrow Weed Thickets on Either Side of the Lateral One Canal in Northwestern Portion of BSA, Facing Northwest; Photo Taken November 19, 2024



PHOTOGRAPH 3

View of Earthen-lined Irrigation Ditch Supporting Sparse Vegetation (Foreground) and Agricultural Field (Background) in Southeast Portion of BSA, Facing Southeast; Photo Taken November 19, 2025



PHOTOGRAPH 4

View of Concrete-lined Irrigation Ditch Devoid of Vegetation (Foreground) and Agricultural Field (Background) in Southwest Portion of BSA, Facing South; Photo Taken November 19, 2024



PHOTOGRAPH 5
View of Disturbed Habitat in Southwestern Portion of BSA, Facing Southwest;
Photo Taken November 19, 2025



PHOTOGRAPH 6
View of Disturbed Habitat under Brandt Road Bridge in Center of BSA,
Facing East/Southeast; Photo Taken April 28, 2025



PHOTOGRAPH 7
View of Brandt Road Bridge in Center of BSA, Facing South/Southeast;
Photo Taken November 19, 2024

Appendix D: Plant Species Observed within the Biological Study Area

Appendix D Plant Species Observed					
Major Plant Group	Family	Scientific Name	Common Name	Occupied Habitat	Origin
Angiosperms: Monocots	Poaceae (Gramineae) / Grass Family	*Arundo donax*	giant reed	TT, AWT	I
		Bromus rubens [=Bromus madritensis ssp. *rubens]*	red brome	DIST	I
		Cynodon dactylon	Bermuda grass	DIST, NVC	I
		Distichlis spicata	salt grass	TT	N
		Phragmites australis	common reed	TT	N
		Schismus barbatus	Mediterranean schismus	DIST	I
Angiosperms: Eudicots	Amaranthaceae / Amaranth Family	*Amaranthus albus*	tumbleweed	DIST	I
	Asteraceae / Sunflower Family	*Ambrosia salsola [=Hymenoclea salsola]*	burrobrush	DIST	N
		Chloracantha spinosa var. *spinosa*	Mexican devil-weed	DIST	N
		Pluchea sericea	arrow weed	TT, AWT	N
	Brassicaceae (Cruciferae) / Mustard Family	*Sisymbrium irio*	London rocket	DIST	I
	Chenopodiaceae / Goosefoot Family	*Allenrolfea occidentalis*	iodine bush	TT	N
		Atriplex lentiformis	big saltbush	TT, DIST	N
		Atriplex polycarpa	allscale saltbush	TT	N
		Chenopodium berlandieri	pitseed goosefoot	DIST, NVC	I
		Salsola tragus	Russian thistle, tumbleweed	DIST	I
	Fabaceae (Leguminosae) / Legume Family	*Medicago sativa*	alfalfa	AG	I
	Heliotropiaceae / Heliotrope Family	*Heliotropium curassavicum* var. *oculatum*	seaside heliotrope, alkali heliotrope	DIST, NVC	N
	Portulacaceae / Purslane Family	*Portulaca oleracea*	purslane	DIST	I
	Tamaricaceae / Tamarisk Family	*Tamarix aphylla*	athel	TT, AWT	I
		Tamarix ramosissima	saltcedar	TT, AWT	I

NOTE: Scientific and common names were primarily derived from Jepson eFlora (Jepson Flora Project 2025). In instances where common names were not provided in this resource, common names were obtained from Rebman and Simpson (2014). Additional common names were obtained from the USDA maintained database (USDA 2025) or the *Sunset Western Garden Book* (Brenzel 2001) for ornamental/horticultural plants.

Appendix D Plant Species Observed
HABITAT AG = Agriculture AWT = Arrow Weed Thickets DIST = Disturbed Habitat NVC = Non-vegetated channel TT = Tamarisk Thickets U/D = Urban/Developed **ORIGIN** N =Native to locality I = Introduced species from outside locality

Appendix E: Wildlife Species Observed within the Biological Study Area

Appendix E Wildlife Species Observed						
Major Wildlife Group	Family	Scientific Name	Common Name	Origin	Occupied Habitat	Evidence of Occurrence
Reptiles	Phrynosomatidae / Spiny Lizards	*Sceloporus magister*	desert spiny lizard	N	DIST	O
Birds	Odontophoridae / New World Quail	*Callipepla gambelii*	Gambel's quail	N	DIST	O
	Ardeidae / Herons & Bitterns	*Ardea alba*	great egret	N	NVC	O
		Nycticorax nycticorax	black-crowned night-heron	N	TT	O
	Falconidae / Falcons	*Falco sparverius*	American kestrel	N	AG	V
	Rallidae / Rails, Gallinules, & Coots	*Fulica americana*	American coot	N	NVC	O
	Charadriidae / Lapwings & Plovers	*Charadrius vociferus*	killdeer	N	AG	
	Columbidae / Pigeons & Doves	*Columba livia*	rock dove	I	DIST	O
		Streptopelia decaocto	Eurasian collared-dove	I	DIST, AG	O
		Zenaida asiatica	white-winged dove	N	DIST	O
		Zenaida macroura	mourning dove	N	DIST, AG	O, V
	Caprimulgidae / Goatsuckers	*Chordeiles acutipennis*	lesser nighthawk	N	DIST	O
	Tyrannidae / Tyrant Flycatchers	*Sayornis nigricans*	black phoebe	N	AG	O
		Sayornis saya	Say's phoebe	N	AG	O
		Tyrannus verticalis	western kingbird	N	AG	O
	Corvidae / Crows, Jays, & Magpies	*Corvus brachyrhynchos*	American crow	N	DIST	O
	Hirundinidae / Swallows	*Petrochelidon pyrrhonota*	cliff swallow	N	DIST	O
	Remizidae / Verdin	*Auriparus flaviceps*	verdin	N	TT	O, V
	Polioptilidae / Gnatcatchers	*Polioptila melanura*	black-tailed gnatcatcher	N	TT	V
	Parulidae / Wood Warblers	*Geothlypis trichas*	common yellowthroat	N	TT	V
	Passerellidae / New World Passerines	*Melospiza melodia*	song sparrow	N	DIST, AG	O, V
		Melozone aberti	Abert's towhee	N	DSIT, AG	O
		Zonotrichia leucophrys	white-crowned sparrow	N	TT, DIST	V
	Icteridae / Blackbirds & New World Orioles	*Agelaius phoeniceus*	red-winged blackbird	N	TT, DIST, AG	O, V
		Molothrus ater	brown-headed cowbird	N	AG	V
		Quiscalus mexicanus	great-tailed grackle	N	DIST, AG	O
		Sturnella neglecta	western meadowlark	N	AG	O, V
	Fringillidae / Finches	*Haemorhous* [=*Carpodacus*] *mexicanus*	house finch	N	AWT	V
	Passeridae / Old World Sparrows	*Passer domesticus*	house sparrow	I	DIST	O, V
NOTE: Zoological nomenclature for reptiles and amphibians with Crother et al. (2017); for birds with Chesser et al. 2025.						

Appendix E Wildlife Species Observed
ORIGIN N =Native to locality. I = Introduced species from outside locality. **HABITAT** AG = Agriculture AWT = Arrow Weed Thickets DIST = Disturbed Habitat NVC = Non-vegetated channel TT = Tamarisk Thickets U/D = Urban/Developed **EVIDENCE OF OCCURRENCE** O = Observed V = Vocalization

Appendix F: Aquatic Resource Delineation Report for the Brandt Road Bridge Replacement Project

RECON

Aquatic Resource Delineation Report for the Brandt Road Bridge Replacement Project Imperial County, California

Prepared for
Imperial County
Department of Public Works
155 South 11th Street
El Centro, CA 92243
Contact: Mr. Robert Urena III, PE

Prepared by
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108
P 619.308.9333

RECON Number 10513
February 4, 2025



Camille Defrenne, Biologist

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Acronyms and Abbreviations

°F	Fahrenheit
Arid West Supplement	*Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*
CDFW	California Department of Fish and Wildlife
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
NWW	Non-Wetland Water
OHWM	Ordinary High Water Mark
project	Brandt Road Bridge Replacement Project
RECON	RECON Environmental, Inc.
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Site Description and Landscape Setting

The Brandt Road Bridge Replacement Project (project) is located within the northern portion of the Imperial Valley, southwest of the city of Calipatria, in Imperial County, California (Figure 1; all figures provided with this report are compiled as Attachment 1). The project site is located within the U.S. Geological Survey (USGS) 7.5-minute Westmorland East quadrangle, Township 12 South, Range 13 East/14 East (USGS 1992; Figure 2). The project would replace an existing wood bridge built in 1950 that currently spans the Alamo River. Brandt Road is a two-lane paved road that extends north and south of the existing bridge. The southern terminus of the existing bridge is located immediately north of West Bowles Road, an east/west dirt road that intersects with the paved Brandt Road extending in a westerly direction. Similarly, the southern terminus of the existing bridge is located immediately north of a dirt road also named Brandt Road, an east/west dirt road that intersects with the paved Brandt Road extending in an easterly direction. Agricultural lands are located further to the south. An existing residential use is located immediately northeast of the northern terminus of the bridge, followed by agricultural lands further to the north (Figure 3). Access to the project is provided by the north/south paved Brandt Road from the north or south. Coordinates in decimal degrees for the center of the project site are 33.117894, -115.562809. For the purposes of this report, the Review Area is equivalent to the project footprint (i.e., bridge replacement and roadway resurfacing areas) and a 150-foot survey buffer surrounding the project footprint, totaling 5.37 acres (see Figure 3).

The applicant would like to accompany the U.S. Army Corps of Engineers (USACE) on all site visits and requests that the USACE must contact the applicant prior to visiting the project site. The contact information for the applicant is:

Property Owner:	Imperial County, Public Works Department
Applicant:	Imperial County, Public Works Department
Primary Contact:	Robert Urena III, PE
Telephone:	(442) 265-1818
E-mail:	roberturena@co.imperial.ca.us

2.0 Site Alterations, Current and Past Land Use

The Review Area primarily consists of private land, including active and fallow agricultural lands, with associated irrigation ditches and dirt roads in all directions (see Figure 3). The Alamo River, in the central portion of the Review Area, flows east to west. A lateral canal (Lateral One) that is tributary to the Alamo River, flows north to south. The Review Area also encompasses developed areas that consist of two-lane paved north/south Brandt Road, Brandt Road bridge, and a private residence immediately northeast of the project site.

The Review Area has consisted of Brandt Road surrounded by agricultural lands since the 1950s (Google Earth 2024). A large portion of the vegetation that used to occur directly northwest of the project site was removed between 2014 and 2016. The Lateral One canal was likely dug prior to the 1950s.

2.1 Soils

Information on the soil types sampled in the Review Area is summarized from the Soil Survey for Imperial County, California, Imperial Valley Area (U.S. Department of Agriculture [USDA] 1981) and the Hydric Soils of California list obtained from the USDA Natural Resource Conservation Service (NRCS; 2024). Soils from three soil series–Vint, Indio, and Holtville–are mapped within the Review Area (Figure 4; USDA 1981).

Vint Soil Series. This soil series consists of very deep, somewhat excessively drained soils formed in stratified stream alluvium. Vint and Indio very fine sandy loams, wet (0 to 2 percent slope) occurs as a large patch, in the northern half of the Review Area; this soil type is not listed as hydric on the NRCS hydric soils list (2024). Vint loamy very fine sand, wet (0 to 2 percent slope) occurs in the southeastern portion of the Review Area; this soil type is not listed as hydric on the NRCS hydric soils list (2024).

Indio Soil Series. This soil series consists of very deep, well- or moderately-well-drained soils formed in alluvium derived from mixed rock sources. Indio soils generally develop on alluvial fans, lacustrine basins, and flood plains. Indio loam, wet (0 to 2 percent slope) occupies the southern half of the Review Area and occurs as a thin strip in the northwestern portion of the Review Area; this soil type is not listed as hydric on the NRCS hydric soils list (2024).

Holtville Soil Series. This soil series consists of very deep, well-drained soils formed in mixed and stratified alluvium. Holtville soils generally develop on flood plains and basins. Holtville silty clay, wet (0 to 2 percent slope) occurs as a small patch in the eastern portion of the Review Area, south of the Alamo River; this soil type is not listed as hydric on the NRCS hydric soils list (2024).

2.2 Hydrology

Hydrologic inputs to the Review Area occur from natural seasonal rainfall events and agricultural runoff from upslope agricultural lands to the north and south of the Review Area, which is relatively flat throughout (elevation ranges from 220 to 195 feet below mean sea level).

Based on on-site observations and review of the USGS National Hydrography Dataset (NHD, 3D Hydrography Program; USGS 2024) and the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI; UFSWS 2024; see Figure 4), the Review Area consists of a segment of the Alamo River, a segment of the Lateral One canal, and three irrigation ditches. The Alamo River flows in a northwesterly direction from the Review Area for approximately seven miles before emptying into the Salton Sea, which is a traditional navigable waterway per Section 404 of the Clean Water Act and 33 Code of Federal Regulations Section 328.3 (a)(1). Based on the NWI, NHD, and field observations, the Alamo River carries perennial flows (USFWS 2024; USGS 2024).

The Lateral One canal is managed by the Imperial Irrigation District and supplies water to irrigation ditches that are used by private farming operations. This approximately 1.3-mile-long canal begins at the C Lateral West canal and extends westward before pivoting south and emptying into the Alamo River. Within the Review Area, the Lateral One canal flows parallel to the two-lane paved north/south Brandt Road and is not lined with any impervious material (earthen channel). A cement

culvert occurs outside of the Review Area and connects two segments of the canal that are separated by a dirt road (Figure 5). Based on the NWI, the Lateral One canal carries intermittent flows (USFWS 2024).

The three irrigation ditches are associated with the agricultural fields on either side of Brandt Road, within the southern portion of the Review Area (see Figure 5). Two irrigation ditches occur on the western side of Brandt Road; one is concrete-lined and unvegetated, and the other one is not lined with any impervious material and is minimally vegetated. Similarly, the ditch that occurs on the eastern side of Brandt Road is not lined with any impervious material; however, a cement culvert occurs at its northern end (see Figure 5).

2.3 Vegetation

Six vegetation communities/land cover types were mapped within the Review Area: non-vegetated channel, tamarisk thickets (*Tamarix* spp. shrubland semi-natural alliance), arrow weed thickets (*Pluchea sericea* shrubland alliance), agriculture, disturbed habitat, and urban/developed (see Figure 5). In this report, vegetation community/land cover type classification follows Sawyer et al. (2009) with cross reference to Holland (1986) as modified by Oberbauer et al. (2008). The acreages of each vegetation community/land cover type within the Review Area are presented in Table 1 (all tables in this report are compiled as Attachment 2).

3.0 Precipitation Data and Analysis

Climate data, including precipitation totals, for the nearest recording station to the project site were gathered from the NRCS National Water and Climate Center databases. The climate data obtained are discussed below.

3.1 Climate and Growing Season

The Review Area is located within the Sonoran Desert region of southern California, in an area generally hot and dry throughout most of the year, with slightly cooler and wetter winters. Most of the precipitation typically falls between December and March as infrequent, low-intensity rainfall. Very localized high-intensity monsoonal rainfall can occur during the summer months. The Imperial, California, National Weather Service station lists the maximum averaged daily maximum temperature over the past 30 years as 108.6 degrees Fahrenheit (°F) in July and the minimum averaged daily minimum temperature as 41.9°F in December (NRCS 2025). The NRCS does not calculate a growing season length at 24°F, 28°F, and 32°F for this station since the threshold temperatures were not recorded throughout the 30-year period (i.e., year-round growing season).

3.2 Antecedent Precipitation Tool Summary

The Antecedent Precipitation Tool was used to analyze the 30-day rolling total and the 30-year normal range of precipitation data for the nearest recording weather stations to the Review Area.

The data presented in the Antecedent Precipitation Tool results graphic (Attachment 3) indicate that normal conditions occurred at the time of the November 19, 2024, survey.

4.0 Methods

4.1 Pre-Field Review

Prior to conducting the delineation, a recent aerial photograph, USGS topographic maps of the Review Area, including the 7.5-minute Westmorland East quadrangle (USGS 1992; see Figure 2), the USGS NHD (USGS 2024), USDA soil maps of the Review Area (see Figure 4), and the USFWS NWI (USFWS 2024; see Figure 4), were examined to aid in the determination of potential jurisdictional waters within the Review Area.

4.2 Field Delineation

RECON Environmental, Inc (RECON) regulatory specialists Camille Defrenne and Chelsea Polevy conducted a jurisdictional delineation field visit on November 19, 2024, from 10:00 a.m. to 1:00 p.m. Field survey conditions at the beginning of the field visit were 67°F with 50 percent cloud cover and no wind. Field conditions at the end of the field visit were 70°F with 30 percent cloud cover and winds at approximately one to three miles per hour. Areas potentially subject to ponding or exhibiting other drainage patterns and/or areas with wetland or riparian vegetation within the Review Area were evaluated with a focus on the presence of defined channels and/or wetland vegetation, soils, and hydrology. Detailed field methods for each relevant agency are provided below.

While in the field, potentially jurisdictional features were recorded using a hand-held Global Positioning System unit with a level of accuracy ranging from 5 to 8 feet. RECON staff later refined the data using aerial photographs and topographic maps with 2-foot contours to ensure accuracy. Some portions of the Review Area were inaccessible due to private property restrictions. As such, these portions were surveyed from the shoulder of the north/south paved Brandt Road using binoculars coupled with a detailed aerial imagery analysis (Google Earth 2024). These areas include the segment of the Lateral One canal that is north of the Alamo River within the Review Area and the three irrigation ditches that are south of the Alamo River.

4.2.1 U.S. Army Corps of Engineers

Wetland Delineation

RECON staff used the applicable routine determination methods in Part IV, Section D, Subsection 2 of the USACE 1987 *Wetland Delineation Manual* (USACE 1987) and the 2008 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (Arid West Supplement; USACE 2008) to assess potential USACE jurisdictional areas within the Review Area. USACE defines wetlands as "[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a

prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (USACE 1987).

Areas that met the three parameters per the Arid West Supplement (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) were considered potential wetland waters of the U.S. Wetland plant indicator status were based on the *2022 National Wetland Plant List* (USACE 2023) and are noted as follows in this report: Obligate, occurs more than 99 percent in wetlands; Facultative Wetland (FACW), occurs 67 to 99 percent in wetlands; Facultative (FAC), occurs 34 to 66 percent in wetlands; Facultative Upland (FACU), occurs 1 to 33 percent in wetlands; Upland, occurs more than 99 percent in uplands; and Not Listed, considered Upland for wetland delineation purposes. Hydric soils indicators were based on *Field Indicators of Hydric Soils in the United States* (USDA 2024). RECON field staff identified soil chromas using the *Munsell's Soil Color Charts* (Munsell Color 2015) and protocols per the *Wetland Delineation Manual* (USACE 1987) and Arid West Supplement (USACE 2008).

Ordinary High Water Mark Identification

USACE regulation at 33 Code of Federal Regulations § 329.11 defines the Ordinary High Water Mark (OHWM) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." RECON staff used the *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams - Interim Version* (David et al. 2022), applicable at the time of the delineation, and guidance provided in USACE Regulatory Guidance Letter 05-05 to identify the extent of an OHWM in the field. For each feature exhibiting the potential presence of an OHWM, RECON completed a 2022 *U.S. Army Corps of Engineers (USACE) Rapid Ordinary High Water Mark (OHWM) Field Identification Data sheet* (unless features were inaccessible due to private property restrictions). Data collected on the 2022 datasheet were later transferred to the latest 2024 OHWM datasheet.

4.2.2 Regional Water Quality Control Board

Wetland Delineation

The *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, the State Water Resources Control Board and Regional Water Quality Control Board (RWQCB) define a wetland as: "An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." The RWQCB accepts the USACE wetland delineation methods and can rely on a wetland delineation and final aquatic resources delineation report verified by the USACE to determine the extent of wetland waters of the State. However, a lack of vegetation (i.e., less than five percent areal coverage of plants during the peak of the growing season) does not preclude an area from meeting the definition of a wetland waters of the State per the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State.*

Ordinary High Water Mark Identification

RECON staff utilized the same methods for determining the presence of an OHWM per the USACE as described in Section 4.2.1 to identify the limits of potential non-wetland waters of the State.

4.2.3 California Department of Fish and Wildlife

Wetland Habitat Delineation

The California Department of Fish and Wildlife (CDFW) considers an area a wetland if all three of the following criteria are present, per the USFWS wetland definition: "(1) at least periodically, the land supports predominantly hydrophytes; (2) the substrate is predominantly undrained hydric soil; and (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year" (Cowardin and Golet 1995). If less than three wetland criteria are present, an area may still function as a CDFW wetland if there is "the demonstrable use of wetland areas by wetland associated fish or wildlife resources, related biological activity, and wetland habitat values."

CDFW accepts the USACE wetland delineation methods to identify if an area meets to CDFW wetland criteria as described in Section 4.2.1. RECON determined CDFW jurisdiction wetland boundaries where the appliable criteria were met and those areas were associated with a lake or streambed.

Streambed and Riparian Habitat Delineation

CDFW also asserts jurisdiction on lake and/or streambed and associated riparian habitat. Lakes include "natural lakes or man-made reservoirs" (14 California Code of Regulations § 1.56). CDFW defines a streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (14 California Code of Regulations § 1.72). The CDFW jurisdictional riparian habitat including riparian shrub or tree canopy that is within and/or extends beyond the banks of a defined CDFW jurisdictional streambed.

RECON field staff delineated streambed based on presence of a defined bed and bank and any associated riparian habitat. Isolated riparian habitat (i.e., where riparian vegetation does not appear to be associated with a streambed) were not considered CDFW jurisdictional.

5.0 Description of Aquatic Resources

The aquatic resources delineated within the Review Area include non-wetland waters mapped as the Alamo River, the Lateral One canal, and the irrigation ditches and riparian habitat mapped adjacent to the active floodplain of the Alamo River and the Lateral One canal. These non-wetland and riparian aquatic resources total 1.43 acres (1106.60 linear feet) within the Review Area. A detailed description of these resources is provided below and in Table 2, their location within the Review Area is shown in Figure 6. USACE wetland determination data sheets are included as Attachment 4, USACE OHWM data sheets are included as Attachment 5, and photographs of the Review Area are provided in Attachment 6.

5.1 Wetlands

No wetland waters occur within the Review Area, based on field observations and data collection, as detailed below. One sample point was taken adjacent to the OHWM of the Alamo River, right under Brandt Road Bridge (see Figure 6). Only one wetland parameter was met at this sample point. Specifically, hydrophytic vegetation was present and consisted of tamarisk thickets with an absolute percent cover of 40 percent. This vegetation community was characterized by a weedy, monoculture of tamarisk, including saltcedar (*Tamarix ramosissima*; FAC) and athel tamarisk (*Tamarix aphylla*; FAC). No hydric soil or wetland hydrology was present at this sample point (see Attachment 4).

5.2 Non-Wetland Waters

Non-wetland waters were delineated within the unvegetated portions of the Alamo River, the Lateral One canal, and the irrigation ditches, totaling 0.46 acre and 1106.60 linear feet within the Review Area (see Figure 6 and Table 2). A description of each non-wetland water delineated within the Review Area is provided below.

Non-Wetland Water 1 (Alamo River)

Non-Wetland Water (NWW) 1, the Alamo River, is located in the central portion of the Review Area, totaling 0.33 acre and 338.51 linear feet (see Figure 6 and Table 2; Photograph 1). The feature consists of a river channel that contained flowing water at the time of the survey. The lateral extent of this non-wetland water was delineated at the OHWM and ranges from 27 feet wide to 65 feet wide. The OHWM was located approximately 2 feet above the water level of the Alamo River. Several geomorphic and vegetation indicators were present below the OHWM, including a break in slope on the bank, slight natural shelving, absence of vegetation (and dead tree trunks), tamarisk leaf litter washed away, soil saturation and salt/mineral deposition. Water stains were present at the OHWM on the Brandt Road bridge pillars, and tamarisk trees were primarily rooted above the OHWM, with some fine roots below the OHWM, directly in the water (see Attachment 5).

Non-Wetland Water 2 (Lateral One Canal)

NWW-2, the Lateral One canal, is located in the northwestern portion of the Review Area, totaling 0.07 acre and 346.86 linear feet (see Figure 6 and Table 2; Photograph 2). The feature consists of an irrigation channel that contained flowing water at the time of the survey. As noted in Section 4.2 above, access to the Lateral One canal was restricted; therefore, this non-wetland water was delineated at the OHWM by surveying using binoculars and by analyzing aerial imagery, including historical imagery, topographic maps, and ground-level color photographs. The estimated location of the OHWM was primarily indicated by a change in the vegetation type and density (tall grass to vegetation absent), a break in slope on the bank, and the presence of wracking (Photograph 3). The lateral extent of this non-wetland water ranges from approximately 6 feet wide to approximately 14 feet wide.

Non-Wetland Waters 3, 4, and 5 (Irrigation Ditches)

NWW-3, NWW-4, and NWW-5 were delineated as three irrigation ditches that occur in the southern portion of the Review Area, totaling 0.06 acre and 421.23 linear feet (see Figure 6 and Table 2). The features consist of one concrete-lined and two earthen-bottom man-made channels. As noted in Section 4.2, access to the irrigation ditches was restricted; therefore, these non-wetland waters were delineated using binoculars and by analyzing aerial imagery, including historical imagery, topographic maps, and ground-level color photographs. The first earthen-bottom channel, NWW-3, was unvegetated and did not contain standing or flowing water at the time of the field visit (see Table 2). The location of the NWW-3 OHWM was estimated based on the presence of the following indicators: a break in slope on the bank and mudcracks (Photograph 4). The lateral extent of NWW-3 ranges from approximately 3 feet wide to approximately 7 feet wide, and the feature totals 0.03 acre and 204.95 linear feet within the Review Area.

The second earthen-bottom channel, NWW-4, was vegetated (short herbaceous species) and contained at least one pool of standing water at the time of the field visit (Photograph 5; Table 2). The location of the NWW-4 OHWM was estimated based on the presence of the following indicators: break in slope on the bank, vegetation matted down, mudcracks, and sediment deposited on vegetation. The lateral extent of NWW-4 ranges from approximately 4 feet wide to approximately 6 feet wide, and the feature totals 0.01 acre and 90.95 linear feet within the Review Area.

The concrete-lined channel, NWW-5, was unvegetated and did not contain flowing or standing water at the time of the field visit (Photograph 6; see Table 2). The location of the NWW-5 OHWM was estimated based on the presence of the following indicators: mudcracks and wracking. The lateral extent of NWW-5 ranges from approximately 5 feet wide to approximately 6 feet wide, and the feature totals 0.02 acre and 125.33 linear feet within the Review Area.

5.3 Riparian

The delineated riparian habitat within the Review Area includes the areas mapped as tamarisk tickets and arrow weed thickets, totaling 0.97 acre (see Figures 5 and 6; Table 2). Tamarisk thickets are typically found in ditches, washes, rivers, arroyo margins, lake margins, and other watercourses. This vegetation community on-site was dominated by tamarisk species with scattered giant reed (*Arundo donax*; FACW; Photograph 7). Arrow weed thickets typically occur around springs, seeps, irrigation ditches, canyon bottoms, stream borders, and seasonally flooded washes in alluvial derived alkaline soils. This vegetation community on-site was dominated by arrow weed (FACW) that formed an intermittent to continuous canopy along the margins of the Lateral One canal (Photograph 8). Other plant species observed within this vegetation community included cattle saltbush (*Atriplex polycarpa*; FACU) and giant reed. Although these two riparian habitats are physically connected within the Review Area, tamarisk tickets were largely associated with the Alamo River and arrow weed thickets were associated with the Lateral One canal.

The Review Area also includes areas that do not predominantly support hydrophytic vegetation, including areas mapped as non-vegetated channel, agriculture, disturbed habitat, and urban/developed (see Figure 5). These areas were dominated by non-native upland species, except for the non-vegetated channel and urban/developed areas, which mostly lacked vegetation.

6.0 Deviation from National Wetlands Inventory

The results of the present analysis match the NWI mapping (see Figure 4). Specifically, two riverine areas were mapped within the Review Area based on the NWI: one riverine area was classified as R2UBH (Riverine, lower perennial, unconsolidated bottom, permanently flooded), which corresponds to the Alamo River and associated riparian habitat, based on field observations, and the other NWI riverine area was classified as R4SBCx (Riverine, intermittent, streambed, seasonally flooded, excavated), which corresponds to the Lateral One canal within the Review Area, based on field observations.

7.0 Mapping Method

The maps of the delineated aquatic resources within the Review Area are based on the analysis above. The boundary of the aquatic resources was obtained from a combination of Global Positioning System data collected in the field, aerial imagery, and recent topographic survey data. Geographic information system mapping software (ArcMap) was used to produce the graphical maps contained in this report.

8.0 Results and Conclusions

Non-wetland waters were delineated within the Review Area and include all areas mapped as non-vegetated channel (see NWW-1 to NWW-5 in Table 2; see Figures 5 and 6). These areas occur throughout the Review Area. Riparian habitat was delineated within the Review Area and includes all areas mapped as tamarisk thickets and arrow weed thickets (see Table 2; see Figures 5 and 6). These areas are associated with the Alamo River and the Lateral One canal and occur within the central and northwestern portion of the Review Area. All non-wetland water and riparian features total 1.43 acres (1106.60 linear feet) within the Review Area. No wetland waters were delineated within the Review Area.

9.0 Disclaimer Statement

This report describes the results of an aquatic resources delineation conducted within the 5.37-acre Review Area. It was prepared in accordance with the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2017). The aquatic resources delineation is used to identify and map the potential extent of jurisdictional waters. The purpose of this study was to identify and map the limits of any aquatic resources on the property to provide necessary background information for USACE to make a jurisdictional determination. USACE will review the content of this report and ultimately make a determination of federal jurisdiction for any waters of the U.S. that may be present in the Review Area. References used in the preparation of this report are included in Attachment 7.

10.0 Potential Jurisdictional Resources

This section provides a discussion of the potential for on-site aquatic resources to be considered waters under the jurisdiction of the following three agencies: USACE, RWQCB, and CDFW.

10.1 U.S. Army Corps of Engineers

The features expected to be under the jurisdiction of the USACE total 0.46 acre (1106.30 linear feet) within the Review Area (Table 3, Figure 7). A detailed description of these features is provided below.

The segment of the Alamo River within the Review Area (NWW-1) exhibits a clear OHWM and carries perennial flows based on the NWI, NHD, and field observations. Therefore, it would be considered a "relatively permanent water" under the current definition of waters of the U.S. Additionally, the Alamo River has downstream connectivity to the Salton Sea, which is considered a traditional navigable waterway (USACE 2024). Consequently, NWW-1 meets the definition of waters of the U.S. and is expected to be under the jurisdiction of the USACE. The segment of the Lateral One canal within the Review Area (NWW-2) appeared to exhibit an OHWM and to carry intermittent flows based on the NWI and field observations; this feature also has downstream connectivity to the Alamo River. Therefore, NWW-2 is expected to be under the jurisdiction of the USACE. The tree irrigation ditches appeared to exhibit an OHWM and may carry more than ephemeral flows; as such, these features would be considered waters of the U.S. and are expected to be under the jurisdiction of the USACE.

Delineated and mapped riparian habitat areas (i.e., tamarisk thickets and arrow weed thickets) lacked the wetland hydrology and hydric soil indicators required to meet the USACE definitions of a wetland (see Attachment 4) and occur outside of the OHWM of the Alamo River and Lateral One canal. Therefore, the riparian habitats are not considered potential wetland waters of the U.S.

10.2 Regional Water Quality Control Board

All waters of the U.S. described above fall within the Clean Water Act Section 401 authority of the RWQCB and are expected to be considered waters of the State (Figure 8; see Table 3).Delineated and mapped riparian habitat areas (i.e., tamarisk thickets and arrow weed thickets) lacked the wetland hydrology and hydric soil indicators required to meet the USACE and RWQCB definitions of a wetland (see Attachment 4) and occur outside of the OHWM of the Alamo River and Lateral One canal. Therefore, the riparian habitats are not considered potential wetland waters of the State.

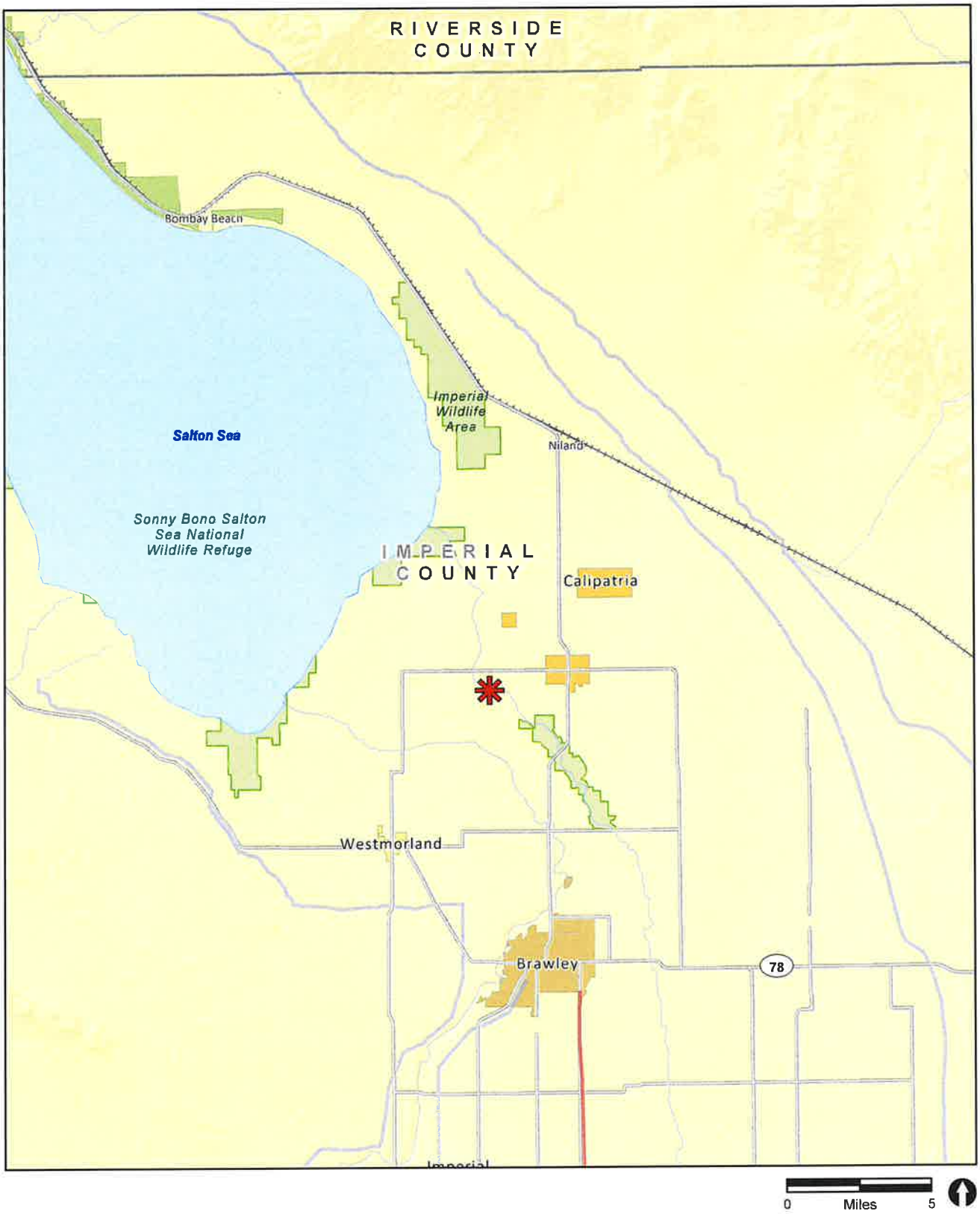
10.3 California Department of Fish and Wildlife

Within the Review Area, CDFW streambed includes the non-wetland waters of the U.S. and of the State described above (Figure 9). In addition, the tamarisk thickets and arrow weed thickets within the Review Area function as riparian habitat to their respective streambeds (i.e., the Alamo River and Lateral One canal, respectively). As such, these habitats would be considered potential CDFW jurisdictional riparian habitat. The area of potential CDFW streambed and riparian total 1.43 acres within the Review Area (see Table 3).

ATTACHMENTS

ATTACHMENT 1

Figures



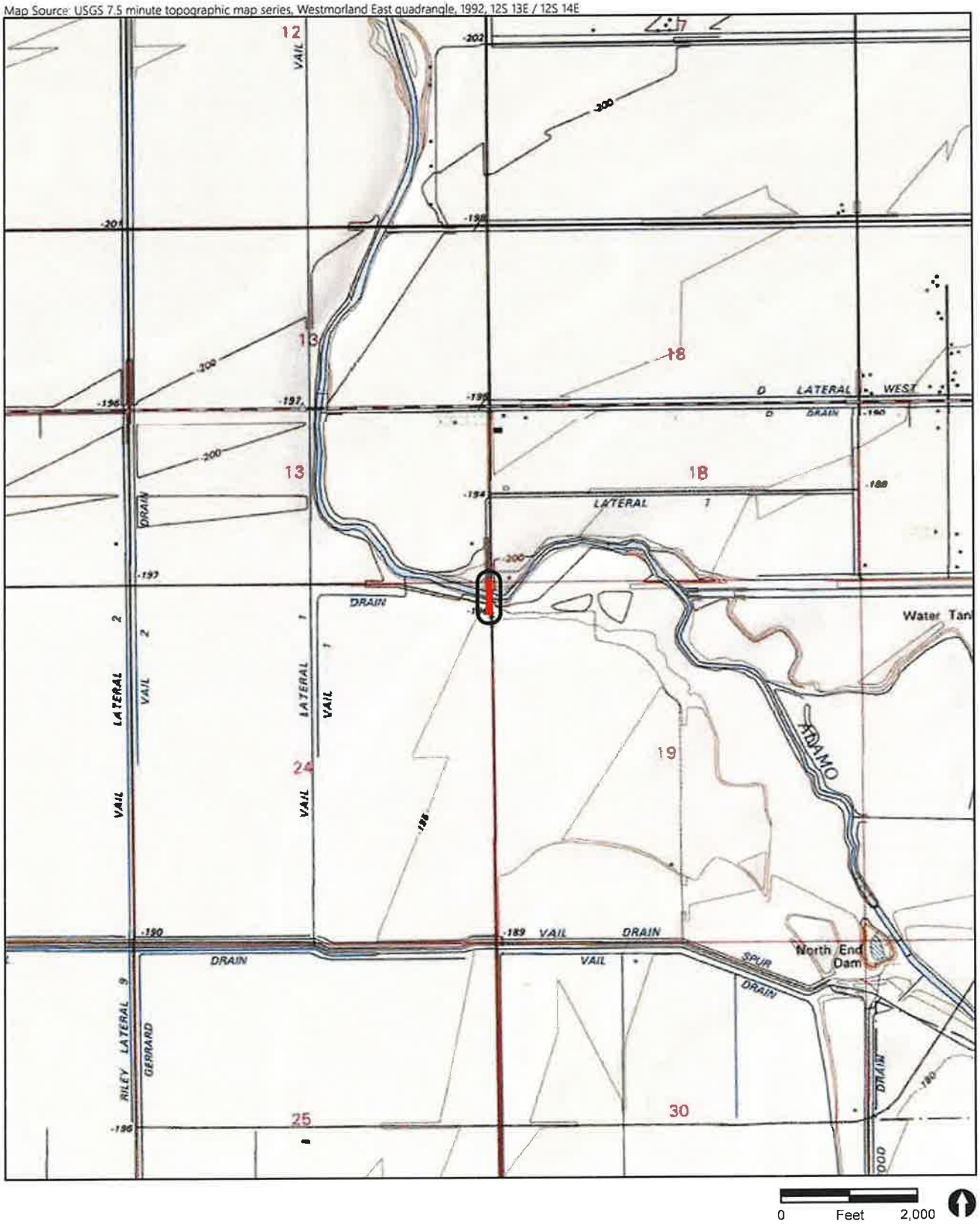
Project Location

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FIGURE 1
Regional Location

Map Source: USGS 7.5 minute topographic map series, Westmorland East quadrangle, 1992, 12S 13E / 12S 14E



Project Boundary

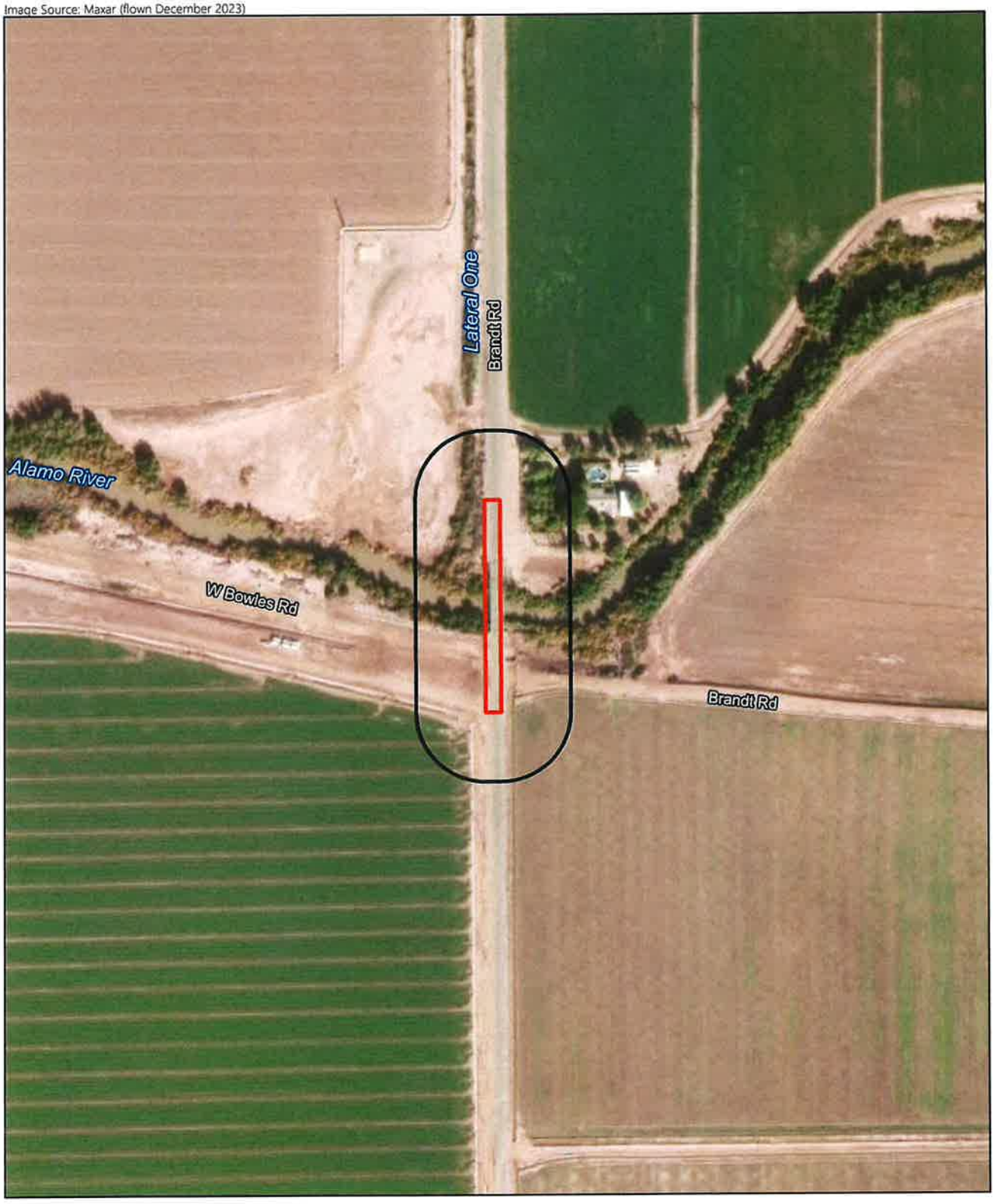
Review Area

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FIGURE 2
Project Location on USGS Map

Image Source: Maxar (flown December 2023)

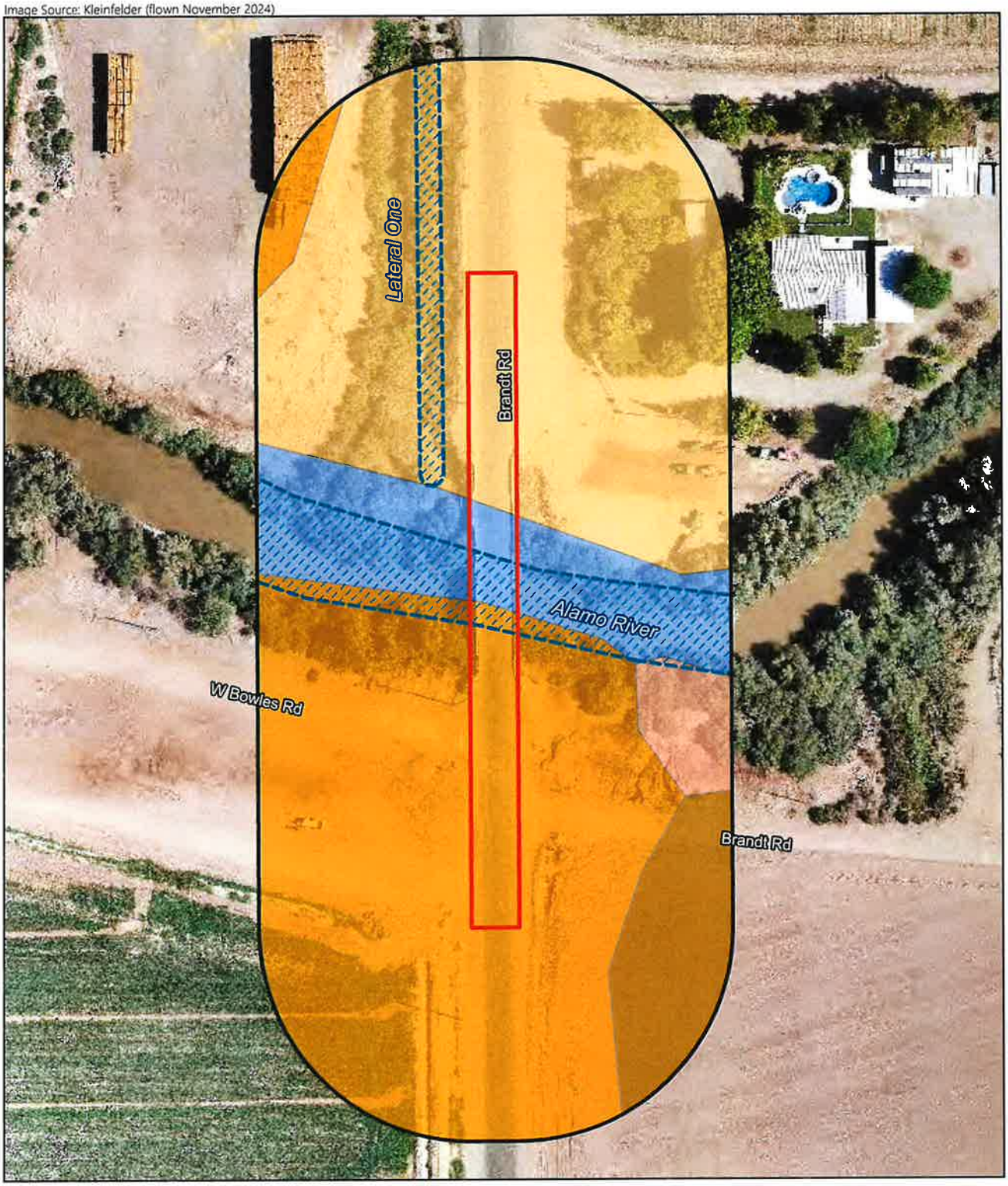


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FIGURE 3
Project Location on Aerial Photograph

Image Source: Kleinfelder (flown November 2024)



Project Boundary
Review Area
National Wetlands Inventory
Riverine

Soil Type
Holtville Silty Clay, Wet
Indio Loam, Wet
Vint And Indio Very Fine Sandy Loams, Wet
Vint Loamy Very Fine Sand, Wet
Water

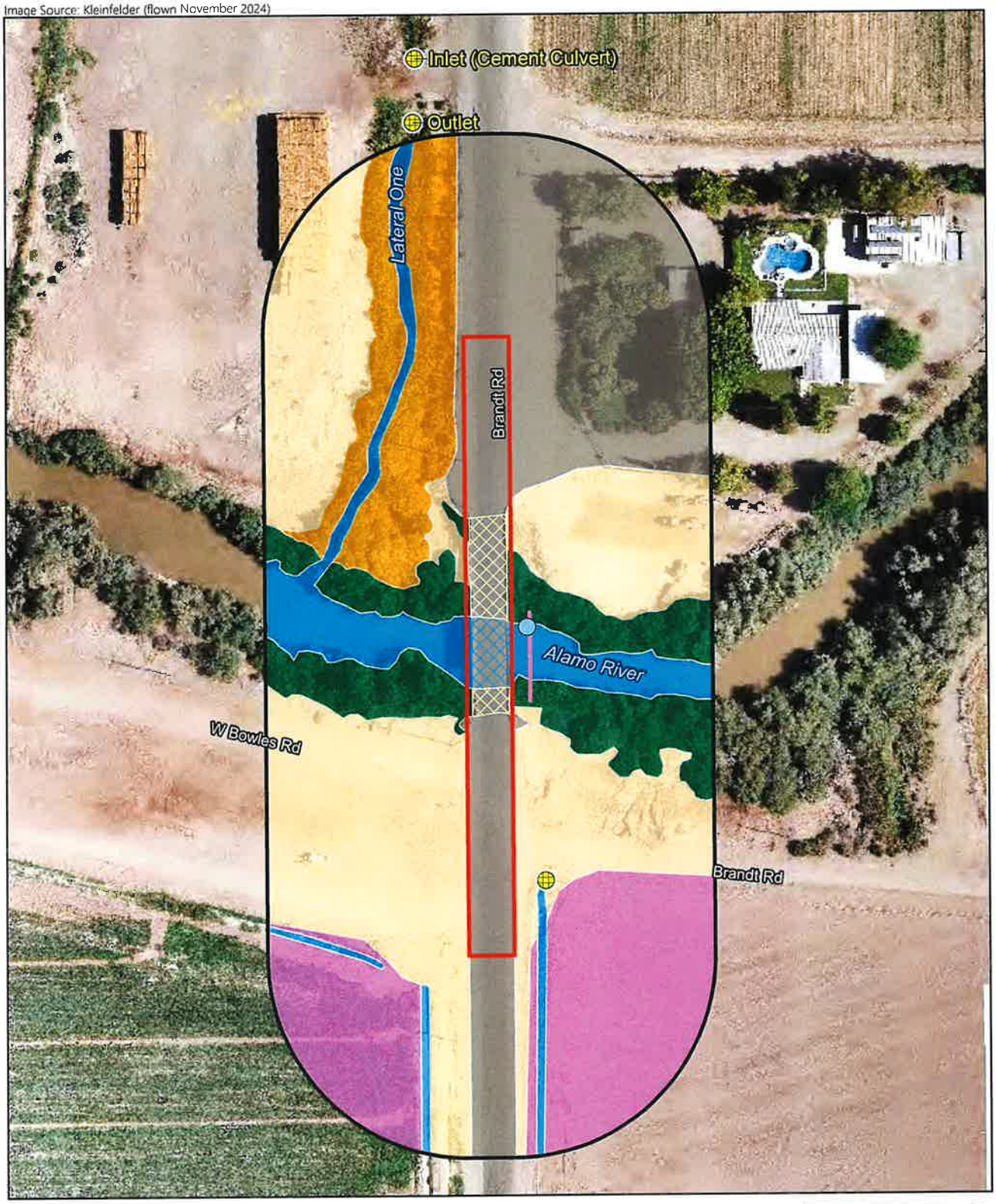
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FIGURE 4
NRCS Soils Survey Data and National Wetlands Inventory

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Image Source: Kleinfelder (flown November 2024)



Project Boundary
Review Area
Sample Point
OHWM Transect
Culvert

Vegetation Community
Non-vegetated Channel
Tamarisk Thickets
Arrow Weed Thickets
Agriculture
Disturbed Habitat
Urban/Developed
Non-vegetated Channel (Under Existing Bridge)
Disturbed Habitat (Under Existing Bridge)

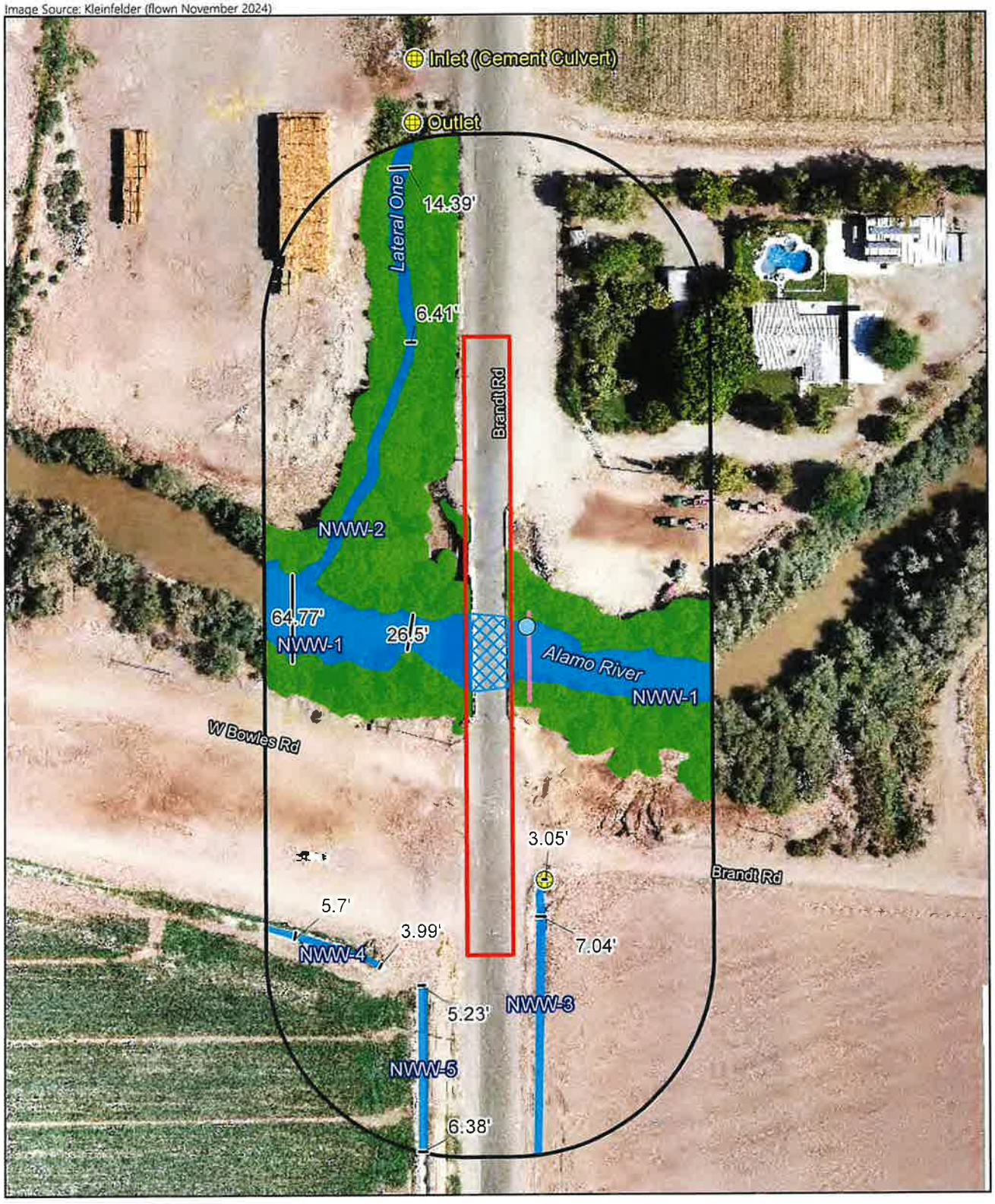
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FIGURE 5
Vegetation Communities within the Review Area

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Image Source: Kleinfelder (flown November 2024)



Project Boundary
Review Area
Sample Point
OHWM Transect
Culvert

Aquatic Resources
Non-wetland Waters
Riparian
Non-wetland Waters (Under Existing Bridge)

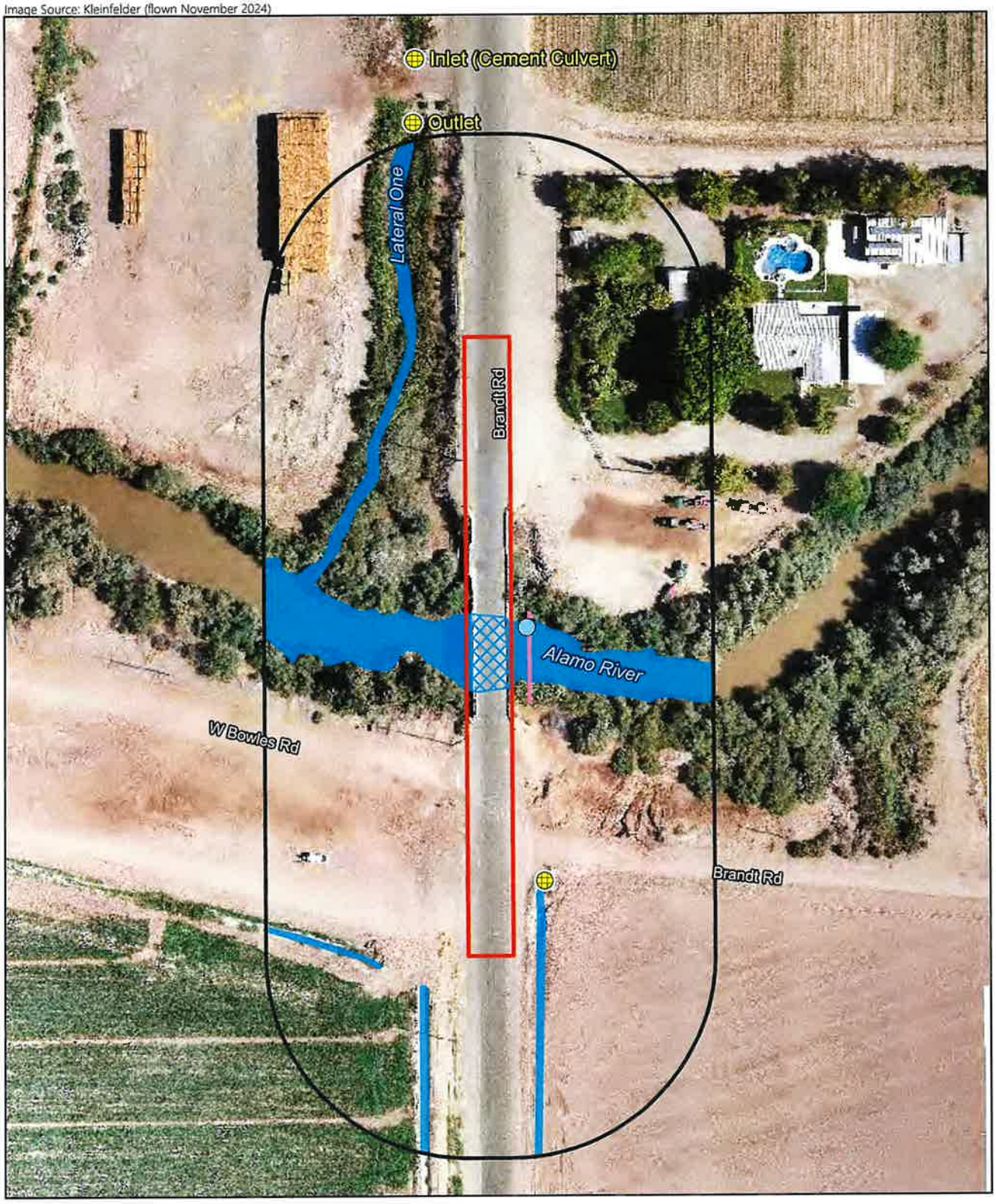
0 Feet 100

RECON

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FIGURE 6
Aquatic Resources Delineated within the Review Area

Image Source: Kleinfelder (flown November 2024)



Project Boundary
Review Area
Sample Point
OHWM Transect
Culvert

Potential USACE Jurisdictional Resources

Non-wetland Waters of the U.S.
Non-wetland Waters of the U.S. (Under Existing Bridge)

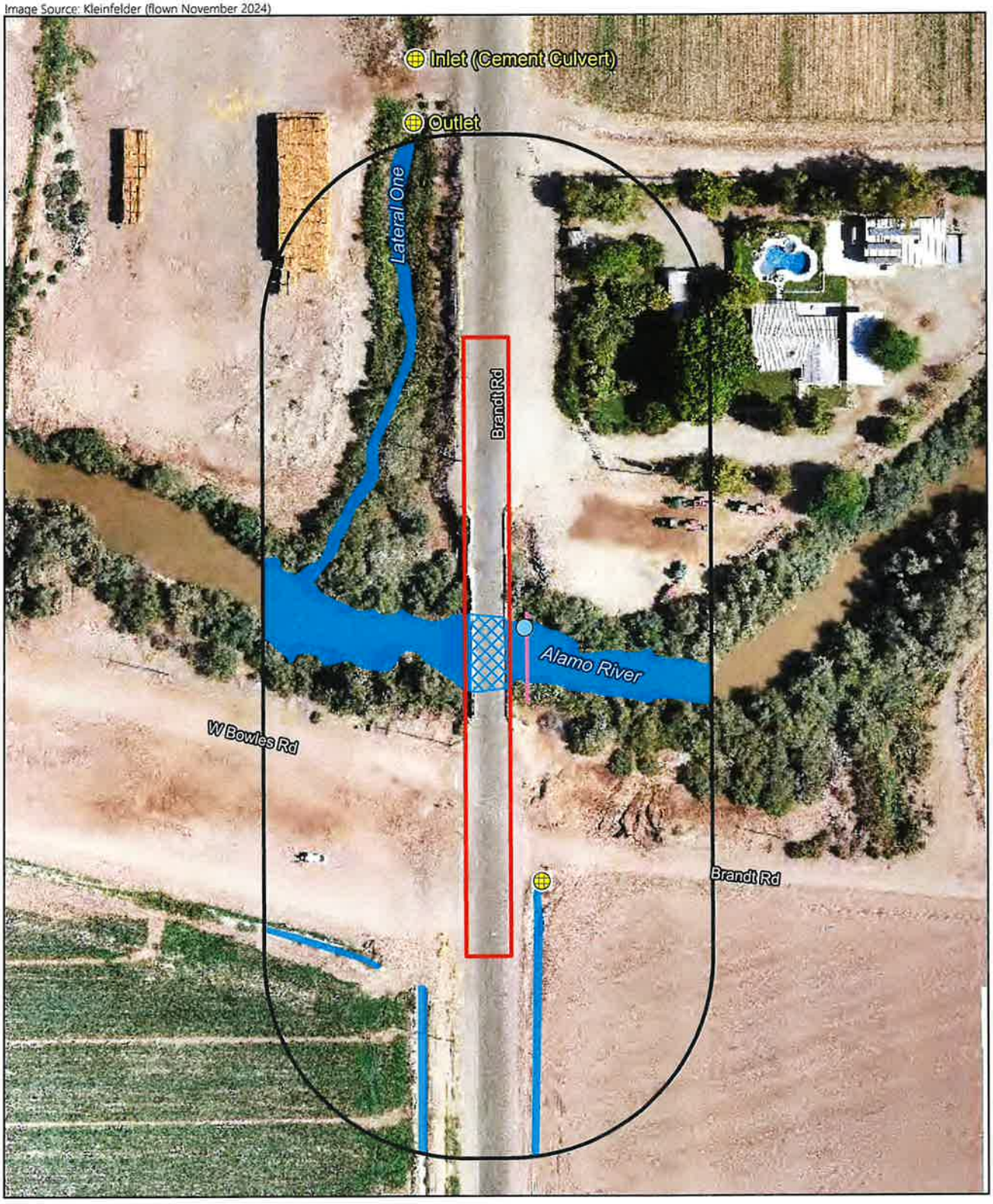
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FIGURE 7
Potential USACE Jurisdictional Resources

Image Source: Kleinfelder (flown November 2024)



Project Boundary
Review Area
Sample Point
OHWM Transect
Culvert

Potential RWQCB Jurisdictional Resources

Non-wetland Waters of the State
Non-wetland Waters of the State (Under Existing Bridge)

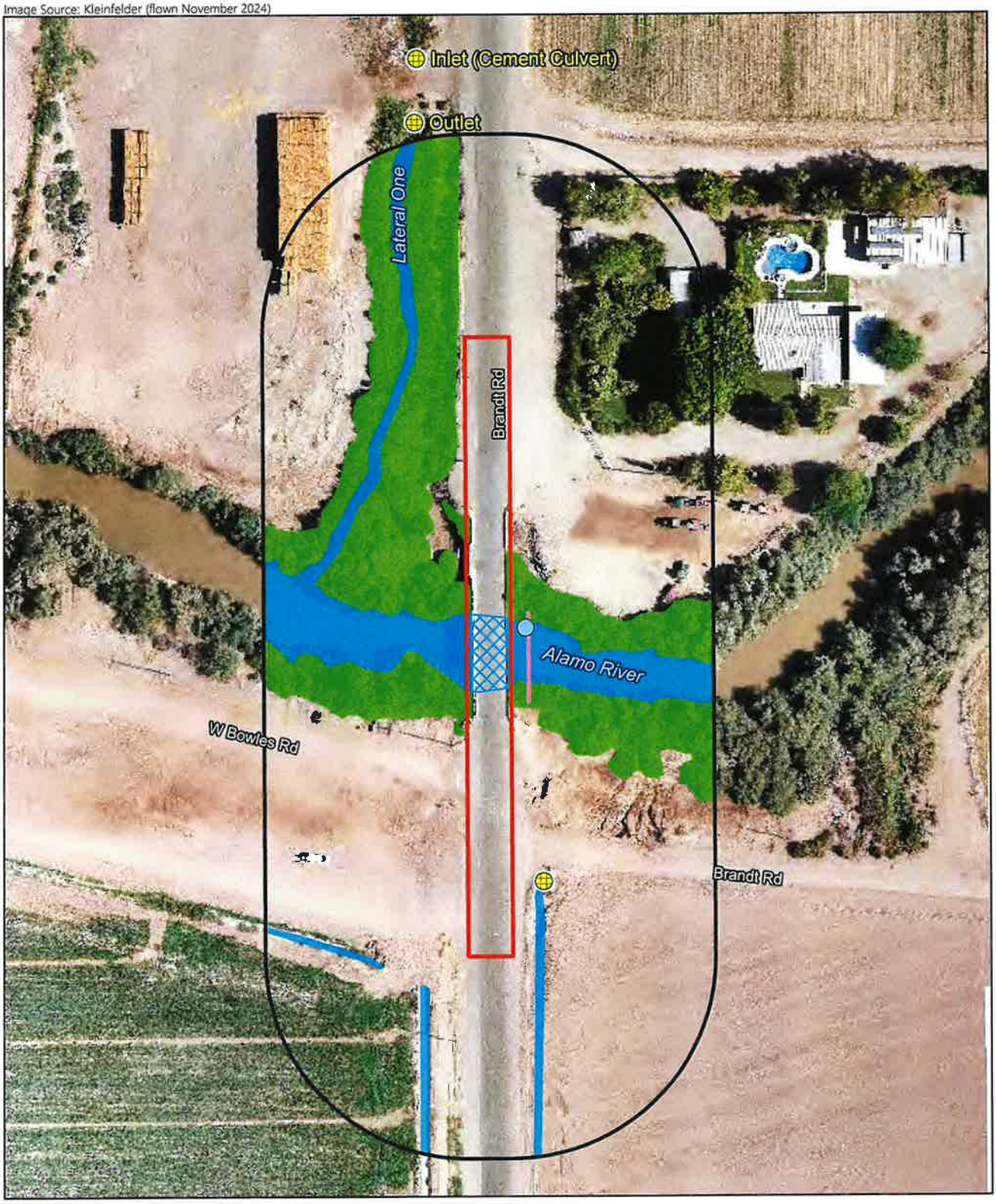
0 Feet 100

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FIGURE 8
Potential RWQCB Jurisdictional Resources

Image Source: Kleinfelder (flown November 2024)



Project Boundary
Review Area
Sample Point
OHWM Transect
Culvert

Potential CDFW State Waters
Streambed
Riparian
Streambed (Under Existing Bridge)

0 Feet 100

RECON

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FIGURE 9
Potential CDFW State Waters

ATTACHMENT 2

Tables

Table 1 Vegetation Communities/Land Cover Types within the Review Area			
Vegetation Community/Land Cover Types[1]	Project Boundary (acre)	Review Area (acre)	Total (acre)
Under Brandt Road Bridge			
Disturbed Habitat	0.06	--	0.06
Non-vegetated Channel	0.03	--	0.03
Above/Around Brandt Road Bridge			
Agriculture	--	0.82	0.82
Arrow Weed Thickets	--	0.46	0.46
Disturbed Habitat	<0.01 (0.004)	1.78	1.79
Non-vegetated Channel	0.01	0.39	0.39
Tamarisk Thickets	0.01	0.53	0.54
Urban/Developed	0.24	1.03	1.27
GRAND TOTAL[2]	**0.35**	**5.01**	**5.37**

[1] Vegetation classification follows the California Native Plant Society Manual of California Vegetation (Sawyer et al. 2009) with cross reference to Holland (1986) as modified by Oberbauer et al. (2008).

[2]Areas are presented in acres, rounded to the nearest 0.01; any discrepancies in the total are due to rounding.

Table 2
List of Aquatic Resources

Waters ID	Cowardin Code	HGM Code	Area (acre)	Linear Feet	Latitude (dd WGS84)	Longitude (dd WGS84)	Local Waterway	Dominant Vegetation
NWW-1	R2UB	Riverine	0.33	338.51	33.117878	-115.562512	Riverine	Primarily unvegetated
NWW-2	R4SB	Riverine	0.07	346.86	33.118572	-115.562848	Riverine	Primarily unvegetated
NWW-3	R	Riverine	0.03	204.95	33.117338	-115.562519	Riverine	Primarily unvegetated
NWW-4	R	Riverine	0.01	90.95	33.117236	-115.562962	Riverine	Vegetated (grasses)
NWW-5	R	Riverine	0.02	125.33	33.117137	-115.562808	Riverine	Primarily unvegetated
Riparian	RP	Riverine	0.97	--	33.118079	-115.562867	Riverine	*Tamarix ramosissima* *Tamarix aphylla* *Arundo donax* *Atriplex polycarpa* *Pluchea sericea*
Total[1]	--	--	1.43	1,106.60	--	--	--	--

NWW = Non-wetland Water; HGM = hydrogeomorphic
Cowardin Code: R2UB = Unconsolidated Bottom, Lower Perennial, Riverine; R4SB = Streambed, Intermittent, Riverine; R = Riverine; RP = Riparian; HGM = hydrogeomorphic
[1]Areas are presented in acres, rounded to the nearest 0.01; discrepancies are due to rounding.

Table 3 Potential Jurisdictional Resources within Review Area (acres)	
Potential Jurisdictional Resource	Acreage in Review Area (Linear Feet)*
USACE Waters of the U.S.	
Non-wetland Waters of the U.S.	0.46 (1,106.60)
RWQCB Waters of the State	
Non-wetland Waters of the State[1]	0.46 (1,106.60)
CDFW State Waters	
Streambed[1]	0.46 (1,106.60)
Riparian[2]	0.97
GRAND TOTAL	**1.43 (1,106.60)**

USACE = U.S. Army Corps of Engineers; RWQCB = Regional Water Quality Control Board; CDFW = California Department of Fish and Wildlife

*Any discrepancies in total are due to rounding.

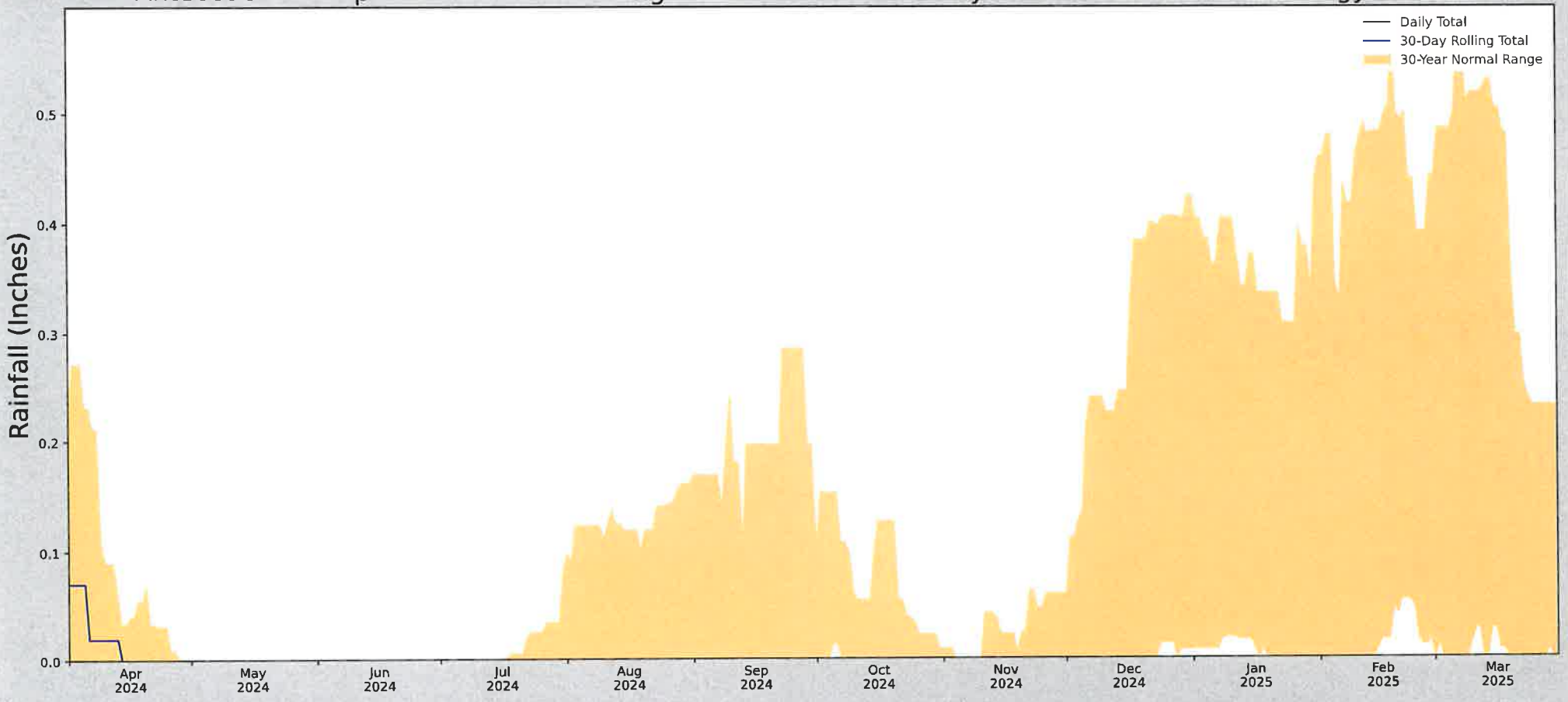
[1] RWQCB/CDFW areas of jurisdiction includes all USACE jurisdictional waters.

[2]Non-wetland waters/streambed areas not included in the riparian areas so that no area is counted twice for the same jurisdiction.

ATTACHMENT 3

Antecedent Precipitation Tool Results

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	33.117894, -115.562809
Observation Date	2024-11-19
Elevation (ft)	-211.441
Drought Index (PDSI)	Moderate drought (2024-10)
WebWIMP H_2O Balance	Dry Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-11-19	0.0	0.005906	0.0	Normal	2	3	6
2024-10-20	0.0	0.127559	0.0	Normal	2	2	4
2024-09-20	0.0	0.19685	0.0	Normal	2	1	2
Result							Normal Conditions - 12

US Army Corps of Engineers.

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by:
U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
EL CENTRO 2 SSW	32.7667, -115.5664	-29.856	24.266	181.585	15.326	10836	78
IMPERIAL CO AP	32.8347, -115.5767	-55.118	4.736	25.262	2.251	404	12
IMPERIAL	32.8489, -115.5667	-63.976	5.68	34.12	2.75	113	0

ATTACHMENT 4

Wetland Determination Data Sheets

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Arid West Region
See ERDC/EL TR-08-28; the proponent agency is CECW-COR

OMB Control #: 0710-0024, Exp: 09/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Brandt Road bridge (10513) City/County: Imperial County Sampling Date: 11/19/2025

Applicant/Owner: Imperial County Department of Public Works State: CA Sampling Point: 1

Investigator(s): C. Defrenne; C. Polevy Section, Township, Range: T12S R13E/T12S R14E

Landform (hillside, terrace, etc.): Creek Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): LRR D Lat: 33.117935 Long: -115.562593 Datum: WGS 84

Soil Map Unit Name: Water NWI classification: Riverine

Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (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 x No ____
Hydric Soil Present? Yes ____ No x
Wetland Hydrology Present? Yes ____ No x

Is the Sampled Area within a Wetland? Yes ____ No x

Remarks: Sample point above the OHWM of Alamo River. Hydrophytic vegetation present (tamarisk trees.). No hydric soil or wetland hydrology present.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tamarix spp.	40	Yes	FAC
2.			
3.			
4.			
	40 =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. None			
2.			
3.			
4.			
5.			
	0 =Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. None			
2.			
	0 =Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)
Prevalence Index = B/A =	

Hydrophytic Vegetation Indicators:

x 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, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes x No ____

Remarks: Ground almost entirely covered with tamarisk leaf litter.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 4/3	100	N/A				SiCL	
13-16	10 YR 4/3	100	N/A				Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

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)
- ___ Iron Monosulfide (A18)
- ___ 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)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR C)**
- ___ 2 cm Muck (A10) **(LRR B)**
- ___ Iron-Manganese Masses (F12) **(LRR D)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes ___ No x

Remarks:

Sample point location mapped as "water" based on the Soil Survey for Imperial County, CA, Imperial Valley Area (U.S. Department of Agriculture 1981). Soils north of Alamo River mapped as Vint and Indio very fine sandy loams, wet. This soil type is not listed as hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ 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 on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Water Marks (B1) **(Riverine)**
- ___ Sediment Deposits (B2) **(Riverine)**
- ___ Drift Deposits (B3) **(Riverine)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No x Depth (inches): ___

Water Table Present? Yes ___ No x Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No x Depth (inches): ___

Wetland Hydrology Present? Yes ___ No x

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: None available.

Remarks:

Sample point located above the OHWM of Alamo River.

VEGETATION Continued – Use scientific names of plants.

Sampling Point: 1

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=Total Cover		
Sapling/Shrub Stratum			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
	=Total Cover		
Herb Stratum			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	=Total Cover		
Woody Vine Stratum			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants less than 3 in. DBH, regardless of height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size.

Woody Vine – All woody vines, regardless of height.

Remarks:

AGENCY DISCLOSURE NOTIFICATION

The public reporting burden for this collection of information, OMB Control Number 0710-0024, is estimated to average 30 minutes per response, including the timefor reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services,at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR REQUEST TO THE ABOVE EMAIL.**

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned. System of Record Notice (SORN). The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website: http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx

ATTACHMENT 5

Ordinary High Water Mark Data Sheets

Print Form | Save As

U.S. Army Corps of Engineers (USACE)
RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-COR.

Form Approved -
OMB No. 0710-0024
Expires: 2027-09-30

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information, 0710-0024, is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: 10513	Site Name: Brandt Road - Alamo River	Date and Time: 11/19/2024 11:00 a.m.
Location (lat/long): 33.117935/-115.562593	Investigator(s): C. Defrenne; C. Polevy	

Step 1 Site overview from remote and online resources.
Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [x] climatic data
- [x] satellite imagery
- [ ] land use maps
- [ ] aerial photos
- [x] topographic maps
- [ ] Other: _____

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
OHWM identification point located within the Alamo River, right under Brandt Road bridge. No recent extreme event occured.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or human-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls, etc.

OHWM identification point located under Brandt Road bridge.

Step 3 Mark the boxes next to the indicators used to help identify the location of the OHWM.
OHWM is at a transition point, therefore some indicators used to identify the location of the OHWM may be just below or above the OHWM. Make a slash in boxes next to indicators that are helpful in identifying the OHWM. After the initial assessment, those indicators identified at the OHWM elevation should be changed from slashes to x's. Note, it is not necessary to mark indicators that are present but do not help inform identification of the OHWM.
Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and attach a photo log.

Geomorphic indicators

- [x] **Break in slope**
  - [x] *on the bank*
  - [ ] *undercut bank*
  - [ ] *valley bottom*
  - [ ] Other: _____
- [x] **Shelving**
  - [x] *shelf at top of bank*
  - [ ] *natural levee*
  - [ ] *human-made berms or levees*
  - [ ] *other berms:* _____
- [ ] **Secondary channels**
- [ ] **Channel bar**
  - [ ] *shelving (berms) on bar*
  - [ ] *unvegetated*
  - [ ] *vegetation transition (go to veg. indicators)*
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar*
- [ ] **Instream bedforms and other bedload transport evidence**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.)*
  - [ ] *Weathered clasts or bedrock*
  - [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*

Sediment indicators

- [ ] **Soil development**
- [ ] **Changes in character of soil**
- [ ] **Mudcracks**
- [ ] **Changes in particle-sized distribution**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits*

Vegetation indicators (*Consider the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain*)

- [x] **Change in vegetation type from** 0 **to** Trees
- [x] **Change in density of vegetation**
- [ ] **Exposed roots below intact soil layer**
- [ ] **Vegetation matted down and/or bent**
- [ ] **Other vegetation observations**

Other physical indicators

- [x] **Sediment deposited on vegetation or structures**
- [ ] **Wracking/presence of organic litter**
- [ ] **Presence of large wood**
- [X] **Leaf litter disturbed or washed away**
- [X] **Water staining**

Other observed indicators? Describe:

Salt/mineral deposits below and at the OHWM.

Dead tree trunks below the OHWM.

Print Form | Save As

Project ID #: _____

Step 4 Was additional information used to support identification of the OHWM? ☐ Yes ☐ No

If yes, describe and attach information to data sheet:

Step 5 Is an OHWM present at this site? ☐ Yes ☐ No

Describe rationale for location of OHWM or lack thereof by describing any observed indicators (at, above, and/or below the OHWM location).

The OHWM occurs approximately 2 feet above the Alamo River level at the time of the assessment. The following indicators were below the OHWM: break in slope on the bank, vegetation absent (with dead tree trunks), slight natural shelving, leaf litter washed away, soil saturation, and salt/mineral deposits. The following indicators were at the OHWM: water staining on the birdge pillars and salt/ mineral deposits. Tamarisk trees were rooted above the OHWM with some fine roots below the OHWM, directly in the water.

Additional observations or notes

Attach an imagery log of the site.

Imagery log attached? ☒ Yes ☐ No If no, explain why not: _____

List photographs, or other imagery/sketches, and include descriptions in the table below.

Number photographs in the order that they are taken. Attach imagery and include annotations of features.

Imagery Number	Imagery description
1	Break in slope below OHMW, facing southeast (upstream)
2	Break in slope, soil saturation, and natural shelving below OHWM, facing northwest (downstream)
3	Alamo River under Brandt Road bridge, facing south (crosstream)
4	Water stains and sediment deposits on bridge pillars at OHWM, facing south (crosstream)
5	Salt/mineral deposits at and below OHWM

OHWM Field Identification Data Sheet Instructions and Field Procedure

Step 1 **Site overview from remote and online resources (Chapter 5)** **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on data sheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape. (Chapter 4)

a. **Note on the data sheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
   iii. Erosional and depositional environments
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 **Site conditions during the field assessment (assemble evidence) (Chapter 1 and 3)**

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious human-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the data sheet,** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a **List evidence (Chapter 2 and 3)**

Assemble evidence by marking each box with a slash next to each line of evidence.
If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators
Where are the breaks in slope?
Are there identifiable banks?
Is there an easily identifiable top of bank?
Are the banks actively eroding?
Are the banks undercut?
Are the banks armored?
Is the channel confined by the surrounding hillslopes?
Are there natural or man-made berms and levees?
Are there fluvial terraces?
Are there channel bars?

Sediment and soil indicators
Where does evidence of soil formation appear?

Are there mudcracks present?

Is there evidence of sediment sorting by grain size?

Vegetation indicators
Where are the significant transitions in vegetation species, density, and age?

Is there vegetation growing on the channel bed?

If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?

Where are the significant transitions in vegetation?

Is the vegetation tolerant of flowing water?

Has any vegetation been flattened by flowing water?

Other physical indicators
Is there organic litter present?

Is there any leaf litter disturbed or washed away?

Is there large wood deposition?

Is there evidence of water staining?

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b Weight each line of evidence (Chapter 1 and 3)

Consider importance of each indicator by assessing the following:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows? Did recent extreme events and/or land use affect this indicator?

ii. Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages?

iii. Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low-flow indicator. The difference between high-and extreme-flow indicators can sometimes be difficult to determine.

iv. Recent floods may have left many extreme-flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.

v. Droughts may cause field evidence of OHWM to be obscured because there has been an extended time since the last high-flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.

vi. Both human-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provide specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describe each indicator in detail and provide examples of areas where indicators are difficult to interpret.

***Landscape context from Step 1 (Chapter 4) can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***In Chapter 2 of the OHWM field manual provides information on specific indicators that can assist in putting these in context and determining relevance, strength, and reliability.**

Step 4 Was additional information used to support identification of the OHWM? Are other resources used to support the lines of evidence observed in the field?

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling and weighting evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were used to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the data sheet.

Step 5 Describe rationale for location of OHWM: (Chapter 1 and Chapter 3)

a. Weigh body of evidence:

Combine information from Step 3b: Why do the combination of indicators represent the OHWM?

i. Integrate the lines of evidence (relevance, strength, and reliability) of each indicator.

ii. Consider which indicators are high value indicators that co-occur along the stream reach. Which indicators are most relevant to identifying high flow elevations, which are most persistent across the landscape, and which are most persistent over time?

iii. Which indicators that are found above and below the location of the OHWM were helpful in identifying the elevation of the OHWM?

b. If there is more than one possible location, explain why, Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the data sheet under Step 5 or attach additional sketches and field observations to the data sheet.

d. Take photographs of indicators and attach an imagery log using page 2 of data sheet or another method of logging images.

i. Annotate images with descriptions of indicators.



PHOTOGRAPH 1
Break in Slope Below OHWM,
Facing Southeast (Upstream)



PHOTOGRAPH 2
Break in Slope, Soil Saturation, and Natural Shelving
Below OHWM, Facing Northwest (Downstream)

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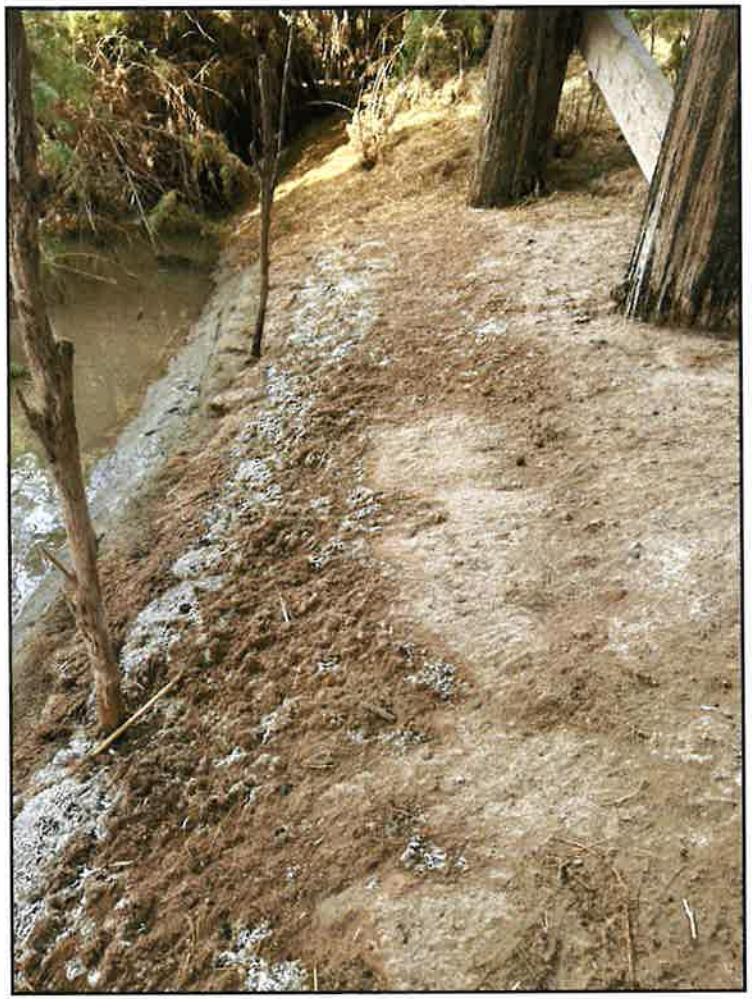


PHOTOGRAPH 3

Alamo River Under Brandt Road Bridge, Facing South (Cross-stream)



PHOTOGRAPH 4
Water Stains and Sediment Deposits on Bridge Pillars at OHWM, Facing South (Cross-stream)



PHOTOGRAPH 5
Salt/Mineral Deposits at and Below OHWM

ATTACHMENT 6

Ground-Level Color Photographs



PHOTOGRAPH 1
View of Alamo River from Brandt Road Bridge, Facing West (Downstream)



PHOTOGRAPH 2
View of Lateral Canal (Lateral One) Along Brandt Road, Facing North



PHOTOGRAPH 3
View of Culvert within Lateral Canal Outside of Review Area, Facing East



PHOTOGRAPH 4
View of First Irrigation Ditch (Unlined), Facing South



PHOTOGRAPH 5
View of Second Irrigation Ditch (Unlined), Facing West



PHOTOGRAPH 6
View of Third Irrigation Ditch (Concrete-Lined), Facing South



PHOTOGRAPH 7
View of Riparian Habitat Along Alamo River Showing Tamarisk Thickets, Facing East



PHOTOGRAPH 8
View of Riparian Habitat Along Lateral Canal Showing Arrow Weed Thickets, Facing South

ATTACHMENT 7

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Appendix G: Habitat Assessment and Burrowing Owl Focused Survey Results for the Brandt Road Bridge Replacement Project

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August 28, 2025

Robert Ureña III, PE
Imperial County Department of Public Works
155 S. 11th Street
El Centro, CA 92243

Reference: Burrowing Owl Habitat Assessment and Breeding Season Survey Report for the Brandt Road Bridge Replacement Project (RECON Number 10513)

Dear Mr. Ureña:

This letter summarizes the results of the habitat assessment and 2025 breeding season surveys for western burrowing owl (*Athene cunicularia hypugaea*) conducted for the Brandt Road Bridge Replacement Project (project). The project location, burrowing owl species and historical occurrence information, and survey methods and results are discussed in detail below. Survey results will be used to assess potential impacts and identify appropriate avoidance, minimization, and/or mitigation measures for the project.

1.0 Project Location and Description

The project is located southwest of the city of Calipatria and east of the Salton Sea in Imperial County, California (Figure 1). The project is located within the U.S. Geological Survey (USGS) 7.5-minute Westmorland East quadrangle, Township 12 South, Range 13 East/14 East (USGS 1992; Figure 2).

The project proposes to replace an existing wood bridge constructed in 1950 that spans the Alamo River. The existing wooden structure consists of an approximately 150-foot-long, ten-span bridge, with pile bents located within the Alamo River. The project would demolish and dispose of the existing bridge and supporting features, followed by the construction of a new single-span bridge within the same alignment.

The proposed two-lane bridge would be located within the same alignment but would be slightly wider than the existing two-lane bridge. The proposed approaches would consist of two 12-foot-wide lanes and two 8-foot-wide unpaved shoulders with a design speed of 55 miles per hour. The approaches would be tapered to provide a transition between the existing segments of Brandt Road north and south of the project site that have unpaved shoulders and the replacement bridge that would include paved shoulders.

2.0 Western Burrowing Owl Species Description

On October 15, 2024, the California Fish and Game Commission (CFGC) published notification that it has accepted for consideration the petition submitted to list western burrowing owl as threatened or endangered under the California Endangered Species Act (CESA). Based on its determination and acceptance of the petition, the California Fish and Game Commission provided notice that the western burrowing owl is a candidate species as defined by Section 2068 of the CFGC.

Within one year of that publication (expected October 15, 2025), the California Department of Fish and Wildlife (CDFW) is expected to submit a written report, pursuant to Section 2074.6 of the CFGC, indicating whether the petitioned action is warranted and if so, the species I would become listed as threatened or endangered under CESA. In October 2024, the Imperial County Board of Supervisors formally requested that if CDFW designates western burrowing owl as listed in California, that Imperial County be exempt from the listing designation. The Board of Supervisors cited burrowing owl's relatively stable population numbers and existing conservation measures within Imperial County as the cause for their request. Studies conducted by Ruhlen et al. (2004) show that the density and abundance of this species within the Imperial Valley is exceptionally high compared to other areas in southern California.

Western burrowing owl, the western subspecies, is primarily restricted to the western United States and Mexico. Habitat for the western burrowing owl includes dry, open, low-growing grasslands, deserts, and scrublands with level to gently sloping topography and well-drained soils (CDFW 2012). These areas are also often associated with burrowing mammals (Haug et al. 1993). Irrigation canals, ditches, and drains immediately adjacent to agricultural fields are also commonly used as nesting sites (Ruhlen et al. 2004; Coulombe 1971). Western burrowing owl is known to use multiple burrows in addition to their nesting burrows called "satellite" burrows. These non-nesting burrows are used to seek protection from predators and for roosting during the non-breeding season (CDFW 2012).

The western burrowing owl is diurnal and typically perches during daylight at the entrance to its burrow or on adjacent structures, such as low posts. Nesting typically occurs from March through August. Western burrowing owl breeding pairs form a bond for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Western burrowing owl is an opportunistic feeder, consuming a diet that includes arthropods, small mammals, birds, and occasionally amphibians and reptiles (Haug et al. 1993). Urbanization has greatly reduced the amount of suitable habitat for the western burrowing owl. Other contributions to the decline of this species include the poisoning of fossorial mammals, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

3.0 Survey Methods

RECON biologists Chelsea Polevy, Camille Defrenne, and Alex Fromer conducted surveys for western burrowing owl in accordance with the guidelines developed by CDFW (CDFW 2012). Biologists walked straight-line transects within the burrowing owl survey area where legal access was permitted and surveyed private properties from the project site boundary using binoculars. For the purposes of this report, the survey area encompasses the project site and an approximately 60-meter surrounding buffer within which vegetation communities were mapped, and the burrowing owl survey area includes the project site and an approximately 150-meter surrounding buffer where focused surveys for western burrowing owl were conducted (Figure 3). Surveys included one habitat assessment during the non-breeding season and four site visits during the breeding season (Table 1). Breeding season surveys were spaced at least three weeks apart. Morning surveys were conducted between civil dawn and 10:00 a.m. and evening surveys were conducted between two hours before sunset and civil dusk (see Table 1). All wildlife species observed during the surveys were noted, and all suitable burrows were recorded using a handheld global positioning system (GPS) device.

Table 1 Burrowing Owl Survey Dates, Personnel and Conditions				
Survey Type	Date	Personnel	Survey Time	Survey Conditions
Habitat Assessment	11/19/24	C. Polevy, C. Defrenne	10:00 a.m. - 1:00 p.m.	67-70°F, 50-30% cloud cover, wind 0-3 mph
Breeding Season Survey #1	3/3/25	C. Polevy	7:00 a.m. - 9:00 a.m.	54-58°F, 25% cloud cover, wind 3-7 mph
Breeding Season Survey #2	4/28/25	A. Fromer	6:15 p.m. - 7:45 p.m.	79-73°F, 0% cloud cover, wind 0-1 mph
Breeding Season Survey #3	5/27/25	C. Polevy	5:45 p.m. - 7:30 p.m.	96-92°F, 40-35% cloud cover, wind 3-6 mph
Breeding Season Survey #4	6/26/25	A. Fromer	8:30 a.m. - 10:00 a.m.	81-88°F, 0% cloud cover, wind 1-4 mph

4.0 Survey Results

The burrowing owl survey area contains suitable habitat consisting of sparsely vegetated disturbed habitat and agriculture with low-growing vegetation (Photographs 1 and 2). Specifically, the disturbed habitat consists of the road shoulders of Brandt Road, dirt roads, and staging and storage areas associated with agricultural operations. The disturbed habitat is predominantly devoid of vegetation, with some scattered big saltbush (*Atriplex lentiformis*) and burrobush (*Ambrosia salsola*) and weedy species including Bermuda grass (*Cynodon dactylon*), London rocket (*Sisymbrium irio*), and purslane (*Portulaca oleracea*). Agriculture consists of active agricultural fields used for row crops in the northeast, southeast, and southwest portions and an area that has been recently disked and is currently devoid of vegetation in the southeast portion.

Potential burrows are defined as any subterranean hole greater than 4.3 inches (11 centimeters) for which no evidence is present to conclude that the burrow is being used or has been used by an owl in the past three years (i.e., showed no sign of recent use such as pellets, feathers, or whitewash). Both natural potential burrows (i.e., rodent burrows and erosional features) and man-made structures suitable for nesting (i.e., piles of wood and debris with cavities) were identified within the burrowing owl survey area (Photographs 3 and 4). A total of four potential burrows were identified within the burrowing owl survey area but outside of the project site.

One occupied burrow was observed outside of but adjacent to the burrowing owl survey area (see Figure 3). A total of two western burrowing owl individuals, presumably a pair, were observed perched on a berm adjacent to the occupied burrow during breeding season survey #4 on June 26, 2025 (see Figure 3). No occupied burrows or western burrowing owls were identified within the project site.

If you have any questions concerning the contents of this letter, please contact Chelsea Polevy at (619) 308-9333 extension 198 or at cpolevy@reconenvironmental.com.

Sincerely,

Chelsea Polevy

Chelsea Polevy
Associate Biologist

cc: Lily Mu, California Department of Fish and Wildlife
Ashley Rosales, California Department of Fish and Wildlife
Magdalena Rodriguez, California Department of Fish and Wildlife

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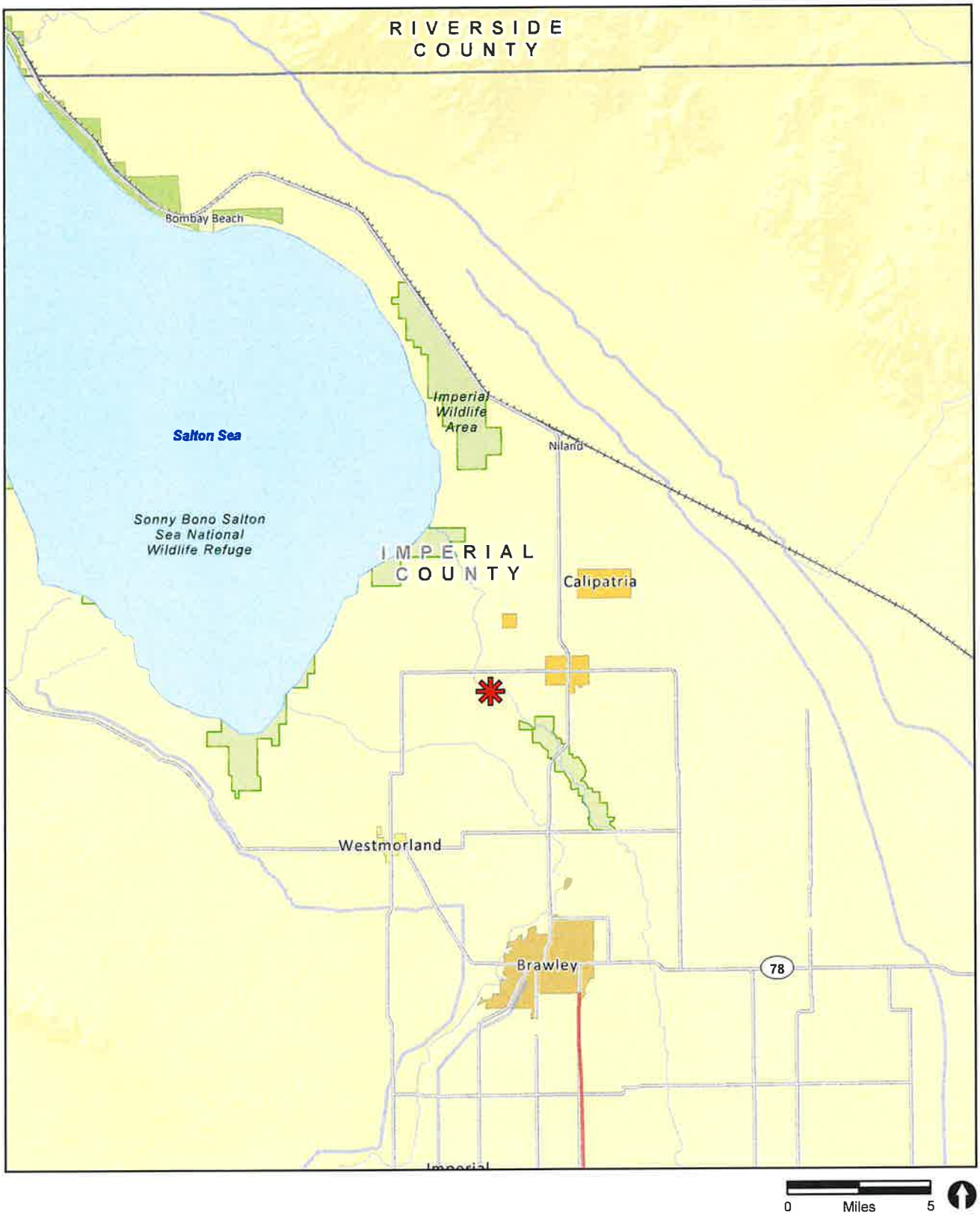
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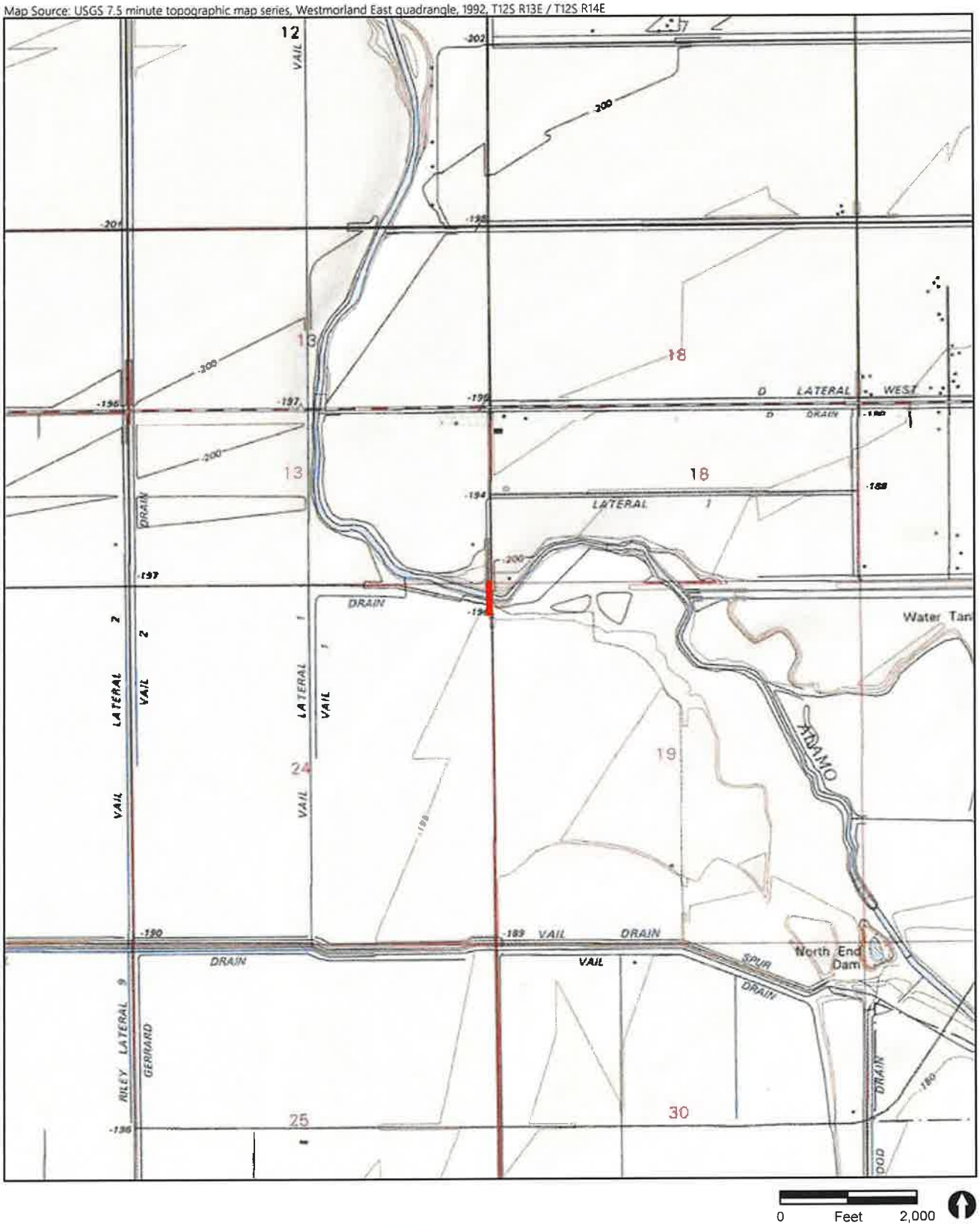


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FIGURE 1
Regional Location

Map Source: USGS 7.5 minute topographic map series, Westmorland East quadrangle, 1992, T12S R13E / T12S R14E



Project Site

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FIGURE 2
Project Location on USGS Map

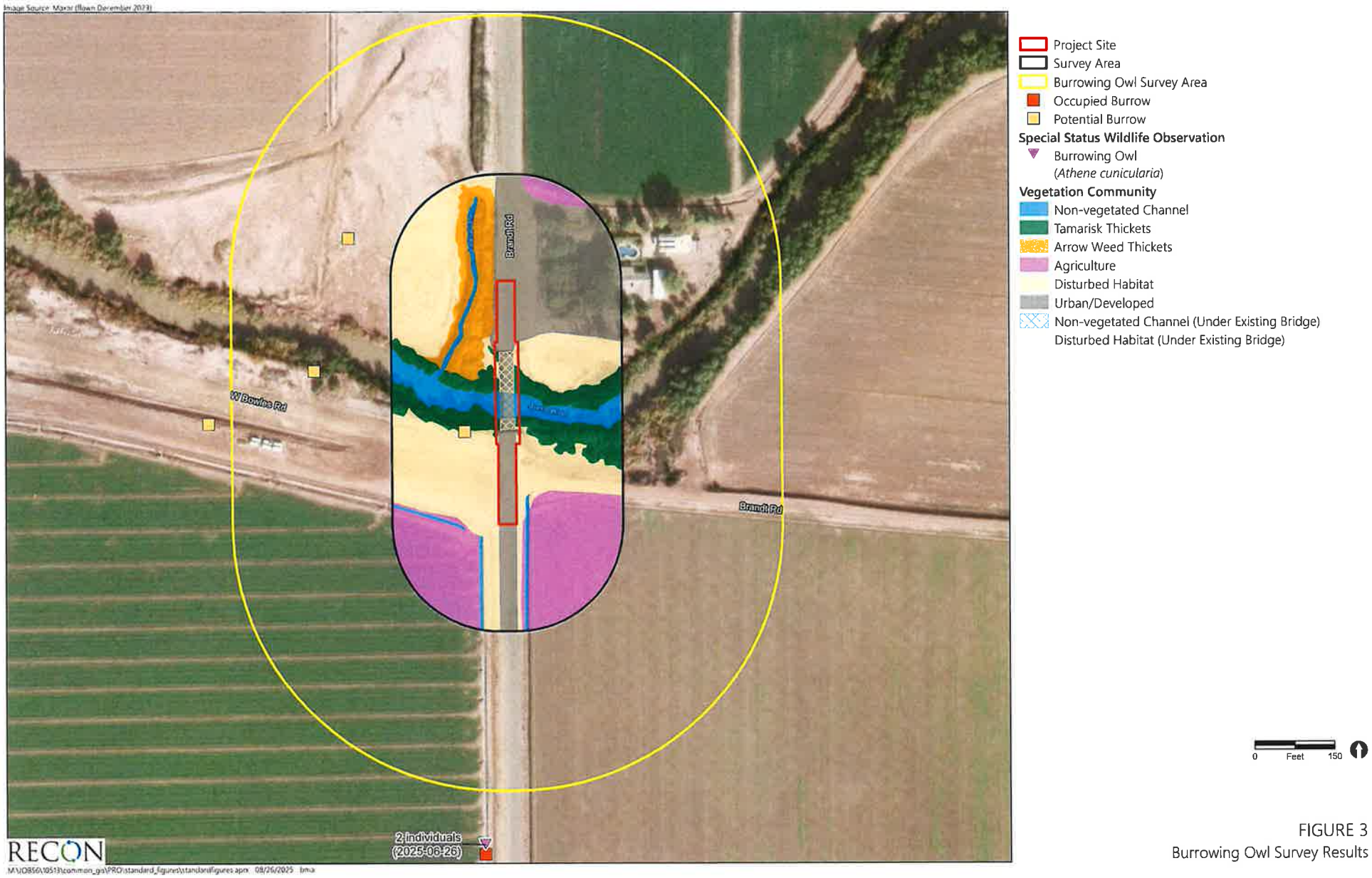


FIGURE 3
Burrowing Owl Survey Results



PHOTOGRAPH 1
View of Suitable Habitat within Burrowing Owl Survey Area



PHOTOGRAPH 2
View of Suitable Habitat with Burrowing Owl Survey Area



PHOTOGRAPH 3
View of Potential Burrow within Burrowing Owl Survey Area



PHOTOGRAPH 4
View of Wood Pile with Cavities Suitable for Nesting within Burrowing Owl Survey Area

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September 23, 2025
Kleinfelder Project No. 25001840.001A

Mr. Rober Urena III, PE
Imperial County Department of Public Works
155 S. 11th Street
El Centro, California 92243

SUBJECT: **Foundation Report**
Plans, Specifications, and Estimates (PS&E) Phase
Brandt Road Bridge Replacement Over Alamo River
Calipatria, California

Dear Mr. Urena:

Kleinfelder is pleased to present this Foundation Report (FR) for the Brandt Road Bridge Replacement over Alamo River located in Calipatria, California. This report includes foundation recommendations for the proposed replacement bridge and evaluations of the associated improvements such as approach fills and retaining walls for the construction of the project.

We appreciate this opportunity to be of service and look forward to continuing to work with you in the future. If you have any questions about this report or need additional services, please contact us at 619.831.4600.

Respectfully submitted,

KLEINFELDER

Annika Briggs, EIT
Staff Engineer

Spencer Floyd, PE
Geotechnical Engineer

Kevin Crennan, PE, GE
Principal Engineer

Melissa Stayner, CEG
Principal Engineering Geologist

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FOUNDATION REPORT
PLANS, SPECIFICATIONS, AND ESTIMATES (PS&E) PHASE
BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA
KLEINFELDER PROJECT NO. 25001840.001A

SEPTEMBER 23, 2025

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A Report Prepared for:

Mr. Rober Urena III, PE
Imperial County Department of Public Works
155 S. 11th Street
El Centro, California 92243

FOUNDATION REPORT
PLANS, SPECIFICATIONS, AND ESTIMATES (PS&E) PHASE
BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA

Prepared by:

Annika Briggs, EIT
Staff Engineer

Spencer Floyd, PE
Geotechnical Engineer

Reviewed by:

Melissa Stayner, PG, CEG
Principal Engineering Geologist

Kevin Crennan, PE, GE
Principal Engineer

KLEINFELDER
770 First Avenue, Suite 400
San Diego, California 92101
Phone: 619.831.4600
Fax: 619.232.1039

September 23, 2025
Kleinfelder Project No. 25001840.001A

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1 INTRODUCTION

The Imperial County Department of Public Works (County) has retained Kleinfelder to provide geotechnical engineering services for the Plans, Specifications, and Estimate (PS&E) phase of the Brandt Road Bridge Replacement project (Project). The Project will replace the existing bridge along Brandt Road over the Alamo River located west of the city of Calipatria, California. The purpose of this Foundation Report (FR) is to provide evaluation of site-specific subsurface conditions and potential geologic and seismic hazards and to provide foundation recommendations for final foundation design for the proposed replacement bridge. This FR is prepared in general accordance with Caltrans' Foundation Report Guidelines (Caltrans, 2024). It should be noted that Kleinfelder previously prepared a Preliminary Foundation Report (PFR), dated April 2, 2025, for the project. This FR supersedes the conclusions and recommendations provided in the PFR.

1.1 SCOPE OF WORK

The purposes of this FR are to present the results of our geotechnical field investigation, evaluate the subsurface conditions at the site, evaluate potential geologic/seismic hazards, perform geotechnical engineering evaluations, and provide foundation and other geotechnical recommendations for design and construction of the proposed project.

Specifically, the scope of services for this study included the following:

- Review of readily available geotechnical and geologic information including published geologic maps, topographic maps, aerial photography, previous and nearby geotechnical reports, and as-built drawings;
- Coordination and oversight of utility clearance surveys, traffic control, and exploration locations;
- Coordination and oversight of four exploratory borings;
- Coordination and oversight of PS Suspension Logging;
- Performing laboratory testing on collected soil samples from the borings;
- Preparation of this FR which includes the following:
    - A description of the existing site and proposed project improvements including a site vicinity map and a site plan showing the proposed project improvements and approximate locations of current field explorations;

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- Discussion of field exploration methods, logs of borings, and laboratory test procedures and results;
- Discussion of the regional geologic and seismic setting and potential geologic and seismic hazards at the site including liquefaction and lateral spreading potential;
- Discussion of the site and subsurface conditions observed during the field investigation including surface water and groundwater observations;
- Discussion of soil corrosivity properties affecting below-grade concrete and steel;
- Discussion of expansive materials and scour potential at the structure locations;
- Seismic design parameters in accordance with the California Department of Transportation (Caltrans) 2025 Seismic Design Criteria (Version 2.1) (Caltrans, 2025a) and Caltrans Geotechnical Manual (Caltrans, 2022);
- Bridge deep foundation recommendations including axial pile capacities for Cast-in-Drilled-Hole (CIDH) foundations and soil parameters for lateral pile capacity analyses;
- Recommendations for abutment walls including lateral earth pressures and global stability;
- Approach fill recommendations including pavement design and settlement;
- Recommendations for approach Mechanically Stability Earth (MSE) retaining walls including bearing capacity, settlement, lateral earth pressures, and global stability;
- Pavement design recommendations; and
- Discussion of construction recommendations including:
  - General earthwork recommendations including subgrade preparation and fill placement and compaction;
  - Recommendations for temporary excavations and shoring;
  - Recommendations for permanent site slopes;
  - Shallow foundation construction recommendations;
  - Bridge CIDH pile construction recommendations;
  - Pavement construction recommendations; and
  - Construction monitoring recommendations.

The recommendations contained within this report are subject to the limitations presented in Section 8.

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1.2 PROJECT DATUM

Unless otherwise noted, elevation data presented in this report is referenced to the survey completed by Dynamic Consulting Engineers (DCE), Inc. (DCE, 1999), which follows the North American Vertical Datum of 1988 (NAVD88) and adds 1,000 feet. To maintain consistency with the project team's elevation reference, all elevations presented within this report (unless otherwise noted) represent NAVD88 + 1,000 feet.

1.3 EXISTING SITE CONDITIONS

The Brandt Road Bridge Replacement project site is located approximately 3 miles west of Calipatria, California, crossing over the Alamo River which flows from the south and discharges into the Salton Sea to the northwest. The existing Brandt Road Bridge (Br. No. 58C0165) was originally constructed in 1950 and is approximately 150 feet long and 24 feet wide.

Based on our review of the project drawings (Kleinfelder, 2025c) and the topographic survey (DCE, 1999), the site limits extend from approximately 200 feet north of the northern end of the bridge (approximate Station 13+00), to approximately 200 feet south of the southern end of the bridge (approximate Station 7+50), just south of the intersection of Bowles Road and Brandt Road. The existing bridge structure extends from approximate Station 11+00 at the northern end to approximate Station 9+50 at the southern end. The general site vicinity is shown in Figure 1, Site Vicinity Map and the existing conditions of the site are provided in Figure 2, Existing and Proposed Conditions and Exploration Location Plan. The coordinates of the approximate center of the bridge structure are:

Latitude: 33.1179 °N Longitude: 115.5626°W

The project site is bounded by the on-grade, asphalt-paved portion of Brandt Road which eventually intersects with West Eddins Road to the north and Bowles Road to the south. A residential house is located on the Alamo River just northeast of the project site. At the southern and northern areas of the bridge, existing grades of the bridge deck sit at +807 feet with slopes descending to the river to an approximate elevation of +794 feet. Both the southern and northern slopes down to the river have approximate inclinations of 1 horizontal to 1 vertical (1H:1V). The surfaces of these slopes are covered with some vegetation for erosion control. Outside of the existing bridge limits, asphalt concrete (AC) pavement exists along the on-grade approach roadway along Brandt Road.

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Based on our site reconnaissance and review of the project survey, overhead power lines run along the western portion of Brandt Road, running parallel with the bridge and crossing over the river, as well as perpendicular to the bridge alignment just south of the existing bridge. An underground communication line was also found running along the western portion of the road.

The existing conditions of the project site are presented on Figure 2.

1.4 EXISTING STRUCTURE CONDITIONS AND AS-BUILT DATA

Based on review of available design drawings, the existing bridge, which was constructed in 1950, replaced the original bridge structure that was damaged during a 1948 flood event (County of Imperial, 1948). It should be noted that elevations referenced in the 1948 drawings are considered relative due to an undefined vertical datum.

Original drawings indicate the existing 9-span bridge is supported by two abutments and eight piers. The piers are spaced along the bridge alignment at 15-foot intervals, with each pier supported by five 18-inch-diameter timber piles. The abutments are each supported by six 18-inch-diameter timber piles. As indicated in the original drawings, pile installation depths were proposed to range from approximately 40 to 56 feet primarily for cost estimating purposes. It should be noted that as-built information for the bridge and pile lengths are currently unknown. A summary of the existing foundation data is provided in Table 1.

Table 1: Summary of Existing Foundation Data

Location	Foundation Type	No. of Piles at Each Support	Approx. Bottom of Pile Cap Elevation[1] (1948 Datum)	Approx. Tip Elevation[1] (1948 Datum)
Abutments	18-inch-diameter Timber Piles	6	+95 ft	+55 ft
Bents	18-inch-diameter Timber Piles	5	+95 ft	+40 ft

Notes:
1. Elevations are approximate as bottom of pile cap elevations and pile lengths are provided on the original drawings but were indicated to be for cost estimating purposes only.

1.5 PROJECT DESCRIPTION

Based on our review of Kleinfelder's Bridge Strategy Report (BSR) and DRAFT 90% Design Plan Set, dated March and September 2025 respectively, the proposed bridge replacement will feature a single-span variable depth girder bridge. The proposed bridge will have an approximate total length of 115 feet, measured from the beginning of bridge (BB) to the end of bridge (EB).

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Each abutment will be supported by six 4-foot-diameter Cast-In-Drilled Hole (CIDH) concrete piles. These piles will be spaced at 12 feet on-center along the width of the pile cap and 16 feet on-center along its length. The pile caps are proposed to be 18-foot-wide by 38-foot-long, bearing at elevations of +786.5 and +783.75 feet for Abutments 1 and 2, respectively. The proposed depths are based on the subsurface conditions, scour depth, geotechnical and structural capacities, and structural loads.

We understand that the width of the proposed bridge structure will be approximately 36 feet and will be constructed in a single-staged system. Therefore, complete closure of the bridge is needed for the entire period of demolition of the existing bridge and construction of the new bridge. We understand there is an existing electrical conduit along the west edge of the bridge that, as part of construction, will be suspended from the new bridge deck. Additionally, we anticipate that new bridge construction won't affect the operation of the electric overhead lines. Finally, we understand the existing abutment pile caps and wood piles will be abandoned in place due to the considerable cost of removal. However, as noted in the 90 percent design plans, one Abutment 2 pile is proposed at the location of an existing wood timber pile. It is recommended that where existing timber piles conflict with the proposed deep foundations, they be entirely removed.

Based on discussions with the project team and review of the Bridge Strategy Report (BSR), the design storm elevation for the project is approximately +801 feet, corresponding to the 25-year storm event plus 2 feet of freeboard.

Review of the in-progress 90 percent design drawings indicates that final site grades will be raised up to approximately 14 feet in height along the northern approach. Therefore, retaining walls consisting of Mechanically Stabilized Embankment (MSE) walls are proposed along both sides of the northern approach. The proposed MSE walls will have design heights of approximately 13½ and 16 feet with the tallest portion of the wall and highest fill height located at the interface with the bridge abutment. The top of leveling pad (TOLP) elevations will be +791.5 feet for the 16-foot-tall wall and +794 feet for the 13½-foot-tall wall. Corresponding top of wall (TW) elevations will range from +807.28 to +807.13 feet. A concrete barrier slab will also be incorporated into the MSE wall construction. These MSE walls will extend from the edges of Abutment 2 along the on-grade portion of Brandt Road, approximately 49 feet on the northwest side and 35 feet on the northeast side of the bridge approach. Approach fills in this area are proposed to be highest at the edge of Abutment 2 and will extend 40 feet to the north to meet existing grade.

For the southern approach, as indicated in the project drawings and BSR, Abutment 1 will feature Caltrans Standard cantilever reinforced concrete wingwalls. We understand proposed grades along the Abutment

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1 approach will match existing grades and that minimal earthwork is proposed along this southern approach.

To construct the proposed MSE walls and abutment structures, the existing asphalt pavement along the on-grade portion of Brandt Road within the site limits will be demolished. Upon completion of fill placement, the on-grade surficial pavement will be replaced with new AC pavement.

We understand that new permanent slopes below the existing bridge in front of the proposed abutments are planned to be approximately 2H:1V based on the in-progress 90 percent grading plans. Temporary cut slopes will be required for the removal of portions of the existing bridge abutment walls and for re-direction of existing utilities at the site.

1.6 EXCEPTIONS TO POLICIES AND PROCEDURES

No exceptions to Caltrans policies or procedures were taken for the preparation of this report.

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2 FIELD INVESTIGATION

Our geotechnical investigation consisted of review of available information, performing four exploratory borings, PS suspension logging, and laboratory testing. Two deep borings were performed near the existing bridge abutments and two shallow borings for roadway design were performed approximately 50 feet north and south of the existing abutments. Laboratory testing was also performed for our geotechnical investigation and is discussed in the subsequent sections. The approximate locations of the borings performed by Kleinfelder are shown on Figure 2, Existing and Proposed Conditions and Exploration Location Plan.

2.1 SUBSURFACE EXPLORATIONS

2.1.1 Borehole Explorations

The exploratory borings, designated as B-1 through B-4, were drilled by Pacific Drilling Co. between September 17th and September 20th, 2024 using a truck-mounted drill rig equipped with 6-inch outer-diameter hollow stem augers and a 4-inch-diameter tri-cone roller bit. Bulk samples and relatively undisturbed driven samples were collected at approximate 2½-foot or five-foot intervals throughout the depth of each boring using both a 2½-inch outside-diameter modified California sampler and a 2-inch outside-diameter, 1-3/8-inch inside-diameter standard penetration test (SPT) sampler. Each sampler was driven 18 inches or until practical refusal and blow counts were recorded for each 6-inch penetration interval.

Shallow borings B-2 and B-3, located along the roadway approach, were completed using hollow stem auger (HSA) techniques to a termination depth of approximately 5 feet below ground surface (bgs), or approximate elevations of +802 and +802½ feet, respectively.

Borings B-1 and B-4, located near the existing abutments, and were completed using HSA techniques in the upper materials to a depth of approximately 20 feet bgs before converting to rotary wash drilling techniques. Borings B-1 and B-4 were extended to termination depths of approximately 121½ and 141½ feet bgs, or approximate elevations of +686 and +666 feet, respectively.

A summary of the boring explorations, including boring locations and depths explored, is presented in Table 2. The geotechnical boring logs are presented in Appendix A, Borehole Logs. The subsurface conditions encountered during drilling are summarized in Section 3.2 of this report.

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Table 2: Boring Summary

Boring No.	Location (Approx. Station)	Completion Date	Approx. Ground Surface Elev. (ft, NAVD88+1000')	Drilled Depth (ft)	Measured Groundwater Elevation (ft, NAVD88+1000')
B-1	North Abutment (11+50)	9/18/2024	+807	121½	+772
B-2	Northern Approach (11+50)	9/18/2024	+807	5	N/A
B-3	Southern Approach (8+50)	9/18/2024	+807½	5	N/A
B-4	South Abutment (9+00)	9/20/2024	+807½	141½	+772

Notes: N/A = Not Applicable

2.1.2 PS Suspension Logging

Upon completion of drilling borehole B-4, GeoVision performed PS Suspension logging using an OYO PS Suspension logging system to record shear (S-wave) and compression (P-wave) velocities. A suspension system probe equipped with two receivers (one shear and one compression) determined the average wave velocity by measuring the travel time between these two receivers. The total length of the probe was approximately 122 feet, with the center point of the receiver approximately 12½ feet above the bottom of the hole. The probe was suspended on a cable that was lowered down the B-4 borehole in 1.6-foot intervals to gather the data. The results of the PS Suspension Logging are presented in GeoVision's report provided in Appendix B, PS Suspension Velocities.

2.2 LABORATORY TESTING

A laboratory testing program was conducted to substantiate field classifications and evaluate selected physical characteristics and engineering properties of the soils encountered. Moisture content, unit weight, Atterberg Limits, sieve analyses, corrosion, direct shears, and R-Value tests were performed in general accordance with the applicable ASTM or Caltrans test methods. Results of the laboratory testing program are presented in Appendix C, Laboratory Test Results.

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3 GEOTECHNICAL CONDITIONS

3.1 REGIONAL SETTING

Our geologic evaluation consisted of reviewing available aerial photographs, topographic maps, and geologic maps along with observation of the existing site conditions during our subsurface investigation. The results of the evaluation are included in the subsequent sections.

3.1.1 Soil Survey

Based on our review of the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) web soil survey results (accessed January 2025), the surficial deposits at the site consist of Indio loam to the south of the bridge and Vint and Indio very fine sand loams to the north of the bridge.

Indio loam is reported to primarily consist of loamy very fine sand, loam, and silt loam having a hydrologic soil group C, low runoff class, and moderately low to moderately high infiltration capacity. Vint and Indio very fine sand loams are reported to have a very low runoff class but are reported as hydrologic soil group A/D and high to very high infiltration capacity.

3.1.2 Geologic Setting

The site is located within the Colorado Desert Geomorphic Province (CGS, 2002). This province is situated between the Peninsular Ranges to the west and the southern extension of the Mojave Desert to the east. It is a low-lying barren desert at 245 feet below sea level and is dominated by the Salton Sea. Historically, the Colorado River, which runs from Colorado and through the Grand Canyon, had long delivered its heavy load of sediment to the Gulf of California. As the exact location of sediment deposition shifted back and forth over time, the subsequent river delta eventually grew large enough to block off the Gulf and prevent seawater from reaching California. There are multiple historical occurrences of the lower Colorado River changing course, which sent water and sediment north of this blockage instead of south. This resulted in a series of large freshwater lakes that eventually evaporated, including Lake Cahuilla. Ancient beach lines and silt deposits from the extinct lake still dominate the local geomorphology.

The province is characterized by abundant tectonic activity. This activity is primarily driven by the southern portion of the San Andreas fault as well as the northernmost extensions of the East Pacific Rise, a mid-

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oceanic ridge which runs the length of the Gulf of California. The East Pacific Rise is a major rift zone between plate boundaries; based on seismic activity, this rift appears to be advancing northward into the Colorado Desert. The transition between rift and fault environments causes this area to be one of the most seismically active places in the state.

The project site is located within the ancient Lake Cahuilla lakebed, southeast of the Salton Sea. It is underlain by late Pleistocene-age lakebed deposits. These deposits are shown in Figure 3, Regional Geologic Map.

3.1.3 Tectonic Setting

California is one of the most tectonically active areas of the United States. The high seismicity of California is attributed to the fact that the state straddles the boundary of two global tectonic plates known as the North American Plate (on the east) and the Pacific Plate (on the west). The main plate boundary fault is defined by the San Andreas fault which crosses through some of the most densely developed areas of both Southern and Northern California. This fault stretches northwest from the Gulf of California in Mexico, through the desert region of the Imperial Valley, crossing the San Bernardino region, and traversing up into northern California, where it eventually trends offshore near San Francisco (Jennings, 1994; Jennings & Bryant, 2010). Within Southern California, the plate boundary is actually a complex system of numerous faults known as the San Andreas Fault System (SAFS) that spans a 150-mile-wide zone from the main San Andreas fault in the Imperial Valley, westward to offshore of San Diego (Powell et al., 1993; Wallace, 1990).

The major faults west and south of the site include the San Jacinto and Imperial faults. The Brawley Seismic Zone runs the closest to the site, approximately two miles west, containing the greatest impact on the site. The Mecca Hills fault zone runs north of the site, along the northern portion of the Salton Sea. The most dominant zone of active faulting within the Imperial region is the Brawley Seismic Zone (BFZ).

Greater than 5.0 mm/yr of overall lateral displacement has been measured geodetically as fault slip across these plate boundaries. The Brawley Seismic Zone combined accounts for up to approximately 25 mm/yr of the total plate displacement (83 percent), meaning that the remaining 17 percent is accommodated from point sources to the west and to the south of the project site (Treiman, 1999a). Studies within Imperial Valley, south of the site, have revealed fault strands that have displaced soil horizons with slip rates from 15 to 20 mm/yr (Treiman, 1999a).

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The BSZ is a connection zone to the San Andreas and Imperial faults and is composed of predominately right-lateral strike-slip faults that trend mainly north. To the south, past the town of Brawley, the Imperial fault appears to splay out into a group of generally right-normal oblique faults extending into Mexico (Treiman, 1999b). The locations of this and other nearby faults with respect to the site are shown in Figure 4, Regional Fault Map and Earthquake Epicenters.

3.2 SURFACE AND SUBSURFACE CONDITIONS

Geologic units observed in the borings consist of artificial fill over lakebed deposits. The aerial extent of these geologic units is depicted on the regional geologic map in Figure 3. Existing AC pavement caps the fill soils at the surface along the approaches on both the north and south sides of the bridge. The bridge deck is paved with AC pavement overlying a laminated timber deck slab with approximately 20 to 30 feet of space between the bottom of the bridge deck and mudline allowing for surficial water level changes within the Alamo River channel and storm surges. Detailed descriptions of these units are provided on the boring logs in Appendix A and generalized descriptions are provided in the subsequent sections.

3.2.1 Surficial Pavement and Aggregate Base

Asphalt concrete (AC) was encountered at the surface of borings B-2 and B-3 performed for our study. The pavement section at both locations was measured to be approximately 3½ inches of AC over 8 inches of aggregate base.

3.2.2 Artificial Fill (af)

Artificial fill soils were encountered either at the surface in the borings performed outside of the roadway (B-1 and B-4) or within the roadway underlying the surficial pavement (B-2 and B-3). The fill material generally consists of yellowish red to brown silty sand and sandy silt with gravel. The fill materials appear to be derived of the onsite lakebed deposits and; therefore, the transition from the fill materials to the underlying natural deposits is difficult to precisely identify in the borings. However, it is estimated that the fill materials are likely not thicker than approximately 5 feet at the locations our borings were advanced.

Based on our review of previous plans (County of Imperial, 1948), the artificial fills were likely placed for the existing bridge embankments, and it is possible that different depths of fill may be present beyond our exploration locations. No earthwork reports were available for our review documenting placement and/or compaction of the fill; therefore, the existing fill at the site is considered undocumented.

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3.2.3 Lakebed Deposits (Ql)

Lakebed deposits were encountered underlying the fill materials and extended to the termination depths of the borings. The lakebed deposits generally consist of interbedded brown and gray fat and lean clay, silty sand, clayey sand, poorly graded sand, sandy silt, and silt. Field SPT N-values (corrected for sampler only) generally range from 12 to greater than 50 blows per foot (bpf) for coarse-grained materials and 3 to 42 bpf for fine-grained layers, corresponding to medium dense to very dense and very soft to hard materials, respectively. Additionally, field pocket penetrometer values for the fine-grained layers within the lakebed deposits generally ranged from approximately ¼ to 2½ tons per square foot (tsf).

3.3 UNSUITABLE MATERIALS

3.3.1 Expansive Soils

Expansive soils are characterized by their ability to undergo significant volume changes (shrink or swell) due to variations in moisture content. Changes in soil moisture content can result from precipitation, landscape irrigation, utility leakage, perched groundwater, drought, or other factors and may result in unacceptable settlement or heave of structures or pavements supported on grade.

Based on the results of our field investigation and visual soil classifications, it is our opinion that the silty sand and sandy silt soils of the artificial fills and lakebed deposits within the upper 5 to 10 feet of the ground surface generally have a very low to low expansion potential. Isolated zones of more expansive soil may also be encountered near the surface but are not anticipated.

3.3.2 Compressible Soils

Compressible soils are materials that are prone to a reduction in volume when subjected to loading from structures or fill placement or due to significant changes to moisture content. Compressible soils may result in significant settlements when subjected to high loads. Soils prone to compression in the project site area include the existing undocumented fill and upper cohesive layers of the lake bed deposits. Based on the results of our field investigation, the project area is considered to be moderately compressible.

The use of deep foundations at the proposed bridge abutments embedded to a sufficient depth within the lake bed deposits will allow for the transfer of structural loads below the compressible site soils. MSE retaining walls for the northern approach embankment can accommodate the range of anticipated static settlements and do not require deep foundations or mitigation measures for static loading. However, we

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understand that bridge approach embankment fills will be placed following the installation of Abutment 2 piles which are anticipated to cause undesirable static settlements of the compressible soils resulting in static downdrag loading on deep foundations at the proposed Abutment 2 piles. As discussed in Section 5.2, this static downdrag loading from the proposed bridge approach embankment construction is considered in the design of the abutment piles at this location.

Furthermore, the embankment fill loadings and corresponding consolidation settlements may also cause undesirable static settlements of the surficial approach pavements, barriers, wall facings, and other improvements. Mitigation of these undesirable static settlements may be performed through settlement waiting periods or ground improvement. Further discussions on anticipated static settlements of the embankment and settlement waiting periods are provided in Section 5.3.2.

3.4 SURFACE WATER AND GROUNDWATER

Groundwater was not measured during drilling of borings B-1 and B-4 given they were converted to mud rotary at approximately 20 feet bgs, making it difficult for an accurate measurement of groundwater. PS logging was performed at B-4, where groundwater was estimated by Geovision to be approximately 30 feet bgs, or an approximated elevation of +777 feet; however, Kleinfelder personnel measured the existing water surface in the channel to be about 25 feet below the bridge deck surface, or at an approximate elevation of +782 feet. Based on conversations with the design team, it is our understanding that water levels within the Alamo River at the site stay relatively consistent throughout the year.

Numerical groundwater flow modeling was conducted by the project hydraulic engineer (Kleinfelder, 2025b) to assess the effect or impact of the proposed improvements on the water surface level. The provided results of the groundwater modeling show that the proposed design does not result in an increase in the water surface. Furthermore, the reported 2-year design storm elevation for the project is estimated to be +782 feet as provided by the project hydraulic engineer. Based on this 2-year storm elevation, the observed surface water level at the site during our investigation, and discussions with the design team, a static design groundwater elevation of +782 feet is considered for design.

The flood hazard potential for the site was evaluated based on the Federal Emergency and Management Administration (FEMA) Flood Insurance Rate Maps (FIRM). These maps identify areas that may be subject to flood events. According to FEMA FIRM 06025C1025C dated September 26, 2008, the site is located within a regulatory flood hazard area with no base flood elevations determined. We understand that a temporary design flood elevation of +801 feet is used which corresponds to a 25-year event plus two feet of freeboard.

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3.5 SCOUR POTENTIAL

Scour is the loss of ground by erosion in flowing water environments caused by changes in flow volume, velocity, or direction. Scour can occur over the width of the stream or riverbed and can be concentrated at locations in which hard protrusions occur in a riverbed, such as at an abutment. The Alamo River channel may scour during high flow events and could be impacted by the construction of the new bridge abutments.

We understand that rip-rap slope protection will be placed at the abutment slopes to protect the abutment from surficial erosion and scour, similar to the existing condition at the site. For the bridge abutments, the hydraulic engineer has estimated general (long-term) scour elevation at peak flow assuming a 100-year flood event reaches elevation +760.11 feet, as shown in Table 3.

For local scour, the 100-year flood event was used to estimate scour depths ranging from 7.07 to 17.64 feet in depth, as shown in Table 3. However, following discussions with the bridge designer, due to presence of rip rap we understand that scour is not considered for the design of the bridge support structures.

Table 3: Scour Data

Support Location	Long Term Scour (Degradation and Contraction) Elevation (ft, NAVD88+1000')	Short Term Scour (Local) Depth (ft)
Abutment 1	+760.11	7.07
Abutment 2	+760.11	17.64

3.6 CORROSION EVALUATION

Laboratory corrosive soil screening of the on-site soils was performed on samples collected from the B-4 boring to evaluate the potential corrosion on concrete and ferrous metals. The results of the testing are presented in Table 4 and included in Appendix C.

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Table 4: Corrosion Test Results

Boring	Approx. Sample Elevation (ft, NAVD88+1000')	Minimum Resistivity (ohm-cm)	pH	Sulfate Content (ppm)	Chloride Content (ppm)
B-4	+806½ to +801½	110	7.9	600	3,520
B-4	+797½	N/A	8.1	6,600	3,740
B-4	+792½	N/A	8.2	1,080	1,340
B-4	+787½	N/A	8.5	230	160

Notes: N/A=Not applicable, test was not performed.

Caltrans Corrosion Guidelines (Caltrans, 2021b) and the Corrosion Evaluation module of the Caltrans Geotechnical Manual considers the subsurface conditions at a site to be aggressive to below-grade concrete if one or more of the following conditions exist for the representative soil samples taken at the site: chloride concentration is 500 parts per million (ppm) or greater, sulfate concentration is 1,500 ppm or greater, or the pH is 5.5 or less. Since resistivity serves as an indicator parameter for the possible presence of soluble salts, it is not included as a parameter to define a corrosive area for structures per Caltrans.

Based on the Caltrans criteria, the near-surface artificial fills and underlying lakebed deposits are considered to be aggressive to below-grade metals or concrete. Based on these test results, buried metal and concrete elements should be designed for corrosive conditions in accordance with applicable sections of the AASHTO Bridge Design Specifications with California Amendments (8th Edition) and Caltrans Memos to Designers and Standard Specifications.

Corrosion test results should be reviewed and evaluated by the project designers considering the proposed improvements and project lifespan requirements. Kleinfelder does not practice corrosion engineering and the purpose of our tests is only to provide a screening. A qualified corrosion engineer should be contacted for detailed evaluation of corrosion potential with respect to construction materials at this site and the proposed design.

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4 GEOLOGIC HAZARDS

Kleinfelder has reviewed the site with respect to potential seismic hazards. This evaluation is based on review of available geologic maps, aerial photographs, topographic maps, hazard maps, our geologic site reconnaissance, borings, laboratory data, and engineering analyses. Potential seismic hazards considered in our study include surface fault rupture, seismic shaking, liquefaction and seismically induced settlement, lateral spreading, and seismic slope instability. The following sections discuss these hazards and their potential at this site in more detail.

4.1 GROUND MOTION HAZARD

As discussed in Section 3.1.3, the project site is located in a seismically active region. The most significant seismic event likely to affect the project site would be an earthquake resulting from rupture along the Brawley Seismic Zone, which is located approximately 2 miles west of the site.

Based on the results of the downhole PS suspension logging from our field investigation, the average shear wave velocity in the upper 100 feet (30 meters) of the soil profile, deemed the V_{S30} value, is estimated to be approximately 669 ft/s (204 m/s). This V_{S30} value corresponds to a Soil Profile Type D based on Caltrans Seismic Design Criteria (SDC) V2.1 (Caltrans, 2025a). Soil Profile Type D is defined as a stiff soil site with average shear wave velocities within the upper 100 feet of the soil profile between 600 and 1,200 ft/s, or an average field standard penetration resistance between 15 and 50 bpf.

As discussed in Section 4.2.2 of this report, there is a high liquefaction hazard present at the site; however, as noted in the Caltrans Seismic Design Criteria (SDC) V2.1 (Caltrans, 2025a), a site-specific dynamic ground response analysis (DGRA) is not required given that the proposed bridge is a single span structure. Ground motion parameters for the subject bridge are presented in Table 5.

Table 5: Ground Motion Parameters

Site Parameters			Design Ground Motion Parameters (Return Period=975 Years)			Soil Profile Class
Latitude (degrees)	Longitude (degrees)	Shear-Wave Velocity V_{S30} (m/sec)	Horizontal Peak Ground Acceleration (g)	Deaggregated Mean Earthquake Moment Magnitude for PGA	Deaggregated Mean Site-to-Fault Distance for 1.0 Second Spectral Acceleration (km)	Soil Profile Class
33.1179	-115.5626	204	0.88	7.0	2.49	D

Notes: 1. Based on Caltrans web tool ARS Online (Version 4.0).
2. Shear wave velocity determined by Geophysics.

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4.2 OTHER SEISMIC HAZARDS

4.2.1 Surface Rupture

As previously discussed in Section 3.1, the subject site is not underlain by any known active or potentially active faults. The closest active fault is the Brawley Seismic Zone which is located approximately 2 miles to the west of the site. The results of our site reconnaissance and review of historical aerial photography did not reveal indications of faults crossing the project site. Based on this, it is our opinion that the potential for ground rupture due to faulting at the site is negligible.

4.2.2 Liquefaction and Seismic Settlement

The term liquefaction describes a phenomenon in which saturated, cohesionless soils temporarily lose shear strength (liquefy) due to increased pore water pressures induced by strong, cyclic ground motions during an earthquake. Structures founded on or above potentially liquefiable soils may experience bearing capacity failures due to the temporary loss of foundation support, vertical settlements (both total and differential), and undergo lateral spreading. The factors known to influence liquefaction potential include soil type, relative density, grain size, confinement, depth to groundwater, and the intensity and duration of the seismic ground shaking. Liquefaction is most prevalent in loose to medium dense sandy and gravely soils below the groundwater table but can also occur in non-plastic to low plasticity fine-grained soil.

Based on the guidelines provided for liquefaction evaluation in the Caltrans Geotechnical Manual (Caltrans, 2020b), evaluations of potential liquefaction susceptibility based on groundwater level, deposit age, and soil composition were made according to the criteria of Youd et al. (2001), Boulanger and Idriss (2006), and Caltrans' Geotechnical Manual. It should be noted that based on these criteria, the lakebed deposits (Ql) were considered to have a low to medium liquefaction susceptibility based on the results of the liquefaction analysis.

For layers that met the compositional criteria, liquefaction triggering (factor of safety) analyses were performed using methodologies proposed by Youd et al. (2001). The analyses utilized blow count data from our boreholes. To perform liquefaction analysis, estimated earthquake magnitude (M_w) and peak ground acceleration (PGA) are needed. Liquefaction analyses were evaluated for a magnitude of 7.0 and a PGA of 0.88g based on Caltrans ARS Online V4.0 tool. A time-averaged shear-wave velocity in the upper 30 meters (V_{S30}) value of 204 meters per second (m/s) was used to estimate peak ground acceleration and mean moment magnitude based on the USGS 2023 deaggregation hazard data for a 975-year return period. A design groundwater elevation of +782 feet across the site was used for liquefaction analyses.

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4.2.2.1 Liquefaction Induced Settlements

Review of the available exploration data indicates that the lakebed deposits (Ql) are generally susceptible to liquefaction at the northern approach location due to groundwater and liquefaction susceptible granular materials as well as low-plasticity cohesive materials that are subject to cyclic softening. At Abutment 2, these liquefiable deposits range in depth from approximately 35 to 50 feet in depth bgs, or approximate elevations of +772 to +757 feet.

Liquefaction analysis included the entire length of the two deep borings; however, deposits deeper than 50 feet were not considered susceptible to liquefaction due to the overburden stresses, fines content, and plasticity of the fines.

Liquefaction-induced volumetric settlements were estimated using the methods of Tokimatsu and Seed (1987). Based on the results of our field explorations and the liquefaction analyses, the estimated liquefaction-induced settlements at the boring locations are summarized in Table 6 and presented in Appendix D, Calculations.

Table 6: Liquefaction Potential

Support	Liquefaction Zone Elevation (ft)	Estimated Liquefaction-Induced Settlement (in)	Liquefaction Zone Bottom Elevation (ft, NAVD88+1000')
Abutment 1	N/A	Negligible	N/A
Abutment 2	+772 to +757	2½	+757

Notes: N/A = Not Applicable

Another type of seismically induced ground failure that can occur because of seismic shaking is dynamic compaction, or seismic settlement. This phenomenon typically occurs in unsaturated, loose to medium dense granular material or poorly compacted fill soils. Given the fill soils consist of fine-grained materials and new fill will be compacted, the potential for seismic settlement is negligible.

4.2.3 Lateral Spreading

The active river channel geometry and underlying liquefiable soils at the project site present conditions where there is a potential for lateral spreading at the north approach at Abutment 2. Lateral spreading potential of the abutment and proposed final approach walls/slopes are assessed in accordance with Caltrans Memo to Designers (MTD) 20-15 methodology and the guidelines presented in Lateral Spreading

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Module of Caltrans' Geotechnical Manual (Caltrans, 2020c). Further details and results of the lateral spreading analysis at the bridge abutments are provided in Section 5.4.2.

4.2.4 Slope Instability and Landsliding

We evaluated slope stability hazard for the bridge abutments and approach walls/slopes at the project site. Details regarding the slope stability methodology and results for the proposed project improvements are provided in Section 5.3.3 and Section 5.4.2 of this report.

A landslide is a volume of material that progresses down a slope, typically as a deep-seated slope failure, usually caused by gravity, seismic activity, or human interference. Landslides have the ability to travel down slopes that are numerous miles long. Due to a relatively flat topography and limited slope height above the Alamo River, the potential for landslide hazard is considered to be low.

4.2.5 Tsunami Hazard

A tsunami is a giant sea wave usually generated by catastrophic displacement on a submarine fault. Tsunamis can travel at speeds of hundreds of miles per hour over distances of thousands of miles. In the open ocean, tsunamis have large wavelengths and are difficult to detect. As the sea wave approaches shore, the wave decreases in wavelength and increases in amplitude (height). Large tsunamis can travel well beyond the normal wave break of the shoreline and can cause damage to near-shore structures. The project site is located outside a mapped tsunami inundation area and therefore is not subject to tsunami potential.

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5 CONCLUSIONS AND RECOMMENDATIONS

Geotechnical engineering discussions, conclusions, and recommendations for design of the Brandt Road Bridge Replacement project are presented in the subsequent sections. These recommendations are in general conformance with the guidelines presented in Caltrans' Foundation Report Guidelines (Caltrans, 2024d) and cover the geotechnical recommendations pertinent to the project for the bridge structure, including foundation recommendations and recommendations for the bridge approaches.

5.1 MATERIAL STRENGTH PARAMETERS

Material strength parameters were developed for engineering analyses including foundation design, retaining wall design, and slope stability. Generalized soil engineering parameters and subsurface geometry used in the analyses were developed based on the results of our field investigation and laboratory testing.

For the slope stability analyses, ultimate strengths were used for long-term static and pseudo-static (i.e., seismic) analyses. Residual strengths were applied to materials identified as liquefiable in our seismic analyses to consider the significant loss of strength these soils experience following liquefaction. The soil materials were modeled using the Mohr-Coulomb failure criteria and undrained shear strengths. Liquefiable layers for seismic conditions were modeled using the liquefied residual shear strengths per Kramer and Wang (2015) in accordance with Caltrans' Memo to Designers 20-15 (Caltrans, 2017). Material strength parameters are provided in the Tables 7 and 8.

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Table 7: Material Strength Properties for Southern Approach (Abutment 1)

Layer Elevation (ft, NAVD88+1000')		Soil Description	γ_{total} (pcf)	Static Material Strength Parameters			Seismic Material Strength Parameters		
				Model	Static		Model	Pseudo-Static	
Top	Bottom				c' / Su (psf)	Φ'		c' / Su (psf)	Φ'
-	-	Structural Backfill	120	Mohr-Coulomb	0	34	Mohr-Coulomb	0	34
+807	+797	Existing Artificial Fill (af)	95	Undrained (Phi=0)	1,200	-	Undrained (Phi = 0)	1,200	-
+797	+787	Lake Beds (Ql) (Clay)	105	Undrained (Phi=0)	1,200	-	Undrained (Phi = 0)	1,200	-
+787	+777	Lake Beds (Ql) (Sand)	115	Mohr-Coulomb	0	33	Mohr-Coulomb	0	33
+777	+765.5	Lake Beds (Ql) (Clay)	110	Undrained (Phi=0)	2,000	-	Undrained (Phi = 0)	2,000	-
+765.5	+757	Lake Beds (Ql) (Sand)	120	Mohr-Coulomb	0	34	Mohr-Coulomb	0	34
+757	+707	Lake Beds (Ql) (Clay)	110	Undrained (Phi=0)	2,500	-	Undrained (Phi=0)	2,500	-
+707	+687	Lake Beds (Ql) (Sand)	125	Mohr-Coulomb	0	36	Mohr-Coulomb	0	36
+687	+677	Lake Beds (Ql) (Clay)	115	Undrained (Phi=0)	2,500	-	Undrained (Phi=0)	2,500	-
+677	+657	Lake Beds (Ql) (Sand)	130	Mohr-Coulomb	0	38	Mohr-Coulomb	0	38

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Table 8: Material Strength Properties for Northern Approach (Abutment 2)

Layer Elevation (ft, NAVD88+1000')		Soil Description	γ_{total} (pcf)	Static Material Strength Parameters			Seismic Material Strength Parameters			
				Model	Static		Model	Pseudo-Static		Residual Strength
Top	Bottom				c' / Su (psf)	Φ'		c' / Su (psf)	Φ'	Sr (psf)
-	-	Structural Backfill	120	Mohr-Coulomb	0	34	Mohr-Coulomb	0	34	-
+807	+787	Existing Artificial Fill (af)	95	Undrained (Phi=0)	500	-	Undrained (Phi = 0)	500	-	
+787	+781	Lake Beds (Ql) (Clay)	105	Undrained (Phi=0)	1,000	-	Undrained (Phi = 0)	1,000	-	-
+781	+772	Lake Beds (Ql) (Sand)	115	Mohr-Coulomb	0	33	Mohr-Coulomb	0	33	-
+772	+767	Lake Beds (Ql) (Clay)	110	Undrained (Phi=0)	1,200	-	Undrained (Phi = 0)	-	-	600
+767	+757	Lake Beds (Ql) (Sand)	120	Mohr-Coulomb	0	34	Undrained (Phi = 0)	-	-	800
+757	+711	Lake Beds (Ql) (Clay)	110	Undrained (Phi=0)	2,000	-	Undrained (Phi=0)	2,000	-	-
+711	+687	Lake Beds (Ql) (Sand)	125	Mohr-Coulomb	0	36	Mohr-Coulomb	0	36	-
+687	+677	Lake Beds (Ql) (Clay)	115	Undrained (Phi=0)	2,500	-	Undrained (Phi=0)	2,500	-	-
+677	+657	Lake Beds (Ql) (Sand)	130	Mohr-Coulomb	0	38	Mohr-Coulomb	0	38	-

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Strength parameters used for pile capacity analyses include liquefied residual shear strengths per Kramer and Wang (2015) in accordance with Caltrans' Memo to Designers 20-15 (Caltrans, 2017) for liquefiable layers. The recommended LPILE parameters for use in lateral pile capacity analyses (to be performed by the bridge designer) are included in Appendix D.

5.2 DEEP FOUNDATIONS

We understand that Cast-In-Drilled-Hole (CIDH) type piles were chosen for support of the abutments for the proposed replacement bridge due to their ability to support large loads. CIDH piles having a diameter of 4 feet at the abutments have been evaluated as requested by the project structural engineer. The subsequent sections provide a summary of our methodologies and results for development of pile resistance and corresponding tip elevations for the CIDH piles.

5.2.1 CIDH Pile Resistances

Nominal and factored axial pile capacities as a function of depth for the service and strength limit states (static condition) and the extreme event limit state (seismic condition) of the CIDH piles were estimated in accordance with the AASHTO LRFD Bridge Design Specifications with California Amendments (8th Edition) and the Caltrans Geotechnical Manual. Factored structural foundation loads and permissible settlement were provided by the structural engineer and minimum pile tip elevations were calculated for the various limit states.

Per the AASHTO LRFD Bridge Design Specifications with California Amendments (8th Edition), the depth-dependent beta method for granular soils (O'Neill and Reese, 1999) and alpha method for fine-grained soils (Brown et al., 2010) were used in the computer program SHAFT to obtain the nominal and factored pile capacities. Based on discussions with the structural engineer, tension is not applicable for this bridge design; therefore, uplift is not considered. Pile capacities include side resistance only for axial compression as end bearing resistance is neglected due to the proposed use of wet construction methods.

Service limit state structural loads were utilized to assess individual pile settlements using the load-settlement relationships per the AASHTO LRFD BDS (Caltrans, 2019). Corresponding pile tip elevations for settlement were based on maximum allowable settlements of 1 inch as provided by the structural engineer.

A LRFD resistance factor of 0.7 was used for the strength limit state and a LRFD factor of 1.0 was used for the service and extreme event limit states in accordance with the AASHTO LRFD BDS (Caltrans, 2019). It is

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our understanding that the CIDH piles will be constructed as part of a multiple row pile group with center-to-center spacing of three diameters or more. Given predominately cohesive materials present along the length of the proposed piles, the pile groups nominal bearing resistance were estimated as either the sum of the individual nominal resistances of each pile in the group, or the nominal resistance of an equivalent pier consisting of the piles and the block of soil within the area bounded by the piles per Section 10.7.3.9 of AASHTO LRFD BDS (Caltrans, 2019). The sum of the individual nominal resistances of each pile was determined to control.

Additionally, given the pile cap is proposed to be in firm contact with the ground, the spacing of the piles, the piles will be predominantly in clay materials, and the soil at the surface is stiff, no reduction in efficiency is required per AASHTO LRFD BDS (Caltrans, 2019).

Although CIDH piles may derive their load capacity by both end bearing and side friction if properly designed and carefully constructed, end bearing has been neglected in our analyses in accordance with Caltrans requirements as the CIDH piles will be constructed below groundwater. End bearing is neglected as it is not reliable to verify a properly cleaned-out bottom of the shaft when drilling below groundwater (i.e., wet construction method).

In addition to utilizing drilling fluid to stabilize CIDH shaft sidewalls when drilling below groundwater, a temporary or permanent steel casing may also be used to prevent caving of saturated soils and help advancement and constructability of the CIDH shaft. If used, temporary casing should be carefully installed as to not affect the potential side resistance of the shaft. Use of permanent steel casing can be costly but may facilitate constructability. If permanent casing is used, side resistance should be ignored within the cased portion of the shaft per Caltrans Geotechnical Manual requirements. Based on conversations with the design team and review of the 90 percent bridge plans, we understand that permanent steel casing is not anticipated to be used for the proposed bridge CIDH piles for the project.

Given liquefaction is estimated to occur between elevations +772 to +757 feet at Abutment 2, downdrag loading was considered between these elevations and elevations above the liquefiable soils for the extreme limit state case. Residual shear strengths were estimated for soil materials subject to liquefaction following Kramer and Wang (2015), as recommended by the Liquefaction Module of Caltrans' Geotechnical Manual (Caltrans, 2020b). Positive side resistance is estimated starting at a depth below the liquefiable deposits to the termination depth of the pile for this condition.

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Downdrag loads were also considered for the strength limit state case at Abutment 2 due to the estimated static settlements from the proposed fill conditions. Downdrag loads at Abutment 2 were estimated following the neutral plane method, which considers the ground settlement relative to the pile settlement. The neutral plane method compares two curves: 1) the structural load applied to the pile head plus the cumulative negative skin friction (drag load) and 2) the resisting force (i.e., positive skin friction). The intersection of these two curves defines the neutral plane and the skin resistance developed along the length of the pile above this plane is the estimated downdrag load. Following Caltrans guidelines, the provided nominal structural demand for each load case was used to evaluate the neutral plane depth and the resulting downdrag loads were estimated for each load case as shown in Table 9.

Table 9: Structural and Estimated Downdrag Loading

Support No.	Nominal Permanent Structural Load (kips)	Strength		Extreme	
		Nominal Total Structural Load (kips)	Estimated Downdrag Load per Pile (kips)	Nominal Total Structural Load (kips)	Estimated Downdrag Load per Pile (kips)
Abutment 2	412	632	95	561	200

We understand that at this time the southern approach (Abutment 1) will not induce excessive static settlements given the proposed grades will match existing grades. Therefore, downdrag loading is not applicable at Abutment 1 for the strength limit state case. Additionally, given liquefaction induced settlement at Abutment 1 was considered negligible, liquefaction induced downdrag is also not applicable for the extreme limit state case at Abutment 1.

Foundation loads provided by the structural engineer and minimum pile tip elevations are provided in Table 10. CIDH axial pile capacity charts files are provided in Appendix D.

5.2.2 Lateral Pile Capacities

Lateral pile capacities and associated tip elevation for the CIDH piles have been calculated by the structural engineer utilizing the LPILE strength parameters provided in Appendix D of this report. The tables in Appendix D include residual shear strengths under liquefied conditions for the extreme limit state. Lateral pile capacities should consider effects of pile spacing should piles be spaced closer than 8 diameters on-center. Group effects may be considered by the project structural engineer based on the pile spacing by using p-multipliers in LPILE per Table 10.8.3.6.3-1 of the AASHTO LRFD BDS (Caltrans, 2019). Lateral pile tip elevations were provided by the structural engineer and are included in Table 10.

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Table 10: Foundation Design Recommendations CIDH Concrete Pile in Soil

Support No.	Pile Type	Cut-off Elevation (ft)	Service I Limit State (kips)		Permissible Settlement under Service Load (in)	Required Factored Nominal Resistance Per Pile (kips)				Design Tip Elevations (ft)	Specified Tip Elevation (ft)
			Total Load Per Pile	Permanent Loads Per Pile		Strength Limit State		Extreme Limit State			
						Comp. $\phi = 0.7$	Tension $\phi = 0.7$	Comp. $\phi = 1.0$	Tension $\phi = 1.0$		
Abut 1	48" CIDH	+786.75	378	337	1	900	N/A	470	N/A	+723 (a-I) +745 (a-II) +750 (c) +741 (d)	+723
Abut 2	48" CIDH	+784.00	488	447	1	1,086	N/A	770	N/A	+686 (a-I) +702 (a-II) +734 (c) +733 (d)	+686

Notes:

1) Design tip elevations are controlled by: (a-I) Compressions (Strength Limit), (a-II) Compression (Extreme Event), (c) Settlement, (d) Lateral Load.
2) The specified tip elevation shall not be raised above the design tip elevations for compression, tension, lateral, and tolerable settlement.
3) Design tip elevations for Lateral Load are provided by the Structural Designer.

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5.3 APPROACH RETAINING WALLS

As discussed in Section 1.5, we understand that the proposed retaining walls along both sides of the northern approach embankment are anticipated to be mechanically stabilized earth (MSE) walls. The proposed MSE walls will have design heights of approximately 13½ and 16 feet with the tallest portion of the wall and highest fill height located at the interface with the bridge abutment. The top of leveling pad (TOLP) elevations will be +791.5 feet for the 16-foot-tall wall and +794 feet for the 13½-foot-tall wall. Corresponding top of wall (TW) elevations will range from +807.28 to +807.13 feet. These MSE walls will extend approximately 49 feet and 35 feet from the edges of Abutment 2 along the northwest and northeast sides of the on-grade portion of Brandt Road, respectively.

The subsequent sections provide recommendations for the MSE wall design. Construction recommendations for MSE walls are provided in Section 7.1.5.

5.3.1 Bearing Resistance

Bearing resistance analyses for the proposed MSE walls utilized a two-layer soil system in general accordance with Section 10.6.3.1.2 of AASHTO LRFD BDS (Caltrans, 2019) and coefficients for groundwater depths were interpolated where necessary and bearing resistance. A design groundwater elevation of +782 feet was used for bearing resistance calculations. A minimum embedment depth of 2 feet or H/20, whichever is greater, was applied per Section 11.10.2.2.5 of AASHTO LRFD BDS (Caltrans, 2019). Based on the minimum embedment depth and subsurface conditions along the retaining wall alignments, we recommend removing all existing undocumented fills to the underlying natural lakebed deposits, or to a minimum over-excavation depth of 4 feet below the top of leveling pad elevation, whichever is greater, for the 16-foot-tall portion of the MSE walls. The over-excavated area should be backfilled with new, compacted structural fill. Therefore, our analysis for this section assumes the MSE wall will bear on 4 feet of Caltrans structural fill overlying the lakebed deposits. However, it should be noted that there may be areas of deeper undocumented fills at the site which should be fully removed along this portion of the wall.

As the 13½-foot-tall portion of the MSE walls will have a leveling pad elevation of +794 ft, complete removal of the existing undocumented fill in this area may be deemed unfeasible due to site constraints. Therefore, based on the bearing demands provided by the structural engineer and the subsurface conditions along this portion of the wall, we recommend a minimum over-excavation of 4 feet of the undocumented fill and replacement with new, compacted structural fill. As such, our analysis for this

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section of the wall assumes that the MSE wall will bear on 4 feet of Caltrans structural fill overlying the undocumented existing fills.

Factored bearing resistances for the proposed MSE walls were estimated using the Munfakh et al. (2001) method per the guidelines in Section 10.6.3.1.2 of AASHTO LRFD BDS (Caltrans, 2019). This methodology was applied for both strength and extreme limit states bearing resistance designs. A LRFD resistance factor of 0.65 was used for the strength limit state and a LRFD factor of 0.9 was used for extreme event limit states in accordance with the AASHTO LRFD BDS (Caltrans, 2019). The factored bearing resistance results for both proposed MSE wall design heights along the northern approach embankment for the strength and extreme limit state cases are provided in Table 11.

Table 11: Recommended Factored Bearing Resistances for MSE Walls

Design Height, H (ft)	Bottom of Footing Elevation (ft, NAVD88+1000')	Effective Footing Width, B' (ft)	Factored Bearing Resistance (ksf)	
			Static (Strength)	Seismic (Extreme)
16	+791.5	4	9.4	13.0
		6	7.3	10.0
		8	6.4	8.9
		10	6.0	8.3
		12	5.7	7.9
		14	5.6	7.7
		16	5.5	7.6
		18	5.4	7.5
13½	+794	4	4.9	6.8
		5	4.3	6.0
		6	4.0	5.5
		7	3.7	5.2
		8	3.6	5.0
		9	3.5	4.8
		10	3.4	4.7

Notes: 1. LRFD resistance factors of 0.65 and 0.9 were used for the static (strength) and seismic (extreme) cases in accordance with AASHTO LRFD BDS (Caltrans, 2019).

MSE walls used for support of the northern approach embankment should have a minimum leveling pad and reinforcement zone width as required to meet minimum bearing resistances, global stability, and structural stability analyses performed by the wall designer. MSE wall leveling pads should be embedded to the depth necessary to provide adequate bearing capacity and factors of safety against sliding and overturning as determined by the retaining wall designer. Foundations for retaining walls embedded near slopes may also experience a reduction in bearing capacity and should be embedded deep enough to provide an adequate daylight distance to nearby slopes. While the proposed final grades are still being

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refined by the Civil engineer, the current 90 percent design drawings indicate a 2H:1V slope running perpendicular to the proposed wall alignments along the northern approach.

Resistance to horizontal loadings for MSE walls can be developed by frictional resistance developed along the leveling pad bottom. It is not recommended to account for passive earth pressure on the sides of the embedded portions of the walls for resistance to horizontal loadings. The nominal coefficient of friction between the bottom of the leveling pad and the prepared soil can be assumed as 0.45, a LRFD factor should be applied as appropriate.

5.3.2 MSE Wall Settlement

Construction of the northern approach embankment will induce new loads that will result in static settlements of the compressible near surface fill soils and lakebed deposits. The magnitude and rate of settlement will depend on the thickness and characteristics of subgrade material and the height and rate of placement of the proposed fill. Excessive short and long-term static settlements may cause damage to structures during and after construction such as cracking in pavements and retaining walls and static downdrag to bridge abutment piles, dependent on construction phasing.

Immediate (elastic) and post-construction (primary consolidation) static settlements have been estimated for the northern approach embankment using the computer program Settle3 by Rocscience. We understand that the southern approach will not experience an increase in grade and therefore was not analyzed for settlement. The analyses employed the Boussinesq vertical stress distribution computation methodology and fill embankment loadings were modeled to be fully constructed at once (i.e., construction phasing is not considered and time rate of primary consolidation settlement is referenced from end of full height fill placement). A design groundwater elevation of +782 feet was used for estimating settlement. Table 12 presents the estimated total and primary consolidation settlement at the northern approach due to the proposed embankment fills. It should be noted that secondary consolidation settlement was not evaluated as part of this analysis but is anticipated to be minimal. Additionally, the estimated settlements do not include the overexcavation and replacement of the recommended 4 feet of structural fill below bottom of MSE wall footings.

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Table 12: Estimated Settlements at Northern Approach Fill Embankment

Location	Maximum Fill Height (ft)	Proposed Structure	Total Settlement (in)	Primary Consolidation Settlement (in)
Northern Approach	13	MSE Wall Embankment and Approach Pavements	3.0	2.2

At this time, we understand that Brandt Road will be temporarily closed during the replacement of the bridge over the Alamo River and the construction of the embankment/MSE wall will be completed before putting on the final wall facing and final roadway barrier/pavement. Therefore, settlement waiting periods may be considered for the proposed construction of the final surficial improvements. Based on the predominately cohesive nature of the near surface materials and limited granular nature of the soil, the majority of the total settlements are due to primary consolidation settlements that would occur after completion of fill placement. Based on discussions with the project structural and civil engineers, we understand an allowable settlement criteria of ¼ inch is required for the final surficial improvements. The settlement analysis estimates that a settlement waiting period of approximately 45 days after the full embankment height is reached is required for an allowable primary consolidation settlement of approximately ¼ inch remaining after the settlement waiting period. This settlement waiting period accounts for a safety factor of 1.5. Note that long-term secondary consolidation (i.e., soil creep) was not evaluated but may result in an additional but limited amount of long-term settlements following primary consolidation settlement and should be tolerable for ongoing bridge and pavement construction.

Due to inherent difficulties in estimations of both magnitude and rates of settlements and the limited amount of laboratory consolidation test data available, settlement monitoring should be performed during construction to evaluate the actual rate of settlement if a settlement waiting period is employed. We recommend ground settlement of the approach embankments be monitored during the entire period of fill placement consisting of steel settlement plates placed on the original ground surface prior to fill placement with pipe extensions added as fill is placed. The elevation of each pipe extension should be surveyed on a daily basis and after placement of additional pipe segments to re-establish the control elevations during ongoing fill placement activities. After fill embankments are completed, the settlement monuments should continue to be surveyed until settlement is essentially complete.

Settlement monuments are recommended to be installed at increments of no more than 20 feet along the linear direction of the embankment/roadway alignment at the northern approach with a minimum of two settlement monuments. A minimum of two monuments is recommended in the event one is demolished or badly disturbed during grading operations and to aid in settlement monitoring across the

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entire length of the embankment. Settlement monitoring devices are recommended to be located where the embankment height is greatest and at least 10 feet from adjacent bridge abutments.

As the time rate of settlement assumes the full height of fill placed at once and construction phasing is not considered, this settlement waiting period estimate can be refined once construction phasing is known. Differential settlements for foundations accommodating the estimated consolidation settlements are estimated to be less than approximately 1 inch over 50 feet.

It should be noted that settlements discussed in this section are static settlements and do not account for potential liquefaction induced settlement should a design-level seismic event occur. Liquefaction-induced settlement of approximately 2½ inches along the northern approach may occur during a design-level seismic event as discussed in Section 4.2.2 of this report. We understand vertical settlement due to liquefaction is considered a maintenance issue and should be included as an item for post-earthquake inspection and repair.

5.3.3 Retaining Wall Global Stability

Limit equilibrium global stability analyses were performed for the northern approach MSE walls using the computer program Slope/W by Seequent (Version 24.2.1.28). Following Caltrans standards, Spencer's Method of Slices was used for the limit equilibrium analyses, which satisfies both moment and force equilibrium. The proposed retaining wall critical cross sections at Station 11+00 and 11+02 were selected where the wall and fill heights are at their maximum for global stability analyses. The analyses employed a variety of critical slip surface search routines, including block-specified and entry-exit circular surfaces, where the critical failure surfaces are presented. As the bridge abutment approach embankment will be supported by an MSE wall on each side of the embankment with structural fill in between, the entry point for the failure surfaces were limited to the interior portion (retained soil mass) of the proposed embankment and failure surfaces through the reinforced portion of the wall were not considered. For global stability analysis, it is assumed that the reinforced zone of the MSE wall possesses infinite strength, meaning that potential failure surfaces are not modeled to pass through this zone. Evaluation of failure within the reinforced zone (i.e., internal stability of the MSE wall) should be addressed by the wall designer and falls outside the scope of the global stability analysis.

For non-liquefiable layers, long-term static global stability analyses used ultimate strengths modeled using the Mohr-Coulomb failure criteria and undrained shear strengths, as applicable. For the seismic case, liquefiable layers were modeled using the liquefied residual shear strength per Kramer and Wang (2015)

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in accordance with Caltrans' Memo to Designers 20-15. Furthermore, a design groundwater elevation of +782 feet was used for all cases.

Minimum factor of safety (FOS) values required for the global stability analyses are in accordance with Caltrans guidelines as provided in Section 11.6.2.3 of AASHTO LRFD BDS (Caltrans, 2019). Table 13 provides the minimum FOS values for each of the global stability condition analyzed.

Table 13: Required Minimum Factors of Safety for MSE Wall Global Stability Analyses

Analysis Type	Minimum Factor of Safety
Static Long-Term	1.5
Seismic (w/ Liquefaction)	1.0

For the long-term static case, a 250 psf surcharge load was modeled to account for traffic loading. In accordance with AASHTO LRFD BDS Article C11.10.2.1, the nominal minimum reinforced zone width is established as 70 percent of the design height (H, defined as the exposed height plus embedment depth) or 8 feet, whichever is greater (Caltrans, 2019). However, our analyses necessitated increased reinforcing lengths to satisfy overall global stability requirements. Furthermore, the presence of the MSE wall on the opposite side of the embankment was included in the global stability analysis for the 16-foot-tall wall; therefore, the retained zone width between the MSE walls is influenced by the interaction of this dual MSE wall system.

A minimum embedment depth of 2 feet or H/20, whichever is greater, was applied in the analyses per AASHTO LRFD BDS Article 11.10.2.2.5 (Caltrans, 2019). For the seismic condition, a pseudo-static horizontal acceleration coefficient (K_h) of one-third of the peak ground acceleration (PGA), corresponding to a value of 0.29g, was used in the analysis in accordance with the Caltrans Geotechnical Manual, Geotechnical Seismic Design of Earth Retaining Systems section (Caltrans, 2023) and the Caltrans Structural Technical Policy (STP) 11.29 Seismic Design Criteria for Earth Retaining Systems (Caltrans, 2020). The PGA adjusted for site effects at the site of 0.88g was obtained from the Caltrans ARS Online V4.0 tool as discussed in Section 4.1 of this report. Note that, per Caltrans standards, the assumed K_h value of 1/3*PGA corresponds to allowable structural displacements of up to approximately 5 inches.

Table 14 summarizes the estimated critical FOS for the global stability analyses as well as minimum required embedment and reinforced zone width for the section analyzed. The minimum reinforced zone width is applicable to both MSE walls on each side of the bridge approach embankments. The respective outputs are included within Appendix D. Note that only circular failure surface results are provided as this failure mechanism controlled the global stability results.

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Table 14: Summary of MSE Wall Global Stability Results

Station	Bottom of Footing Elevation (ft, NAVD88+1000')	Exposed Height, h (ft)	Wall Height, H (ft)	Embedment Depth (ft)	Reinforced Zone Width (ft)	Static (Long-Term) Critical FOS	Seismic (w/ Liq) Critical FOS
11+00	+791.5	14	16	2	14	1.7	1.2
11+02	+794	11½	13½	2	11½	1.5	1.0

5.4 ABUTMENTS

Based on conversations with the design team, we understand that the abutments at the north and south ends of the replacement bridge will be seat-type abutments and will bear at approximate elevations of +783.75 and +786.5 feet, respectively. Geotechnical recommendations for the design of the abutment walls are provided in the subsequent sections. Further recommendations related to the geotechnical aspects of the construction of the abutment walls are provided in Section 7.4 of this report.

5.4.1 Lateral Earth Pressures

We recommend that the abutments be backfilled with Caltrans structural backfill and be designed with the following soil parameters per Caltrans Standard Plans (Caltrans, 2024a) and Caltrans Memo to Designers 5-5 (Caltrans, 2014):

- Total unit weight: 120 pcf
- Internal friction angle: 34°
- Cohesion: 0 psf
- Horizontal seismic coefficient: 0.29g (i.e., 1/3*PGA)
- Vertical seismic coefficient: 0.0g

Abutments backfilled with Caltrans structural backfill should be designed to resist an active equivalent fluid earth pressure of 35 pcf for drained conditions and 80 pcf for undrained conditions. The active equivalent earth pressure assumes the wall is free to rotate at least 0.002 times the height of the wall to mobilize the active condition. If the abutments are restrained against movement at the top, they should be designed using the at-rest equivalent fluid earth pressure of 55 pcf for drained conditions and 90 pcf for undrained conditions. These pressures include hydrostatic pressure for undrained conditions and assume level backfill conditions.

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Resistance to horizontal loadings can be developed by passive earth pressure using a factored equivalent fluid weight of 200 pcf for drained conditions and 125 pcf for undrained conditions (where below groundwater). These passive pressures include a resistance factor of 0.5 in accordance with Section 11.5.7 of AASHTO LRFD BDS (Caltrans, 2019). The passive pressure should be ignored within the scour/erosion depth of the abutment, if applicable.

We recommend a design groundwater elevation of +782 feet for design of the retaining walls. Undrained earth pressures (i.e., inclusive of hydrostatic pressures) should be used for design of the abutment walls for elevations below one foot above the design groundwater elevation to account for capillary rise, if applicable. Drained conditions may be used for design at elevations above elevation +783 feet assuming adequate drainage is provided above this elevation. Surcharge pressures (dead or live) should be added to the lateral pressures where such loads (e.g., traffic) may occur adjacent to the wall and should be estimated by multiplying the surcharge load by the active earth pressure coefficient (K_a) of 0.3 or the at-rest earth pressure coefficient (K_o) of 0.45, whichever is applicable.

Seismic wall pressures were estimated using the Monokobe-Okabe (M-O) method (Caltrans, 2019) assuming level backfill conditions. Based on the design peak horizontal ground acceleration of 0.88g per Caltrans standards and using a horizontal seismic coefficient (k_h) equal to 1/3*PGA or 0.29g, the resultant seismic force (in pounds) for each linear foot of wall in terms of equivalent fluid weight can be estimated as $12.4H^2$ within Caltrans structural fill soils, where H is the height of the wall (in feet) above its base. The resultant seismic force acts at 0.5H above the wall base in accordance with Caltrans MTD 5-5, corresponding to a uniform pressure distribution. This dynamic incremental earth pressure should be added to the static active earth pressure. Note that the horizontal seismic coefficient value presented is associated with an expected permanent mean displacement of up to 5 inches per Caltrans criteria.

5.4.2 Slope Stability and Seismic Slope Displacements at Abutments

Limit equilibrium global stability analyses were performed at the abutments using the computer program Slope/W by Seequent (Version 24.2.1.28). Following Caltrans standards, Spencer's Method of Slices was used for the limit equilibrium analyses, which satisfies both moment and force equilibrium. The analyses employed a variety of critical slip surface search routines, including block-specified and entry-exit circular surfaces, where the critical failure surfaces are presented. Ultimate strengths were used for long-term static and pseudo-static (i.e., seismic) analyses. Residual strengths were applied to materials identified as liquefiable in our seismic analysis in accordance with Caltrans standards (Caltrans, 2023). The required minimum factors of safety for each condition are provided in Table 15.

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Table 15: Required Minimum Factors of Safety for Abutment Global Stability Analyses

Analysis Type	Minimum Factor of Safety
Static Long-Term	1.5
Pseudo-Static (Seismic)	1.0

Long-term static conditions were modeled with the abutment walls and proposed embankment fills. Note that for the stability analysis at Abutment 2, the critical cross section is where the retained soil mass (structural fill) will be placed in between the proposed MSE retaining walls. Failure through the MSE reinforced zone should be evaluated by the wall designer for internal stability of the wall. For long-term static cases, a 250 psf surcharge load was modeled to account for traffic loading. A site groundwater elevation of +782 feet was used for all model cases.

The seismic condition included seismic loading using a horizontal seismic coefficient of 1/3*PGA (i.e., 0.29g) in addition to applying liquefiable residual shear strengths for the materials susceptible to liquefaction. Analyses at Abutment 2 were also performed for yield acceleration (i.e., k_y) conditions in which seismic coefficient values corresponding to a factor of safety of 1.0 were determined in order to estimate seismic slope displacements at the abutments for free-field conditions as well as for conditions considering pile restraining forces.

Liquefied strengths were also used in the yield acceleration model in accordance with Caltrans guidelines (Caltrans, 2017; Caltrans, 2020c). The yield coefficient value was used along with the dynamic characteristics of the slope/slide mass and design spectral accelerations to estimate the residual mean seismic slope displacement for a design-level seismic event.

Results of the global stability analyses are provided in Table 16 for each abutment and each slope stability case analyzed.

Table 16: Results of Global Stability Analyses at Abutments

Case		Critical Factor of Safety
Static Long-Term	Abutment 1	1.9
	Abutment 2	1.4
	Abutment 2 (considering piles)	1.5[1]
Psuedo-Static (Seismic)	Abutment 1	1.2
	Abutment 2	0.6

Notes:

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1. A minimum pile shear resistance of approximately 2,000 lbf is required to meet long-term static safety factor requirements.

Based on the critical safety factors shown in Table 16, the proposed Abutment 1 meet the minimum required factor of safety values for static long-term stability and seismic stability. However, the static long-term and seismic stability analyses for Abutment 2 do not meet the minimum required safety factors. Therefore, a minimum pile restraining shear force of 2,000 lbs per linear foot was considered for the static long-term analysis at this abutment to assess a minimum pile restraining force required to meet static long-term global stability conditions. The structural engineer should confirm that this minimum restraining pile force will be provided by the Abutment 2 piles.

Seismic slope displacement at Abutment 2 were estimated using yield coefficient values developed for different pile restraining forces following the method of Bray and Travasarou (2007) in accordance with Caltrans' Memo to Designers 20-15 (Caltrans, 2017). Based on the Bray and Travasarou (2007) method and the site's seismic parameters, the estimated median seismic slope displacements for varying pile restraining forces are provided in Appendix D. In accordance with Caltrans MTD 20-15, the total shear force and running shear forces were provided by the project structural engineer for comparison with the seismic slope displacement values in order to determine the median design displacement for the Abutment 2 piles. Total and running average shear forces were developed based on the free-field displacement profile as provided in Appendix D. As such, the median design displacement was estimated to be approximately 19 inches at Abutment 2. It should be noted that there is inherent uncertainty in seismic slope displacement estimates and median (50^{th} percentile) values are presented herein. The anticipated range of displacements is approximately one-half to two times the median value.

Based on discussions with the project structural engineer, it is our understanding that this displacement (i.e., lateral spreading) is acceptable to the bridge designer in accordance with Caltrans Memo to Designers 20-15 and no further mitigation measures such as ground improvement for the Abutment 2 piles is necessary.

The various slope stability analyses, resulting failure surfaces and critical safety factors for the abutments are provided in Appendix D.

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5.5 BRIDGE APPROACHES

5.5.1 Approach Fill Settlement

MSE walls will be constructed along both sides of the northern approach to the bridge and as such we anticipate static settlements due to an increase in grade at that location. As a majority of the approach embankment will be constructed of the reinforced and retained zones of the MSE walls, information on estimated settlements and settlement waiting periods are discussed in Section 5.3.2 of this report.

Given the southern approach and proposed Abutment 1 do not require any vertical increase in grade, we do not anticipate any estimated settlement at this location.

Liquefaction-induced settlements of approximately 2½ inches along the approaches were estimated for the design seismic event as discussed in Section 4.2.2 of this report. We understand that potential liquefaction-induced distress of the walls should a design-level seismic event occur is considered a maintenance issue and should be included as an item for post-earthquake inspection and repair.

5.5.2 Pavements

Based on conversations with the project team and review of the 90 percent design plans, we understand the existing roadway pavement within approximately 200 feet of the Brandt Road Bridge will be demolished and replaced to facilitate proposed earthwork. We understand the pavement for the approach embankments will consist of asphalt concrete (AC) pavement consistent with the current site conditions and, as alternate emergency roads are available in case of a bridge closure, no concrete approach slabs are proposed. Furthermore, per discussions with the project design team, we understand the Brandt Road Replacement Bridge will be primarily used for heavy vehicular and truck traffic corresponding to an Average Daily Traffic (ADT) value of 900 vehicles, which is expected to increase to an ADT value of 1,065 vehicles by the year 2038.

To evaluate the existing subgrade soils for pavement section evaluation, two resistance value (R-value) tests were performed on selected bulk samples of the near-surface soils from borings B-2 and B-3. The R-value tests resulted in R-values of 53 and 39 for borings B-2 and B-3 , respectively, as shown in Appendix C.

The recommended pavement sections provided herein are consistent with the County of Imperial Department of Public Works Engineering Design Manual (County of Imperial, 2004) and Caltrans Highway Design Manual (Caltrans, 2020d) as well as the following conditions:

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1. A minimum of 12 inches of existing subgrade soils should be overexcavated and replaced with new, compacted engineered fill. The new, compacted engineered fill should be placed at an optimum moisture content between optimum and 2 percent above optimum at a minimum relative compaction of 95 percent per ASTM D1557.
2. Utility trench backfill should be properly placed and adequately compacted to provide a stable subgrade. Trench backfill within the top 12 inches of pavement soil subgrade should be compacted to a minimum of 95 percent relative compaction per ASTM D1557.
3. An adequate drainage system should be provided to prevent surface water from saturating the subgrade soil. Pavements should be sloped to provide positive drainage and water should not be allowed to pond.
4. A periodic maintenance program should be incorporated to include sealing cracks and other measures.
5. Aggregate base materials and the upper 12 inches of subgrade soil below the aggregate base should be compacted to a minimum of 95 percent of the ASTM D1557 maximum dry density.
6. The finished subgrade should be at, or brought to, a firm and unyielding condition at the time aggregate base is laid and compacted.
7. Concrete curbs separating pavement from landscaped areas extend below the bottom of adjacent aggregate base materials to reduce movement of moisture into the aggregate base layer and shall meet the Gateway-400 standard specifications (County of Imperial, 2004).
8. Pavement subgrades are placed and compacted according to the project specifications.

5.5.2.1 Flexible Pavements

Given Brandt Road is classified as a minor collector roadway from the California Road System Functional Classification map, the provided ADT values, and based on discussions with the County of Imperial, a Traffic Index (TI) of 6.5 was used for the project. Based on the R-value test results, potential variability along the approximate 200-foot-long replacement section of the approaches, and the recommendation for pavements to be supported on a minimum of 12 inches of new, engineered fill, we recommend a minimum R-value of 30 be used for pavement design. Final pavement sections may be adjusted based on testing of actual pavement subgrade soils during construction.

Recommended flexible pavement sections using an R-value of 30 have been evaluated in accordance with County of Imperial and Caltrans Standards and are provided in Table 17.

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Table 17: Recommended Flexible Pavement Sections

Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
6.5	3	10
	3.5	9

The flexible pavement and aggregate base materials should conform to and be placed in accordance with current Caltrans Standard Specifications. The aggregate base should be compacted to a minimum of 95 percent of the maximum dry density per ASTM D1557. Further details for construction of pavements for the project are provided in Section 7.5 of this report.

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6 NOTES FOR SPECIFICATIONS

We understand that the project specifications are currently under development. The following provides a discussion of items that are anticipated to be special provisions to the Caltrans standard specifications (Caltrans, 2024b). The notes for specifications should be further evaluated once project specifications are available.

19-3.03A Removal of Unsuitable Material below the Bridge and Earth Retaining System Footings

The following special provision language is recommended: For areas beneath the proposed 16-ft-tall sections of the MSE retaining walls, existing undocumented fills should be over-excavated in their entirety to the underlying natural lakebed deposits, or to a minimum depth of at least 4 feet below the bottom of the MSE wall leveling pads, whichever is greater. For the proposed 13½-ft-tall sections of the MSE retaining walls, the existing undocumented fills should be over-excavated to a minimum depth of 4 feet below the leveling pad elevations. Caltrans Standard fill should be moisture conditioned and compacted under ASTM D1557 in accordance with the current Caltrans Standard Specification.

49-3 Cast-In-Place Concrete Piling

49-3.02C(3) Not-Allowed Installation Methods for Temporary Steel Casing

The following special provision language is recommended: Install temporary steel casings by oscillators or rotators only. Do not install temporary steel casings by impact or vibratory hammers.

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7 NOTES FOR CONSTRUCTION

Based on our understanding of the proposed improvements as discussed in Section 1.5, the subsequent sections provide construction recommendations for the geotechnical-related aspects of the project.

7.1 EARTHWORK

7.1.1 Demolition and Site Preparation

To facilitate the proposed construction, we understand existing pavements, curbs and gutters, landscaped areas, bridge deck and column structures, utilities, and other existing elements within the footprint of new construction will be removed prior to construction. The stem walls with counterforts, wingwalls of the existing abutments, and pile caps will be removed but the existing abutment wood piles will be abandoned in place. However, as noted in the 90 percent design plans, one Abutment 2 pile is proposed at the location of an existing wood timber pile. It is recommended that where existing timber piles conflict with the proposed deep foundations, they be entirely removed. Any existing vegetation, pavements, utilities, and other structural elements within proposed improvement areas not designated to remain in place should be completely removed prior to construction. Excavations for removal of existing structural elements should be backfilled with approved and properly compacted engineered fill in accordance with Section 7.1.3 of this report. Prior to initiating grading operations, all existing debris, oversized materials (greater than 4 inches), and other deleterious material within the construction area should be stripped and completely removed from the project site.

Existing undocumented fill material encountered within structural and pavement footprints should be removed to a minimum depth as recommended in Section 7.1.2 prior to the placement of engineered or structural fills, aggregate base, or structural concrete. Crushed concrete from demolition of existing structures and existing asphalt pavement may be recycled and re-used as granular fill or subbase provided it is crushed to a maximum size of ¾-inch and meets the requirements of the fill or subbase specifications, unless explicitly not allowed per the project specifications.

7.1.2 Subgrade Preparation

Prior to placing fill within proposed fill embankment areas, the existing subgrade should be scarified to a minimum depth of 12 inches, moisture conditioned, and compacted to a minimum of 90 percent relative compaction per ASTM D1557. In cut areas, the exposed subgrade for sidewalks, pavement subgrades, and

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other surface improvements should be over-excavated to a minimum depth of 12 inches and replaced with new, compacted engineered fill that is moisture conditioned and compacted to a minimum of 95 percent relative compaction per ASTM D1557 as discussed in Section 5.5.2. Areas of pumping or unstable subgrade will require stabilization. The method of stabilization will vary depending on severity and soils encountered and should be reviewed by Kleinfelder based on field observations during construction. Engineered fill recommendations are provided in Section 7.1.3.

For areas beneath the proposed 16-ft-tall sections of the MSE retaining walls, existing undocumented fills should be over-excavated in their entirety to the underlying natural lakebed deposits, or to a minimum depth of at least 4 feet below the bottom of the MSE wall leveling pads, whichever is greater. For the proposed 10-ft-tall sections of the MSE retaining walls, the existing undocumented fills should be over-excavated to a minimum depth of 4 feet below the leveling pad elevations. The over-excavated existing fills should be replaced with new, compacted structural fills moisture conditioned between 0 and 2 percent and compacted to a minimum of 95 percent dry density per ASTM D1557. Structural fill recommendations are provided in Section 7.1.3.

Subgrade preparation recommendations for pavements are provided in Section 5.5.2.

7.1.3 Engineered and Structural Fill

Engineered and structural fills should meet the requirements of Caltrans Standard Specifications and consist of clean, granular material with a very low to low expansion index (EI = 30 or less as evaluated by ASTM D4829) and a low corrosion potential. Structural fill should meet the minimum requirements of engineered fill as well as achieve a minimum internal angle of friction of 34 degrees as evaluated by ASTM D3080. All materials to be placed as new, compacted fill should be free of vegetation, organics, debris, other deleterious materials, and rock particles greater than 3 inches in maximum diameter.

Engineered and structural fills should be moisture conditioned to between optimum and 2 percent above optimum moisture content and compacted to a minimum of 90 percent of the ASTM D1557 maximum dry density at depths greater than 12 inches below pavement areas and 4 feet below retaining wall foundation areas (or deeper for the 16-ft-tall portion of the MSE walls). In the upper 12 inches below pavement subgrades, engineered fill should be placed and compacted to a minimum of 95 percent of the maximum dry density per ASTM D1557. For retaining wall subgrades, structural fill should be placed and compacted to a minimum of 95 percent of the maximum dry density per ASTM D1557. Although the optimum lift thickness for fill soils will depend on the type of compaction equipment utilized, new fills should generally be placed in uniform lifts not exceeding approximately 8 inches in loose thickness.

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7.1.4 Import Materials

Import materials to be used for engineered and structural fills should have an expansion index of less than 30, a minimum R-value of 30, no greater than 30 percent of the particles passing the No. 200 sieve, be non-corrosive, and contain no particles greater than 3 inches in dimension. Furthermore, structure backfill for proposed retaining walls shall conform to the current Caltrans Standard Specifications and project special provisions and achieve a minimum internal angle of friction of 34 degrees as evaluated by ASTM D3080.

7.1.5 MSE Wall Construction

The materials used for the proposed MSE walls should follow the following recommendations per Caltrans standards (Caltrans 2024b):

1. The fill used within the reinforced zone should have a minimum friction angle of 34 degrees with zero cohesion when tested in accordance with ASTM D3080, a maximum expansion index of 5, and conform with the gradation requirements shown in Tables 18 and 19, (Caltrans, 2024b).

Table 18: Recommended MSE Wall Reinforced-Zone Soil Gradation

Sieve Size	Percent Passing (%)
6-inch	100
3-inch	78-100
No. 30	0-60
No. 200	0-15

Table 19: Recommended MSE Wall Property Requirements

Sieve Size	Requirement
Sand Equivalent* (min)	12
Plasticity Index* (max)	6
Minimum Resistivity (ohm-cm)	2000
Chlorides (ppm)	< 250
Sulfates (ppm)	< 500
pH	5.5 – 10.0

* Does not apply if 12 percent or less passes the no. 200 sieve and 50 percent or less passes the no. 4 sieve.

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The reinforced zone backfill should extend a minimum of 1 foot beyond the end of the reinforcement.

2. A foundation leveling pad is recommended to provide a level surface on which to place the facing panel units at the specified design elevations. A minimum of 6 inches of compacted aggregate base or controlled low strength material (CLSM) is recommended for the foundation leveling pad. The compacted aggregate base should meet the gradation requirements shown in Table 20.

Table 20: Recommended Leveling Pad Soil Gradation

Sieve Size	Percent Passing (%)
1-inch	100
No. 4	35-80
No. 10	20-65
No. 40	10-35
No. 200	0-10

3. For areas beneath the proposed 16-foot-tall retaining wall, existing undocumented fills should be over-excavated in their entirety to the underlying natural lakebed deposits, or to a minimum depth of at least 4 feet below the bottom of the MSE wall leveling pads, whichever is greater. The excavated area should then be backfilled with new, compacted structural fill.

   The proposed 13½-foot-tall retaining wall has a bottom of footing elevation is +794 feet. Due to temporary construction grade constraints, complete removal of the existing undocumented fill in this area may be deemed unfeasible. A minimum over-excavated depth of at least 4 feet below the bottom of the leveling pad should be maintained.

   The structural fill should be moisture conditioned between 0 and 2 percent and compacted to a minimum of 95 percent dry density per ASTM D1557.

7.1.6 Soil Characteristics

Anticipated excavation depths within the project alignment associated with site clearing and preparation for planned earthwork are not expected to be significant. The excavation of these existing near-surface soils above groundwater or limited improvements below groundwater (such as excavations for relocation of utilities) should be possible using moderate to strong effort with conventional heavy-duty grading and excavating equipment. Limited excavations made below groundwater (if any) will likely need to be

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dewatered. Pumps and sumps for shallower excavations below the groundwater table or other temporary dewatering methods may be considered.

7.1.7 Utility Pipe Bedding and Trench Backfill

We understand some existing utilities will be relocated to support the overall Brandt Road Bridge Replacement project. Pipe bedding for relocated utilities should consist of granular material having a minimum sand equivalent value of 30. The bedding material should be placed in a zone that extends a minimum of 3 inches below and 12 inches above the pipe for the full trench width and compacted to a minimum of 90 percent of the maximum dry density per ASTM D1557.

Although not anticipated, in areas where significant groundwater seepage is encountered and cannot be controlled by pumping, a layer of woven filter fabric such as Mirafi 600X may be used at trench subgrades and overlain with either 3-inch minus rock material or ¾-inch rock provided it is completely wrapped (i.e., burrito wrap) in a non-woven fabric such as Mirafi 140N or equivalent. The aggregate should be tamped down to firm conditions prior to completion of the burrito wrap. Prior to placement of utility pipe, pipe bedding may then consist of a minimum of 6 inches of ¾-inch aggregate for a leveling pad. However, measures should be taken to dewater trenches as much as possible to place bedding material in the dry. Dewatering may consist of either pumps and sumps to control shallow standing water or other temporary dewatering methods if excavations are made relatively deep below the site's groundwater table.

Trench backfill above pipe bedding may consist of import soils in accordance with Sections 7.1.3 and 7.1.4 of this report, placed in lifts no greater than 8 inches in loose thickness, and compacted to at least 95 percent of the maximum dry density per ASTM D1557 in structural and pavement subgrade areas. Controlled low-strength material (CLSM) may also be used provided it has a minimum 28-day compressive strength of 300 psi, a maximum slump of 6 inches, and a minimum of 3 sacks of cement per cubic yard.

7.1.8 Temporary Excavations

Temporary excavation slopes will be required for the removal of portions of the existing bridge and for relocation of near-surface utilities at the site. Temporary excavations required for construction should be laid back or shored in accordance with the California Occupational Safety and Health Administration (Cal-OSHA), Caltrans, and any other applicable regulations. For planning purposes, all soils should be considered OSHA Type C material. The actual OSHA soil type should be determined by the contractor's responsible person in the field at the time of construction. Type C soils above groundwater should have maximum 1½H:1V temporary construction excavation slopes up to 20 feet in height. If stability of an

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excavation becomes questionable during construction, the excavation should be evaluated by the contractor's responsible person. Where laying back of slopes in accordance with OSHA requirements is not possible, shoring should be installed to properly support excavations.

If required, temporary shoring design should be performed by a Registered Professional Engineer in California and the final shoring designs should be reviewed by Kleinfelder. Temporary shoring may consist of sheet piles, shore boxes, soldier piles and lagging, secant piles, etc.

Construction personnel should be aware that excavation conditions may change rapidly if soil moisture conditions change, if surcharge loads are placed too close to excavations, or if soils that have been disturbed by previous excavations are encountered. Temporary slopes below the site's groundwater elevation, if required, will likely need to be dewatered, whether with pumps and sumps for shallower excavations below the groundwater table or other temporary dewatering methods, and excavations may need to be sloped at more gradual slope gradients. Measures should be taken to protect construction personnel from raveling of trench sidewalls. If sloughing or free water is encountered, it may be necessary to reduce trench slopes to shallower slope inclinations than the OSHA maximum slope inclination requirements or provide shoring.

7.1.9 Permanent Slopes

We understand that the southern approach grades will match existing grades and that new slopes along this approach are not anticipated. The proposed northern bridge approach, however, will consist of new fills that will be retained using MSE retaining walls. Recommendations for design of retaining walls are provided in Section 5.3. Where new slopes are proposed outside of wall footprints, such as in front of abutment walls, permanent slopes should have slope inclinations no steeper than 2H:1V (horizontal to vertical). It is anticipated that the approach embankment fills will be constructed with imported soils meeting the minimum Caltrans requirements for such purpose and that fills placed outside of wall footprints will consist of the minimum requirement for engineered fill soils per Section 7.1.3 of this report.

7.1.10 Erosion Prevention and Sedimentation Control

Soil erosion is the process by which soil particles are removed from the land surface by wind, water, or gravity. Most natural erosion occurs at slow rates; however, the rate of erosion increases excessively when land is cleared or altered and left unprotected. This is particularly true during and immediately after the construction phase when site activities are most likely to disturb the ground.

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Prevention of erosion and control of sedimentation (erosion control) is a complex issue and is usually best addressed by sound planning and the use of Best Management Practices (BMPs). Erosion control BMPs are the "best" available technologies that are consistent with conventional local control practices. Implementation is dependent on site conditions and applicability of proven cost-effective methods. The selection and implementation of construction BMPs is dependent on what existing features need to be protected or mitigated.

BMPs for erosion and sediment control are selected to meet the specific objectives based on site conditions, serviceability, and cost. Various BMPs in combination or succession may be needed for a given area. Selection of erosion control BMPs should be regularly monitored based on minimizing disturbed areas, stabilizing disturbed areas, and protecting slopes and channels. It also should be based on retaining sediment onsite and controlling the site perimeter. All implemented BMPs should be monitored and controlled after initial installation, as well as on a regular basis, and during and after any storm generating runoff to determine maintenance requirements and the general condition of the installed system.

Consideration should be given to the use of concrete lining or riprap of slope surfaces if inclinations are steeper than 2H:1V or where concentrated surface water flow may occur.

7.2 SHALLOW FOUNDATIONS

7.2.1 MSE Wall Footings on Soil

Foundations for the approach retaining walls are to be founded on a minimum 6-inch-thick leveling pad and minimum of 4 feet of new, compacted structural fill. The reinforced zone material as part of the proposed MSE wall is to be placed directly on top of the leveling pad. As previously discussed in Section 7.1.2, the structural fill below the leveling pad should be moisture conditioned between 0 and 2 percent of optimum and compacted to a minimum of 95 percent dry density per ASTM D1557.

The MSE wall/leveling pad should be deepened as necessary so that no existing or proposed utility trenches will extend below a plane having a slope of 1 vertical to 1 horizontal from the bottom edge of leveling pad. No parallel trenches should be within 18 inches from the closest edge of the leveling. If it is not possible to locate utility trenches away from the MSE wall foundations, we recommend that the trenches be backfilled with a 2-sack cement/sand slurry mix.

Prior to the placement of the MSE leveling pad, excavations should be cleaned of all debris, loose or soft soil, and water. All MSE wall excavations should be observed by Kleinfelder immediately prior to

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placement of aggregate base or CLSM for the leveling pad to check that the subgrade recommendations contained in this report are implemented during construction.

7.3 DEEP FOUNDATIONS

In accordance with Caltrans standards, the calculation of nominal resistances of the CIDH piles were based on side resistance only and the tip resistance was neglected. The zones used to calculate the resistances of the CIDH piles are shown in Table 21.

Table 21: CIDH Nominal Side Resistance

Support Location	Top of Side Resistance Zone Elevation[1] (ft, NAVD88+1000')	Bottom of Side Resistance Zone Elevation (ft, NAVD88+1000')	Specified Tip Elevation (ft, NAVD88+1000')
Abutment 1	+782	+723	+723
Abutment 2	+770	+686	+686

Note: 1) Abutment 2 considers an additional downdrag load due to static settlement.

7.3.1 CIDH Pile Load Tests

Osterberg Load Cell™ or Statnamic™ techniques may be used to differentiate the design friction resistance from neglected end bearing and frictional resistance within the cased portion of the pile and potentially optimize the design of the piles. However, test piles are not required as part of this testing program. Should load testing be selected for the CIDH piles, Kleinfelder can provide recommendations for the load testing program.

7.3.2 CIDH Production Pile Installation

Proposed CIDH piles will extend through soft and loose materials within the lakebed deposits and below the groundwater table. In addition, very dense and stiff layers within the lakebed deposits will be encountered during pile installation. Construction methods for the soil conditions described in this report and in our boring logs should be considered when selecting drilling methods and equipment. The piling contractor should have locations of nearby existing improvements surveyed and monitored during pile installation to avoid damages to existing foundations, underground utilities, or other improvements. Furthermore, as the existing timber piles of the existing bridge will remain in place, the contractor should have the locations of the existing piles surveyed to avoid conflicts during pile installation. However, as

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noted in the 90 percent design plans, one Abutment 2 pile is proposed at the location of an existing timber pile. It is recommended that where existing timber piles conflict with the proposed deep foundations, they be entirely removed.

Installation of all production piles should be observed by Kleinfelder to verify conformance with our recommendations and project specifications. In the event unforeseen conditions are encountered during construction, Kleinfelder should evaluate the observed conditions and provide supplemental recommendations, as necessary.

Due to the wet drilling conditions, PVC inspection pipes should be installed in all CIDH piles to permit Gamma-Gamma Logging (GGL) or Cross-hole Sonic Logging (CSL) tests after installation to check the integrity of the CIDH piles. The results of the post-construction pile integrity testing should be reviewed by Kleinfelder.

7.4 ABUTMENT AND RETAINING WALLS

As discussed in Section 5.4.1, drained lateral earth pressures may be used for design of abutment or retaining walls at elevations above elevation +783 ft assuming adequate drainage is provided. Adequate drainage provisions should be provided to prevent the buildup of hydrostatic pressures within the retained soil behind retaining walls above this elevation unless walls are fully designed for hydrostatic pressures along their entire retained height.

Wall drainage may be provided by free-draining gravel surrounded by non-woven synthetic filter fabric or by prefabricated, synthetic drain panels. Drainage should be collected by perforated pipes either at the base of the wall or at the hydrostatic design elevation of +783 ft, whichever is shallower, and directed to a sump, storm drain, weep hole(s), or other suitable location for disposal. Where adequate drainage provisions are not able to be provided or where walls are constructed below groundwater, hydrostatic pressures should be used.

MSE wall reinforced and retained zone materials should conform to the applicable fill requirements in the current Caltrans Standard Specifications (Caltrans, 2024b).

7.5 PAVEMENTS

Flexible pavement and aggregate base materials should conform to and be placed in accordance with current Caltrans Standard Specifications (Caltrans, 2024b). A minimum of 12 inches of existing subgrade

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soils should be over-excavated and replaced with new, compacted engineered fill. The new, compacted engineered fill should be placed at an optimum moisture content between optimum and 2 percent above optimum at a minimum relative compaction of 95 percent per ASTM D1557.

Utility trench backfill should be properly placed and adequately compacted to provide a stable subgrade. Trench backfill within the top 12 inches of pavement soil subgrade should be compacted to a minimum of 95 percent relative compaction per ASTM D1557. Aggregate base materials should also be compacted to a minimum of 95 percent of the ASTM D1557 maximum dry density.

7.6 CONSTRUCTION MONITORING

Geotechnical design is based on limited amounts of information from relatively widely spaced subsurface explorations. The limitations to exploration are based on practical considerations such as accessibility, cost, time, environmental conditions, and reasonability. Geotechnical engineering recommendations are considered preliminary until conditions are verified by observations during construction by Kleinfelder. Field conditions encountered during construction may vary from those assumed during design. During construction, field conditions should be assessed by Kleinfelder as they are encountered, and any design modifications included as necessary to address the variations identified. As a minimum, construction observations by Kleinfelder should include the following:

- Embankment Subgrade: Prior to placing fill over native subgrade, the subgrade should be cleared and grubbed of roots and vegetation, scarified to the recommended minimum depth and recompacted to a firm dense condition, and approved prior to placement of embankment.
- Fill Material Type, Placement, and Compaction: Observations and testing are required to ensure that suitable fill materials are used and that they are properly placed and compacted to meet Caltrans specifications. Structural and engineered fills should be compacted to a dense and unyielding condition and to a minimum maximum dry density as determined per ASTM D1557 as specified in this report. Utility pipe bedding and trench backfill should also be observed by Kleinfelder.
- Deep Foundations: Production piling installation should be observed and documented by Kleinfelder during construction. GGL or CSL test results should be reviewed and pile capacity calculations updated as necessary based on test results. If selected, pile load testing should also be observed and documented by Kleinfelder.
- Foundation Subgrades: Subgrades for MSE wall leveling pads should be observed by Kleinfelder prior to placement of any reinforced zone materials for the MSE walls. Retaining wall subgrades

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should be over-excavated to the minimum depths recommended and recompacted per the recommendations of this report.

- Pavement subgrades: Subgrades for pavements should be observed by Kleinfelder prior to placement of any aggregate base or AC pavement. Foundation subgrades should be founded on engineered fill to the minimum depths and compaction recommended in this report.

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8 LIMITATIONS

This report has been prepared for the exclusive use of the County of Imperial Department of Public Works and their consultants for specific application to the design and construction of the Brandt Road Bridge Replacement project. The findings, conclusions, and recommendations presented in this report were prepared in accordance with generally accepted geotechnical engineering practice. No warranty, express or implied, is made.

The scope of services was limited to the field exploration program described in this report. Judgments leading to conclusions and recommendations are generally made with incomplete knowledge of the subsurface conditions present due to the limitations of data from field studies.

Kleinfelder offers various levels of investigative and engineering services to suit the varying needs of different clients. Although risk can never be eliminated, more detailed and extensive studies yield more information, which may help understand and manage the level of risk. Since detailed study and analysis involves greater expense, our clients participate in determining the level of service necessary to provide information for their project at an acceptable level of risk. The client and key members of the design team should discuss the issues addressed in this report with Kleinfelder so that the issues are understood and applied in a manner consistent with the owner's budget, tolerance of risk, and expectations for future performance and maintenance.

Conclusions and recommendations contained in this report are based on our field observations and subsurface explorations, laboratory tests, engineering analyses, and our understanding of the proposed construction. It is possible that soil or groundwater conditions could vary between or beyond the points explored. If soil or groundwater conditions are encountered during construction that differ from those described herein, then the client is responsible for ensuring that Kleinfelder is notified immediately so that we may re-evaluate the conclusions and recommendations of this report. If the scope of the proposed construction, or locations of the improvements, changes from that described in this report, the conclusions and recommendations contained in this report are not considered valid until the changes are reviewed and the conclusions of this report are modified or approved in writing by Kleinfelder.

Kleinfelder cannot be responsible for interpretation by others of this report or the conditions encountered in the field. Kleinfelder should be retained so that all geotechnical aspects of construction will be monitored on a full-time basis by a representative from Kleinfelder, including but not limited to site preparation, preparation of foundations, and placement of engineered fill. These services provide

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Kleinfelder the opportunity to observe the actual soil and groundwater conditions encountered during construction and to evaluate the applicability of the recommendations presented in this report to the site conditions. If Kleinfelder is not retained to provide these services, we will cease to be the engineer of record for this project and will assume no responsibility for any potential claim during or after construction on this project. If changed site conditions affect the recommendations presented herein, then Kleinfelder must also be retained to perform a supplemental evaluation and to issue a revision to our report.

This report, and any future addenda or reports regarding this site, may be made available to bidders to supply them with only the data contained in the report regarding subsurface conditions and laboratory test results at the point and time noted. Bidders may not rely on interpretations, opinions, recommendations, or conclusions contained in the report. Due to the limited nature of any subsurface study, the contractor may encounter conditions during construction which differ from those presented in this report. In such event, the contractor should promptly notify the owner so that Kleinfelder can be contacted to confirm those conditions. We recommend contingency funds be reserved for potential problems during earthwork and foundation construction.

This report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance, but in no event later than one year from the date of the report. Land use, site conditions (both on and off site), or other factors may change over time and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify Kleinfelder of such intended use. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party.

Our geotechnical scope of services for this subsurface exploration and geotechnical foundation report did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous substances at this site. Kleinfelder will assume no responsibility or liability whatsoever for any claim, damage, or injury which results from pre-existing hazardous materials being encountered or present on the project site or from the discovery of such hazardous materials. Additional important information about this report is presented in the attached Geotechnical Business Council insert in Appendix E.

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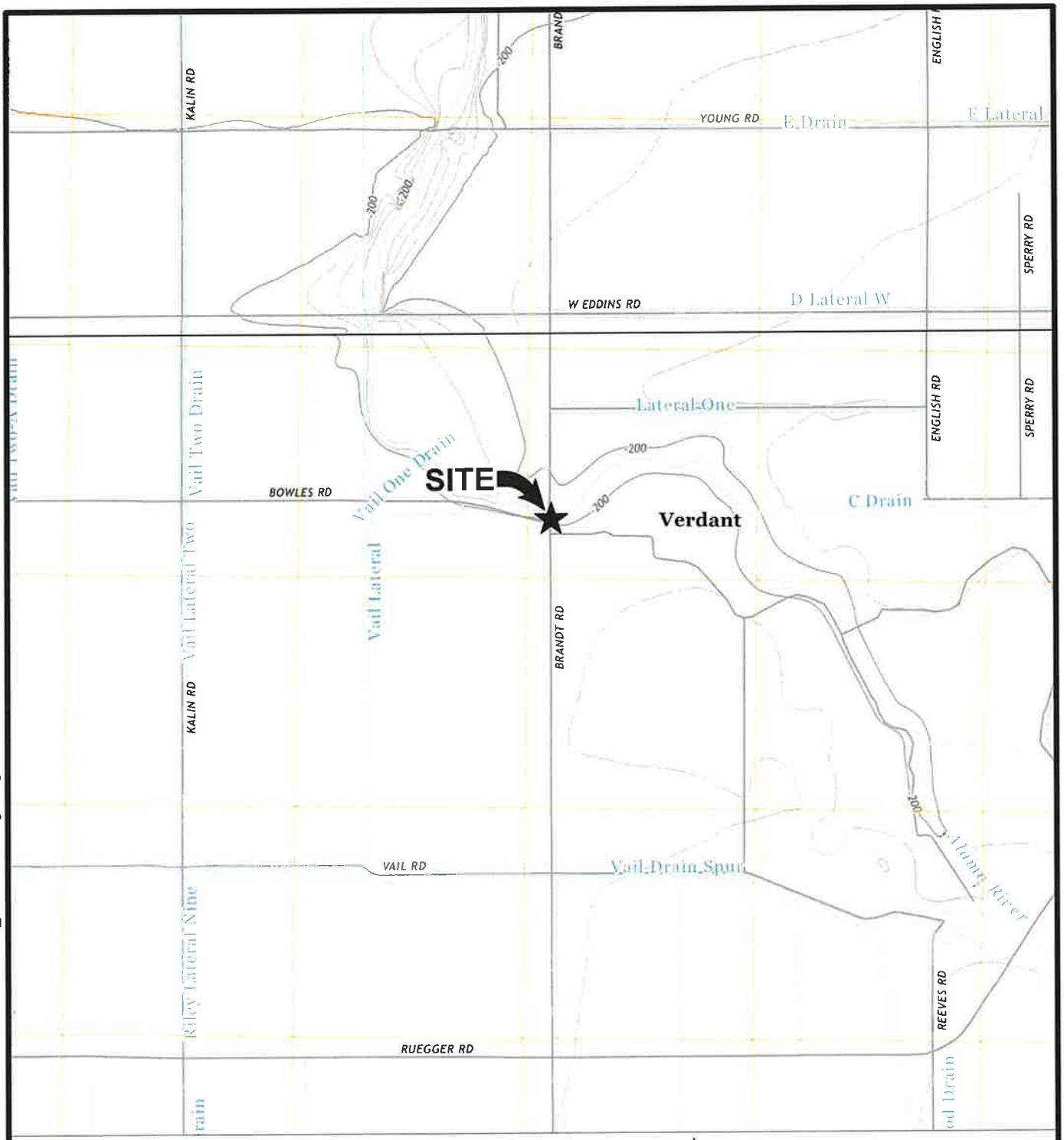
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FIGURES

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SOURCE: U.S.G.S. 7.5' topographic series, Niland and Westmorland East, California quadrangles, dated 2021.

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APPROXIMATE SCALE (feet)

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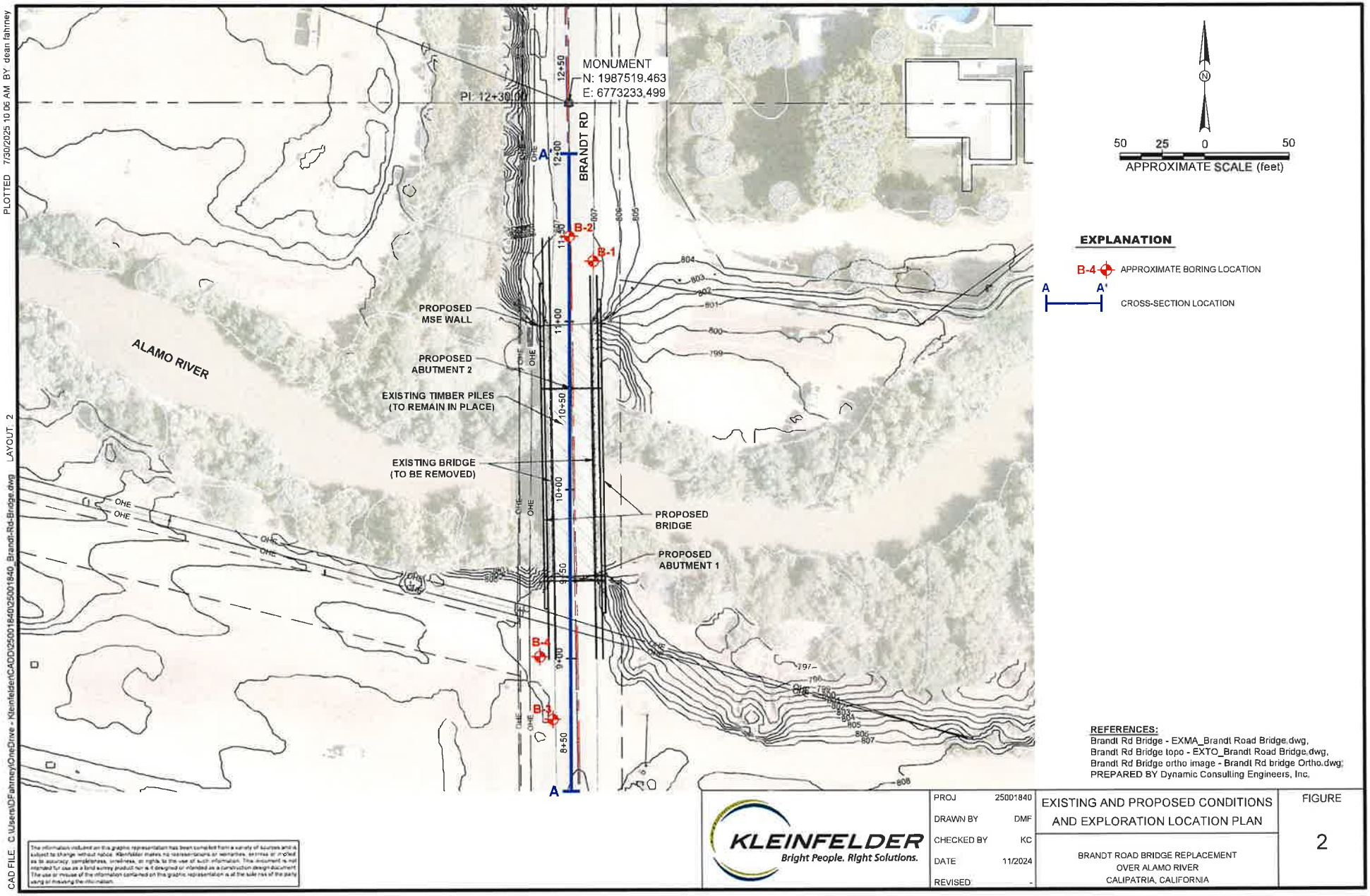
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DATE:	11/2024
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SITE VICINITY MAP

BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA

FIGURE
1

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REFERENCES:
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Brandt Rd Bridge topo - EXTO_Brandt Road Bridge.dwg,
Brandt Rd Bridge ortho image - Brandt Rd bridge Ortho.dwg;
PREPARED BY Dynamic Consulting Engineers, Inc.

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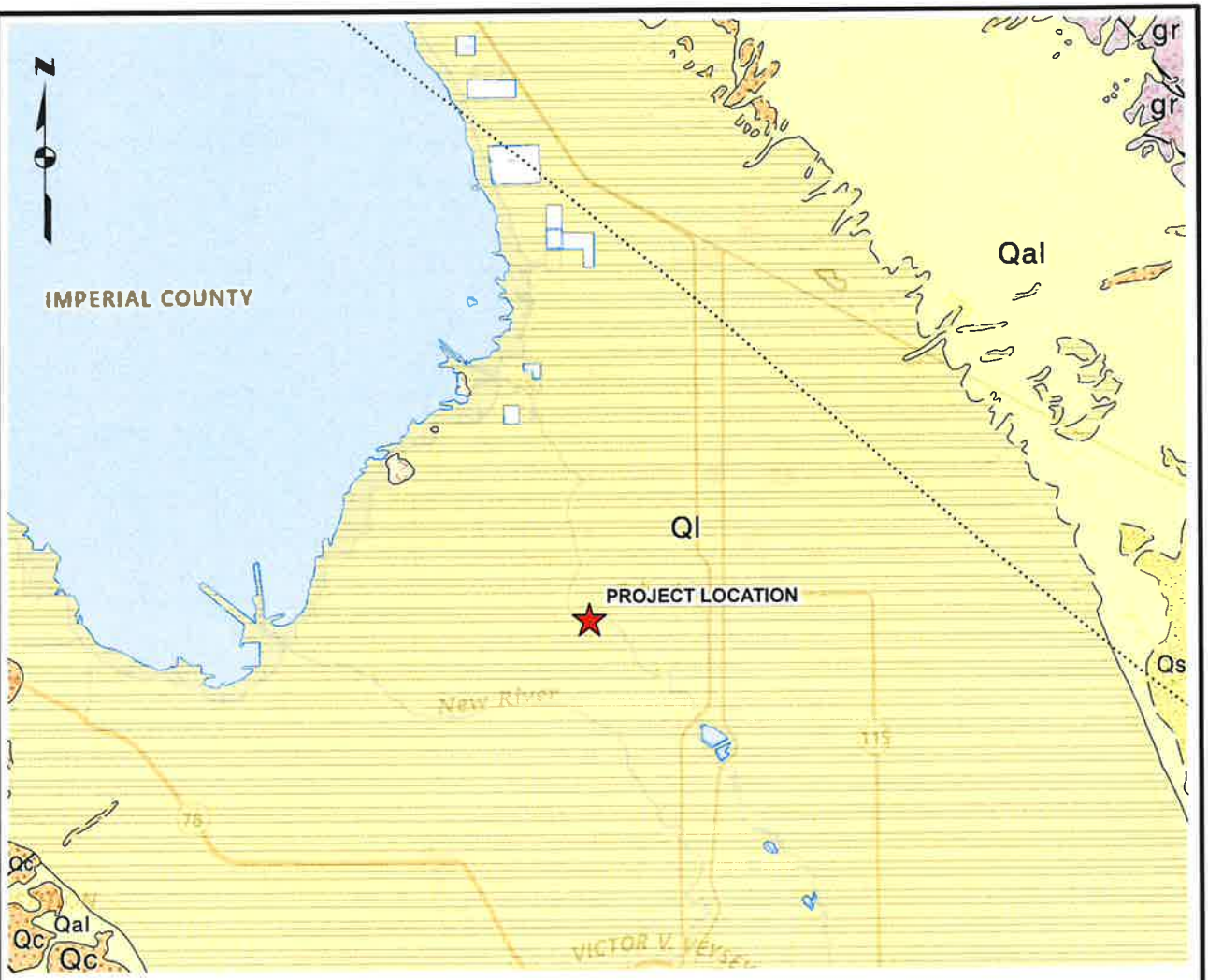
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EXISTING AND PROPOSED CONDITIONS AND EXPLORATION LOCATION PLAN

BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA

FIGURE
2

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LEGEND

- Qal - RECENT ALLUVIUM
- Qc - PLEISTOCENE NONMARINE SEDIMENTARY DEPOSITS
- Ql - QUATERNARY LAKE DEPOSITS
- Qrvr - RECENT VOLCANIC ROCKS - RHYOLITIC
- Qs - RECENT SAND DUNE
- gr - MESOZOIC GRANITIC ROCKS - UNDIFFERENTIATED

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0 6
Kilometers

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USGSTopo: USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road data; Natural Earth Data; U.S. Department of State HIU; NOAA National Centers for Environmental Information. Data refreshed April, 2024.

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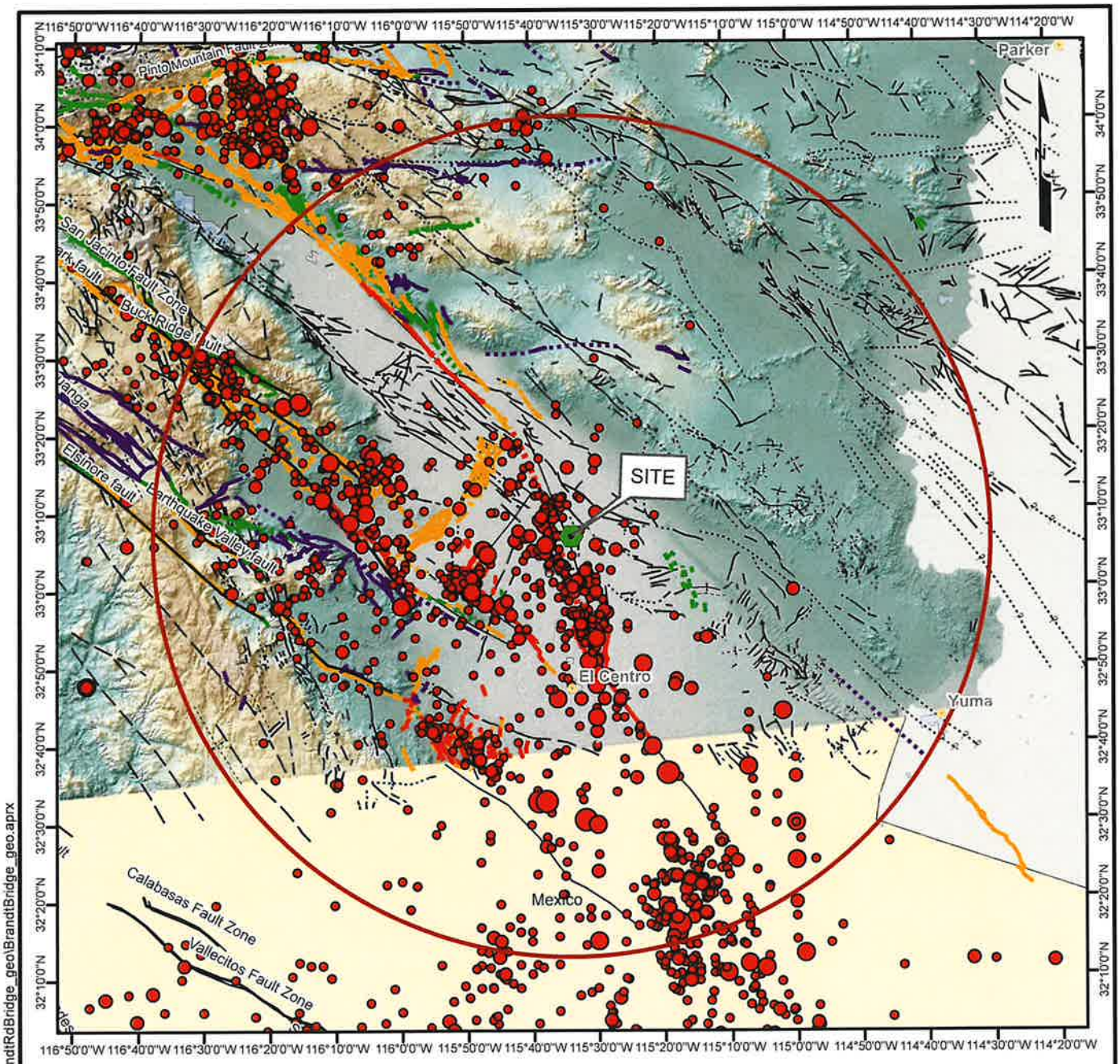
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REGIONAL GEOLOGIC MAP

BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA

FIGURE
3

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Faulting Legend

Quaternary Faults (Bryant, 2005; USGS, 2018)

Historic displacement (< 150 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Late Quaternary displacement (< 750,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Holocene displacement (< 15,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Quaternary & unspecified displacement (< 1,600,000 years)
- Mapped Fault Location
- Dashed were Approximated
- Concealed

Pre-Quaternary Geologic Structures (CGS, 2000)
- fault, approx. located
- fault, approx. located, queried
- fault, certain
- fault, concealed
- fault, concealed, queried
- fault, inferred, queried

ANSS Earthquakes

Magnitude
- 4.0 - 4.9
- 5.0 - 5.9
- 6.0 - 6.9
- 7.0 - 7.9
- 8.0 - 8.9

0 35 Kilometers

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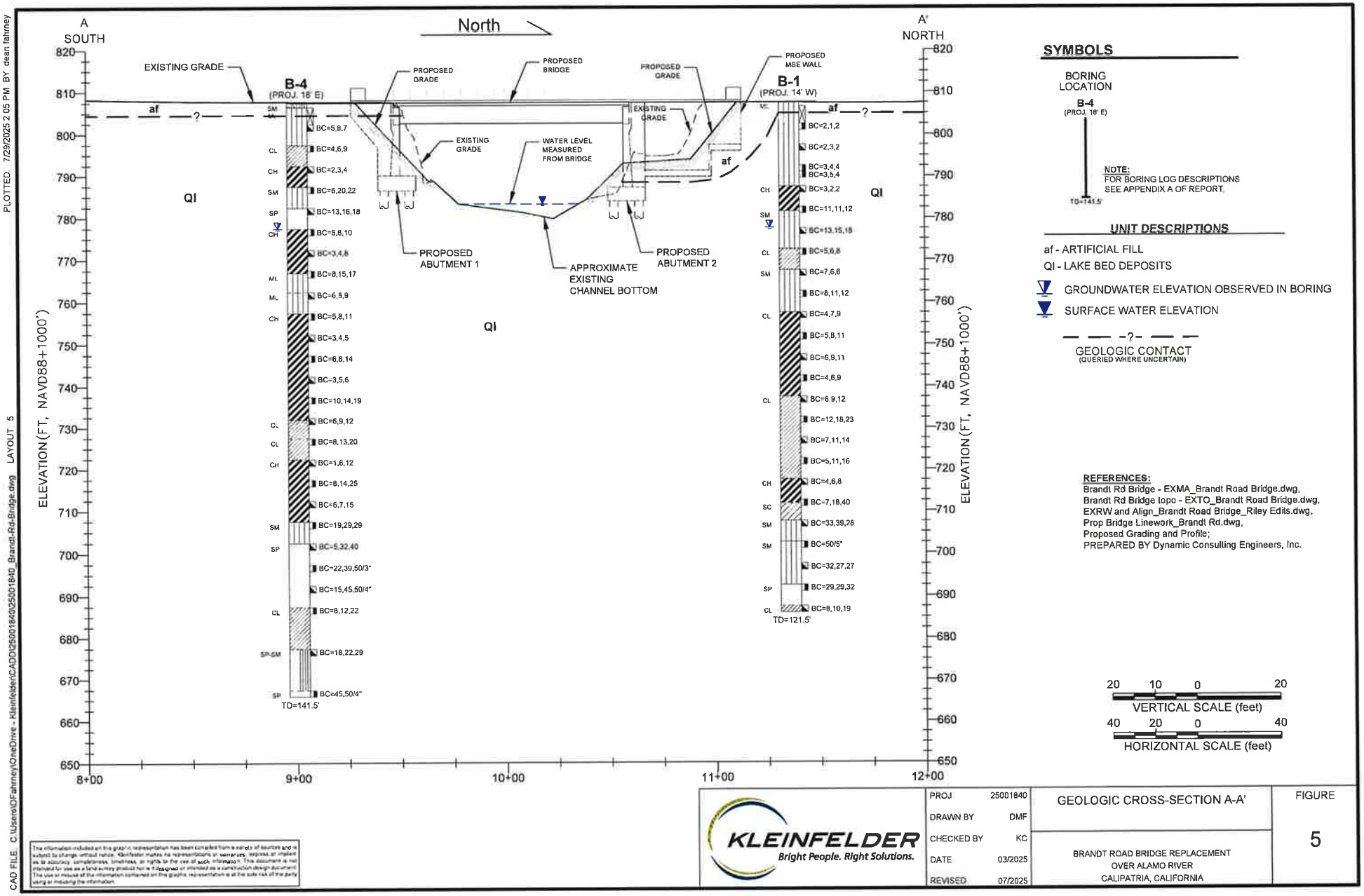
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REGIONAL FAULT MAP AND EARTHQUAKE EPICENTERS (1800 - JULY 2025)

BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA

FIGURE
4

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SYMBOLS

BORING LOCATION
B-4
(PROJ. 18' E)
TD=141.5'

NOTE:
FOR BORING LOG DESCRIPTIONS SEE APPENDIX A OF REPORT.

UNIT DESCRIPTIONS

af - ARTIFICIAL FILL

QI - LAKE BED DEPOSITS

GROUNDWATER ELEVATION OBSERVED IN BORING

SURFACE WATER ELEVATION

GEOLOGIC CONTACT
(QUERIED WHERE UNCERTAIN)

REFERENCES:
Brandt Rd Bridge - EXMA_Brandt Road Bridge.dwg,
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EXRW and Align_Brandt Road Bridge_Riley Edits.dwg,
Prop Bridge Linework_Brandt Rd.dwg,
Proposed Grading and Profile;
PREPARED BY Dynamic Consulting Engineers, Inc.

20 10 0 20
VERTICAL SCALE (feet)
40 20 0 40
HORIZONTAL SCALE (feet)

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PROJ	25001840
DRAWN BY	DMF
CHECKED BY	KC
DATE	03/2025
REVISED	07/2025

GEOLOGIC CROSS-SECTION A-A'

BRANDT ROAD BRIDGE REPLACEMENT
OVER ALAMO RIVER
CALIPATRIA, CALIFORNIA

FIGURE
5

PLOTTED 7/29/2025 2:05 PM BY dean fahrney
CAD FILE C:\Users\DFahrney\OneDrive - Kleinfelder\CAD\25001840\25001840_Brandt-Rd-Bridge.dwg LAYOUT 5

APPENDIX A

BOREHOLE LOGS

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APPENDIX A
BOREHOLE LOGS

The exploratory borings, designated as B-1 through B-4 were drilled by Pacific Drilling Co. between September 17th and September 20th, 2024, using a truck-mounted drill rig equipped with 6-inch outer-diameter hollow stem augers and a 4-inch-diameter tri-cone roller bit. Borings B-2 and B-3 were completed using hollow stem auger (HSA) techniques to a termination depth of approximately 5 feet below ground surface (bgs), or approximate elevations of +802 ft and +802.4 ft, respectively. Borings B-1 and B-4 were located near the existing abutments and were completed using HSA techniques in the upper materials to a depth of approximately 20 feet bgs before converting to rotary wash drilling techniques. Borings B-1 and B-4 were extended to termination depths of approximately 121½ and 141½ feet bgs, or approximate elevations of +686 and +666 feet, respectively.

A Unified Soil Classification System (USCS) chart, graphics key, and borehole log legend are presented in Appendix A in addition to the borehole logs. The borehole logs describe the earth materials encountered, samples obtained and show results of field and select laboratory tests. The boundaries between soil types shown on the logs are approximate as the transition between different soil layers may be gradual.

The boreholes were logged by our field engineer who collected bulk and intact samples of encountered materials for further evaluation and laboratory testing. In-place soil samples were obtained at the test boring locations using a Standard Penetration Test (SPT) or California-type Samplers driven a total of 18 inches (or until practical refusal) into the undisturbed soil at the bottom of the borehole. The soil sampled by the SPT (2-inch outer diameter) or Modified California-type sampler (2.5-inch outer diameter) was returned to our laboratory for testing. The samplers and associated rods were driven using a 140-pound automatic hammer falling 30 inches. The number of hammer blows to drive the samplers every 6 inches is recorded on the boring logs. The total number of hammer blows required to drive the sampler the final 12 inches is termed the blow count (or N-value). The blow count values are the field values and have not been corrected for effects such as overburden pressure, sampler size, sample depth, hammer efficiency, etc. on the boring logs.

Prior to drilling of the borings, a utility mark-out was performed by SoCal Locators using various geophysical survey equipment. Additionally, prior to the start of drilling, the first 5 to 6 feet of each borehole was advanced via a manual hand auger to further clear for utilities. Upon completion, the boreholes were backfilled with bentonite and grout and patched at the surface with Aquaphalt.

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DRILLING METHOD/SAMPLER TYPE GRAPHICS

BULK SAMPLE

MODIFIED CALIFORNIA SAMPLER
(2 or 2-1/2 in. (50.8 or 63.5 mm.) outer diameter)

STANDARD PENETRATION SPLIT SPOON SAMPLER
(2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)

GROUND WATER GRAPHICS

WATER LEVEL (level where first observed)

WATER LEVEL (level after stabilizing period)

WATER LEVEL (additional levels after exploration)

OBSERVED SEEPAGE

NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Solid lines separating strata on the logs represent approximate boundaries only, dashed lines are inferred or extrapolated boundaries. Actual transitions may be gradual or differ from those represented.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System (ASTM D2488/D2487) designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, ie., CL-ML, GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.
- If sampler is not able to be driven at least 6 inches then 50/X indicates number of blows required to drive the identified sampler X inches with a 140 pound hammer falling 30 inches.

ABBREVIATIONS
C_u - Coefficients of Uniformity
C_c - Coefficients of Curvature
WOH - Weight of Hammer
WOR - Weight of Rod

REFERENCES
1. American Society for Testing and Materials (ASTM), 2011, ASTM D2487: Classification of Soils for Engineering Purposes (Unified Soil Classification System).

UNIFIED SOIL CLASSIFICATION SYSTEM[1]

COARSE GRAINED SOILS (More than 50% retained on No. 200 Sieve)	GRAVELS (More than 50% of coarse fraction retained on No. 4 Sieve)	CLEAN GRAVEL WITH <5% FINES	GW	WELL-GRADED GRAVEL, WELL-GRADED GRAVEL WITH SAND
			GP	POORLY GRADED GRAVEL, POORLY GRADED GRAVEL WITH SAND
		GRAVELS WITH 5% TO 12% FINES	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 SILT 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 (OR SILTY CLAY AND SAND)
		GRAVELS WITH > 12% FINES	GM	SILTY GRAVEL, SILTY GRAVEL WITH SAND
			GC	CLAYEY GRAVEL, CLAYEY GRAVEL WITH SAND
			GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL WITH SAND
	SANDS (50% or more of coarse fraction passes the No. 4 Sieve)	CLEAN SANDS WITH <5% FINES	SW	WELL-GRADED SAND, WELL-GRADED SAND WITH GRAVEL
			SP	POORLY GRADED SAND, POORLY GRADED SAND WITH GRAVEL
		SANDS WITH 5% TO 12% FINES	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, POORLY GRADED SAND WITH CLAY AND GRAVEL (OR SILTY CLAY AND GRAVEL)
		SANDS WITH > 12% FINES	SM	SILTY SAND, SILTY SAND WITH GRAVEL
			SC	CLAYEY SAND, CLAYEY SAND WITH GRAVEL
			SC-SM	SILTY, CLAYEY SAND, SILTY, CLAYEY SAND WITH GRAVEL
FINE GRAINED SOILS (50% or more passes the No. #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)		ML	SILT, SILT WITH SAND, SILT WITH GRAVEL
			CL	LEAN CLAY, LEAN CLAY WITH SAND, LEAN CLAY WITH GRAVEL
			CL-ML	SILTY CLAY, SILTY CLAY WITH SAND, SILTY CLAY WITH GRAVEL
			OL	ORGANIC CLAY, ORGANIC CLAY WITH SAND, ORGANIC CLAY WITH GRAVEL, ORGANIC SILT, ORGANIC SILT WITH SAND, ORGANIC SILT WITH GRAVEL
	SILTS AND CLAYS (Liquid Limit 50 or greater)		MH	ELASTIC SILT, ELASTIC SILT WITH SAND, ELASTIC SILT WITH GRAVEL
			CH	FAT CLAY, FAT CLAY WITH SAND, FAT CLAY WITH GRAVEL
			OH	ORGANIC CLAY, ORGANIC CLAY WITH SAND, ORGANIC CLAY WITH GRAVEL, ORGANIC SILT, ORGANIC SILT WITH SAND, ORGANIC SILT WITH GRAVEL

NOTE: USE MATERIAL DESCRIPTION ON THE LOG TO DEFINE A GRAPHIC THAT MAY NOT BE PROVIDED ON THIS LEGEND.

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PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY: KC
DATE: 3/21/2025

GRAPHICS KEY

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-1

gINT FILE K:\gint_master_2025
gINT TEMPLATE E:\KLF_STANDARD_LIB\INT_LIBRARY_2025.GLB [_KLF_GEO_LEG1_GRAPHICS_KEY_W_USCS]
PROJECT NUMBER 25001840.001A
OFFICE FILTER SAN DIEGO
PLOTTED 07/29/2025 12:47 PM BY ABiggs

GRAIN SIZE[1]

DESCRIPTION		SIEVE SIZE	GRAIN SIZE
Boulders		>12 in.	>12 in. (304.8 mm.)
Cobbles		3 - 12 in.	3 - 12 in. (76.2 - 304.8 mm.)
Gravel	coarse	3/4 -3 in.	3/4 -3 in. (19 - 76.2 mm.)
	fine	#4 - 3/4 in.	0.19 - 0.75 in. (4.8 - 19 mm.)
Sand	coarse	#10 - #4	0.079 - 0.19 in. (2 - 4.9 mm.)
	medium	#40 - #10	0.017 - 0.079 in. (0.43 - 2 mm.)
	fine	#200 - #40	0.0029 - 0.017 in. (0.07 - 0.43 mm.)
Fines		Passing #200	<0.0029 in. (<0.07 mm.)

SECONDARY CONSTITUENT[1]

Term of Use	AMOUNT	
	Secondary Constituent is Fine Grained	Secondary Constituent is Coarse Grained
Trace	<5%	<15%
With	≥5 to <15%	≥15 to <30%
Modifier	≥15%	≥30%

PLASTICITY[1]

DESCRIPTION	CRITERIA
Non-Plastic	A 1/8 in. (3 mm) 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. The thread 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.

MOISTURE CONTENT[1]

DESCRIPTION	FIELD TEST
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

CONSISTENCY - FINE-GRAINED SOIL[2,3]

CONSISTENCY	SPT - N (# blows / ft)	Pocket Pen (tsf)	UNCONFINED COMPRESSIVE STRENGTH (Q_u)(psf)	VISUAL / MANUAL CRITERIA
Very Soft	<2	PP < 0.25	<500	Easily penetrated several inches by fist
Soft	2 - 4	0.25 ≤ PP <0.5	500 - 1,000	Easily penetrated several inches by thumb
Medium Stiff	4 - 8	0.5 ≤ PP <1	1,000 - 2,000	Can be penetrated several inches by thumb with moderate effort
Stiff	8 - 15	1 ≤ PP <2	2,000 - 4,000	Readily indented by thumb but penetrated only with great effort
Very Stiff	15 - 30	2 ≤ PP <4	4,000 - 8,000	Readily indented by thumbnail
Hard	>30	4 ≤ PP	>8,000	Indented by thumbnail with difficulty

APPARENT DENSITY - COARSE-GRAINED SOIL[2]

APPARENT DENSITY	SPT-N (# blows / ft)
Very Loose	<4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	>50

STRUCTURE[1]

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4-in. (6mm) thick, note thickness.
Laminated	Alternating layers of varying material or color with the layers less than 1/4-in. (6 mm) thick, note thickness.
Fissured	Breaks along definite planes of fracture with little resistance to fracturing.
Slickensided	Fracture planes appear polished or glossy, sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness.
Homogeneous	Same color and appearance throughout

ANGULARITY[1]

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces.
Subangular	Particles are similar to angular description but have rounded edges.
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges.
Rounded	Particles have smoothly curved sides and no edges.

REACTION WITH HYDROCHLORIC ACID[1]

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

CEMENTATION[1]

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or little finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

REFERENCES

1. American Society for Materials and Testing (ASTM), 2017, ASTM D2488: Standard Practice for Description and Identification of Soils (Visual Manual Procedures).
2. Terzaghi, K and Peck, R., 1948, Soil Mechanics in Engineering Practice, John Wiley & Sons, New York.
3. United States Department of the Interior Bureau of Reclamation (USBR), 1998, Earth Manual, Part I.

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PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY: KC
DATE: 3/21/2025

SOIL DESCRIPTION KEY
(For additional tables, see ASTM D2488)

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-2

gINT FILE NF.gnt master_2025 gINT TEMPLATE E KLF_STANDARD_GINT_LIBRARY_2025.GLB [KLF_GEO_LEG2_SOIL_DESC_KEY] PROJECT NUMBER 25001840.001A OFFICE FILLER SAN DIEGO PLOTTED 03/21/2025 09:33 AM BY ABriggs

BORING LOG B-1

Date Begin - End:	9/17/2024 - 9/18/2024	**Drilling Company:**	Pacific Drilling
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.

Hammer Type - Drop: 140 lb. Auto - 30 in.

FIELD EXPLORATION

Latitude: 33.11826°
Longitude: -115.56258°
Approximate Ground Surface Elevation (ft.): 807.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
805	0		**Artificial Fill (af)** **Sandy SILT (ML)**: fine grained sand, low plasticity, yellowish red (5YR 5/6), moist	S-1				ML	5.1			62			9/17/2024-begin drilling
			Lake Bed Deposits (Ql) **Sandy SILT (ML)**: fine grained sand, low plasticity, yellowish red (5YR 5/6), moist												
800	5		- very soft, trace sub-angular gravel	S-2		BC=2 1 2	18"	ML					21	3	
795	10		- non-plastic, brownish yellow, medium stiff, homogeneous, trace mica	S-3		BC=2 3 2	12"	ML	8.2		100	71			easy drilling
	15			S-4		BC=3 4 4	NR"								
790				S-4		BC=3 5 4	3"	ML	11.7	88.8					
785	20		**Sandy CLAY (CH)**: high plasticity, grayish brown (10YR 6/4), moist, soft, homogeneous	S-5		BC=3 2 2 PP=0.5	18"	CH				75	65	39	convert to mud after 20 ft sample is obtained
780	25		**Silty SAND (SM)**: fine grained sand, non-plastic, light yellowish brown (10YR 6/4), wet, medium dense, trace mica	S-6		BC=11 11 12	12"	CH	23.1	92.4					
775	30		- light brown (7.5YR 6/4), dense, homogeneous	S-7		BC=13 15 18	16"	SM			100	14			

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PROJECT NO.:	25001840.001A
DRAWN BY:	AB
CHECKED BY:	KC
DATE:	3/27/2025

BORING LOG B-1

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-3

PLOTTED 07/24/2025 02:06 PM BY ABriggs
gINT FILE kf_gint_master_2025 gINT TEMPLATE E:\KLF_STANDARD_GINT_LIBRARY_2026.GLB [KLF_BORING/TEST PIT SOIL LOG] PROJECT NUMBER 25001840.001A OFFICE FILTER SAN DIEGO

BORING LOG B-1

Date Begin - End:	9/17/2024 - 9/18/2024	**Drilling Company:**	Pacific Drilling
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.

Hammer Type - Drop: 140 lb. Auto - 30 in.

FIELD EXPLORATION

Latitude: 33.11826°
Longitude: -115.56258°
Approximate Ground Surface Elevation (ft.): 807.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
770			**Lake Bed Deposits (Ql), Continued** **Lean CLAY (CL)**: medium plasticity, brown (7.5YR 5/4), wet, stiff, blocky and slickensided	S-8		BC=5 6 8	18"	CL	28.7	86.7		99	32	11	
	40		**Silty SAND (SM)**: fine grained sand, non-plastic, brown (7.5YR 5/4), wet, medium dense, homogeneous	S-9		BC=7 6 6	14"	SM	24.8						
765															
	45			S-10		BC=8 11 12	NR"								
760															
	50		**Fat CLAY (CH)**: medium to high plasticity, strong brown (7.5YR 4/6), wet, very stiff, homogenous, blocky fracturing, slickensided	S-11		BC=4 7 9	18"	CH					72	46	easy drilling
755															
	55		- medium plasticity	S-12		BC=5 8 11	18"	CH	38.0						
750															
	60		- high plasticity, moist	S-13		BC=6 9 11	18"	CH							
745															
	65		- grades to brown (7.5 YR 4/2)	S-14		BC=4 6 9 PP=0.25	16"	CH					74	50	
740															

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PROJECT NO.:	25001840.001A
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DATE:	3/27/2025

BORING LOG B-1

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-4

gINT FILE: Klf_gint_master_2025
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2025.GLB [__KLF_BORING/TEST PIT SOIL LOG]
PROJECT NUMBER: 25001840.001A
OFFICE FILTER: SAN DIEGO
PLOTTED: 07/24/2025 02:06 PM BY: ABriggs

Date Begin - End:	9/17/2024 - 9/18/2024	**Drilling Company:**	Pacific Drilling	**BORING LOG B-1**	
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary		
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.		

Latitude: 33.11826°
Longitude: -115.56258°
Approximate Ground Surface Elevation (ft.): 807.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			FIELD EXPLORATION					LABORATORY RESULTS							
735			**Lake Bed Deposits (Ql), Continued** **Lean CLAY (CL)**: low to medium plasticity, brown (7.5YR 4/2), moist, very stiff, homogenous, slickensided, blocky fracturing/feathered fractures	S-15		BC=6 9 12 PP=1.5	17"	CL							end drilling for the day after 70 ft sample is obtained
730	75		- trace mica	S-16		BC=12 18 23	12"	CL							**Direct Shear=** Peak Cohesion: 252 psf Peak Friction Angle: 30.6° 9/18/2024-take first sample for the day
725	80		- medium plasticity, brown (7.5YR 5/3), wet, slightly slickensided	S-17		BC=7 11 14	16"	CL							
720	85			S-18		BC=5 11 16	18"	CL							
715	90		**Fat CLAY (CH)**: high plasticity, brown (7.5YR 5/3), wet, stiff, homogenous, slickensided	S-19		BC=4 6 8 PP=0.5	16"	CH	30.0				56	33	
710	95		- medium plasticity **Clayey SAND (SC)**: fine grained sand, low to medium plasticity, brown (7.5YR 5/2), wet, very dense, homogenous, trace mica	S-20		BC=7 18 40	18"	CH	25.3	81.2					
705	100		**Silty SAND (SM)**: fine grained sand, non-plastic, light brown (7.5YR 6/4), moist, very dense, lamination of light brown (7.5YR 6/4) and reddish yellow (7.5YR 6/8)	S-21		BC=33 39 28	14"	SM	11.3						

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PROJECT NO.:	25001840.001A
DRAWN BY:	AB
CHECKED BY:	KC
DATE:	3/27/2025

BORING LOG B-1

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-5

gINT FILE kf_gint_master_2025.GPJ gINT TEMPLATE E:\KF_STANDARD_GINT_LIBRARY_2025.GDT [__KLF_BORING/TEST PIT SOIL LOG] PROJECT NUMBER 25001840.001A OFFICE FILTER SAN DIEGO PLOTTED 07/24/2025 02:06 PM BY ABriggs

Date Begin - End:	9/17/2024 - 9/18/2024	**Drilling Company:**	Pacific Drilling	**BORING LOG B-1**	
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary		
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.		

Latitude: 33.11826°
Longitude: -115.56258°
Approximate Ground Surface Elevation (ft.): 807.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Lake Bed Deposits (Ql), Continued **Silty SAND (SM)**: no laminations	S-22		BC=50/5"	5"	SM							
700															
	110		- grades to brown (7.5YR 5/4), with black laminations	S-23		BC=32 27 27	15"	SM							
695															
	115		**Poorly Graded SAND with Silt (SP-SM)**: fine grained sand, non-plastic, brown (7.5YR 5/4), wet, very dense	S-24		BC=29 29 32	12"	SP-SM	24.0	88.5					
690															
	120		**Sandy CLAY (CL)**: medium plasticity, brown (7.5YR 5/2), moist, very stiff, homogenous	S-25		BC=8 10 19 PP=0.5	18"	CL							
685															
	125														
680															
	130														
675															
	135														
670															

The boring was terminated at approximately 121.5 ft. below ground surface. The boring was backfilled with bentonite and grout on September 18, 2024.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered prior to converting to mud rotary.
Introduction of drill fluids took place at 20 feet bgs.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Dynamic Consulting Engineers, Inc., using NAVD88+1000'.

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PROJECT NO.:	25001840.001A
DRAWN BY:	AB
CHECKED BY:	KC
DATE:	3/27/2025

BORING LOG B-1

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-6

PAGE: 4 of 4

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Date Begin - End:	9/18/2024	**Drilling Company:**	Pacific Drilling	**BORING LOG B-2**	
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA		
Weather:	Sunny	**Exploration Diameter:**	6 in. O.D.		

Latitude: 33.11830°
Longitude: -115.56263°
Approximate Ground Surface Elevation (ft.): 807.00
Surface Condition: Asphalt

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
805	0		**ASPHALT**: 3.5 inches												
			AGGREGATE BASE: 8 inches	S-1				ML	4.7			65			R-Value= 53
			Artificial Fill (af)												Easy drilling
			Sandy SILT (ML): fine grained sand, yellowish brown, moist												
			Lake Bed Deposits (Ql)												
	5		**Sandy SILT (ML)**: fine grained sand, yellowish brown, moist												
800															
	10														
795															
	15														
790															
	20														
785															
	25														
780															
	30														
775															

The boring was terminated at approximately 5 ft. below ground surface. The boring was backfilled with auger cuttings and patched at surface on September 18, 2024.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Dynamic Consulting Engineers, Inc., using NAVD88+1000'.

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BORING LOG B-2

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-7

PAGE: 1 of 1

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Date Begin - End:	9/18/2024	**Drilling Company:**	Pacific Drilling	**BORING LOG B-3**	
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA		
Weather:	Sunny	**Exploration Diameter:**	6 in. O.D.		

Latitude: 33.11751°
Longitude: -115.56267°
Approximate Ground Surface Elevation (ft.): 807.50
Surface Condition: Asphalt

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
805	0		**ASPHALT**: 3.5 inches												
			AGGREGATE BASE: 8 inches	S-1				ML	9.1		100	81			R-Value= 39
			Artificial Fill (af)												
			Sandy SILT (ML): dark brown, moist, fine to medium grained sand												
			Lake Bed Deposits (Ql)												
800	5		**Sandy SILT (ML)**: dark brown, moist, fine to medium grained sand												
795	10														
790	15														
785	20														
780	25														
775	30														

The boring was terminated at approximately 5 ft. below ground surface. The boring was backfilled with auger cuttings and patched at surface on September 18, 2024.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Dynamic Consulting Engineers, Inc., using NAVD88+1000'.

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BORING LOG B-3

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-8
PAGE: 1 of 1

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PROJECT NUMBER 25001840.001A OFFICE FILTER SAN DIEGO

BORING LOG B-4

Date Begin - End:	9/18/2024 - 9/20/2024	**Drilling Company:**	Pacific Drilling
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.

Hammer Type - Drop: 140 lb. Auto - 30 in.

FIELD EXPLORATION

Latitude: 33.11756°
Longitude: -115.56269°
Approximate Ground Surface Elevation (ft.): 807.40
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
805	0		**Artificial Fill (af)** **Silty SAND with Gravel (SM)**: brown (7.5 YR 5/3) homogenous **Sandy SILT (ML)**: brown (7.5YR 5/3), moist	S-1				ML	9.9			83			pH= 7.9 **Resistivity**= 110 **Sulfates**= 0.060 **Chlorides**= 0.352 9/18/2024-begin drilling
			Lake Bed Deposits (Ql) **Sandy SILT (ML)**: brown (7.5YR 5/3), moist												
800	5		- light brown (7.5YR 6/4), very stiff	S-2		BC=5 8 7	18"	ML	8.6						
795	10		**Lean CLAY (CL)**: medium plasticity, brown (7.5YR 5/4), moist, stiff, homogenous	S-3		BC=4 6 9	18"	CL							pH= 8.1 **Sulfates**= 0.660 **Chlorides**= 0.374
790	15		**Fat CLAY (CH)**: high plasticity, brown (7.5YR 5/3), moist, medium stiff, trace mica, slickensided	S-4		BC=2 3 4	18"	CH							pH= 8.2 **Sulfates**= 0.108 **Chlorides**= 0.134 easy drilling
785	20		**Silty SAND (SM)**: fine grained sand, non-plastic, light brown (7.5YR 6/4), moist, dense	S-5		BC=6 20 22	18"	SM							pH= 8.5 **Sulfates**= 0.023 **Chlorides**= 0.016 convert ot mud rotary after 20 ft sample is obtained
780	25		**Poorly Graded SAND (SP)**: fine to medium grained sand, light brown (7.5YR 6/4), moist to wet, dense	S-6		BC=13 16 18	18"	SP							9/18/2024-stop drilling operations after 25 ft sample is obtained
775	30		**Fat CLAY (CH)**: high plasticity, brown (7.5YR 5/3), moist, very stiff, homogenous, slickensided, feather fractures	S-7		BC=5 8 10 PP=2.0	18"	CH					68	44	9/19/2024-take first sample for the day at 30 ft

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BORING LOG B-4

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-9

PAGE: 1 of 5

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Date Begin - End: 9/18/2024 - 9/20/2024 **Drilling Company:** Pacific Drilling

BORING LOG B-4

Logged By: A. Briggs **Drill Crew:** Miguel & Javier

Hor.-Vert. Datum: WGS 1984 - NAVD88 +1000 **Drilling Equipment:** Marl 10 **Hammer Type - Drop:** 140 lb. Auto - 30 in.

Plunge: -90 degrees **Drilling Method:** HSA/Mud Rotary

Weather: Sunny **Exploration Diameter:** 3.75 in. O.D.

Latitude: 33.11756°
Longitude: -115.56269°
Approximate Ground Surface Elevation (ft.): 807.40
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
770			**Lake Bed Deposits (Ql), Continued** **Fat CLAY (CH)**: stiff	S-8		BC=3 4 8 PP=2.0	18"	CH							
	40		**Sandy SILT (ML)**: fine grained sand, non-plastic, brown (7.5YR 5/4), moist, very stiff, homogenous	S-9		BC=8 15 17	18"	ML				60			**Direct Shear=** Peak Cohesion: 0 psf Peak Friction Angle: 33.7°
765															
	45		**SILT (ML)**: low plasticity, brown (7.5YR 5/4), moist, very stiff, iron oxide laminations approximately 0.5 inches apart	S-10		BC=6 8 9	16"	ML				99			
760															
	50		**Fat CLAY (CH)**: high plasticity, brown (7.5YR 5/3), moist, very stiff, homogenous, slickensided	S-11		BC=5 8 11 PP=2.5	18"	CH	32.5	77.7			76	48	
755															
	55		- stiff, feathered fracturing	S-12		BC=3 4 5 PP=0.5	18"	CH							
750															
	60		- very stiff, abundant slickensides	S-13		BC=6 8 14 PP=2.0	18"	CH				99			
745															
	65		- stiff, grades to brown (7.5YR 5/2)	S-14		BC=3 5 6 PP=1.5	18"	CH					53	32	
740															

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BORING LOG B-4

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-10

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Date Begin - End:	9/18/2024 - 9/20/2024	**Drilling Company:**	Pacific Drilling	**BORING LOG B-4**	
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary		
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.		

Latitude: 33.11756°
Longitude: -115.56269°
Approximate Ground Surface Elevation (ft.): 807.40
Surface Condition: Bare Earth

Approx. Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Lake Bed Deposits (Ql), Continued **Fat CLAY (CH)**: hard	S-15		BC=10 14 19 PP=2.5	18"	CH	30.5	79.4		95			
735															
	75		**Sandy CLAY (CL)**: fine grained sand, low plasticity, brown (7.5YR 5/3), moist, very stiff, feathered fractures, trace mica	S-16A S-16B		BC=6 9 12	18"	CL							
730															
	80		**Lean CLAY (CL)**: low plasticity, brown (7.5YR 5/3), moist, hard, blocky fracturing, micaceous	S-17		BC=8 13 20 PP=1.0	18"	CL	25.5	95.6					
725															
	85		**Fat CLAY (CH)**: high plasticity, brown (7.5YR 5/3), moist, very stiff, blocky fracturing, iron oxidation laminations	S-18		BC=1 6 12 PP=0.5	18"	CH							
720															
	90		**Sandy CLAY (CH)**: medium plasticity, brown (7.5 YR 5/3), moist, hard, no iron oxidation, feathered fracturing	S-19		BC=8 14 25 PP=1.5	16"	CH	24.7	95.2		69			
715															
	95		very stiff	S-20		BC=6 7 15	18"	CH							
710															
	100		**Silty SAND (SM)**: fine grained sand, non-plastic, brown (7.5YR 5/4), moist to wet, dense, homogenous	S-21		BC=19 29 29	18"	SM	22.0	93.4					
705															

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BORING LOG B-4

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-11

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BORING LOG B-4

Date Begin - End:	9/18/2024 - 9/20/2024	**Drilling Company:**	Pacific Drilling		
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary		
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.		

FIELD EXPLORATION

Latitude: 33.11756°
Longitude: -115.56269°
Approximate Ground Surface Elevation (ft.): 807.40
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
700			**Lake Bed Deposits (Ql), Continued** **Silty SAND (SP)**: fine grained sand, non-plastic, brown (7.5YR 5/4), moist to wet, very dense, homogenous	S-22		BC=5 32 40	15"	SM			100	23			
695	110		- brown (7.5YR 5/2), black laminations	S-23		BC=22 39 50/3"	12"	SM							
690	115		- black mottling	S-24		BC=15 45 50/4"	15"	SM							
685	120		**Lean CLAY (CL)**: low to medium plasticity, brown (7.5YR 5/2), moist, hard, homogenous	S-25		BC=8 12 22 PP=0.5	18"	CL							9/19/2024-stop drilling operations afer 120 ft sample is obtained
680	125														
675	130		**Poorly Graded SAND with Silt (SP-SM)**: fine grained sand, non-plastic, brown (7.5YR 5/3), moist, very dense, homogenous	S-26		BC=18 22 29	18"	SP-SM							9/20/2024-begin drilling operations for the day and take first sample at 130 ft
670	135														

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BORING LOG B-4

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-12

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Date Begin - End:	9/18/2024 - 9/20/2024	**Drilling Company:**	Pacific Drilling	**BORING LOG B-4**	
Logged By:	A. Briggs	**Drill Crew:**	Miguel & Javier		
Hor.-Vert. Datum:	WGS 1984 - NAVD88 +1000	**Drilling Equipment:**	Marl 10	**Hammer Type - Drop:**	140 lb. Auto - 30 in.
Plunge:	-90 degrees	**Drilling Method:**	HSA/Mud Rotary		
Weather:	Sunny	**Exploration Diameter:**	3.75 in. O.D.		

Latitude: 33.11756°
Longitude: -115.56269°
Approximate Ground Surface Elevation (ft.): 807.40
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. blows/6 in Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Lake Bed Deposits (Ql), Continued **Poorly Graded SAND (SP)**: fine to medium grained sand, light brown (7.5YR 6/3), moist to wet, trace iron oxidation	S-27		BC=45 50/4"	10"	SP							
665															
	145														
660															
	150														
655															
	155														
650															
	160														
645															
	165														
640															
	170														
635															

The boring was terminated at approximately 141.5 ft. below ground surface. The boring was backfilled with bentonite and grout on September 20, 2024.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not encountered prior to converting to mud rotary. However, PS logging in B-4 was performed that presented groundwater at approximately 30 ft bgs.

GENERAL NOTES:
The exploration location and elevation are approximate and were estimated by Dynamic Consulting Engineers, Inc., using NAVD88+1000'.

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BORING LOG B-4

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
A-13

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APPENDIX B

PS SUSPENSION VELOCITIES

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PS SUSPENSION VELOCITIES
CALIPATRIA, CALIFORNIA, BOREHOLE B-4

Prepared for

Kleinfelder, Inc.
770 First Avenue, Suite 400
San Diego, California 92101
(619) 434-0153

Prepared by

GEO*Vision* Geophysical Services
1124 Olympic Drive
Corona, California 92881
(951) 549 - 1234

October 31, 2024

Report 24354-01 Rev 0

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INTRODUCTION

GEO*Vision* acquired PS Suspension velocity data at 6430 Brandt Road, Calipatria, adjacent to the Brandt Road Bridge over the Alamo River. A GEOVision Professional Engineer reviewed fieldwork, data analysis, and report preparation. A summary of the instrumentation, methods, data analysis, and final results follows.

SCOPE OF WORK

This report presents the results of PS Suspension velocity data acquired in one borehole as detailed in Table 1. The purpose of these measurements was to supplement stratigraphic information by acquiring shear wave and compressional wave velocities as a function of depth.

The OYO PS Suspension Logging System was used to obtain in-situ horizontal shear (S_H), and compressional (P) wave velocity measurements in one uncased borehole at 1.6-foot intervals. Measurements followed **GEO***Vision* Procedure for PS Suspension Seismic Velocity Logging, revision 1.5. Acquired data were analyzed, and a profile of velocity versus depth was produced for both S_H and P waves.

A detailed reference for the PS Suspension velocity measurement techniques used in this study is:

> Guidelines for Determining Design Basis Ground Motions, Report TR-102293, Electric Power Research Institute, Palo Alto, California, November 1993, Sections 7 and 8.

Data were processed and compiled to generate profiles of the preceding parameters versus depth.

INSTRUMENTATION

Suspension Velocity

Suspension velocity measurements were performed using the suspension PS logging system, manufactured by OYO Corporation, and their subsidiary, Robertson Geo (RG). This system directly determines the average velocity of a 3.3-foot-high segment of the soil column surrounding the boring of interest by measuring the elapsed time between arrivals of a wave propagating upward through the soil column. The receivers that detect the wave, and the source that generates the wave, are moved as a unit in the boring producing relatively constant amplitude signals at all depths.

The suspension system probe consists of a combined reversible polarity solenoid horizontal shear-wave source (S_H) and compressional-wave source (P), joined to two biaxial receivers by a flexible isolation cylinder, as shown in Figure 1. The separation of the two receivers is 3.3 feet, allowing average wave velocity in the region between the receivers to be determined by inversion of the wave travel time between the two receivers. The total length of the probe as used in this survey is approximately 22 feet, with the center point of the receiver pair 12.5 feet above the bottom end of the probe.

The probe receives control signals from, and sends the digitized receiver signals to, instrumentation on the surface via an armored conductor cable. The cable is wound onto the drum of a winch and is used to support the probe. Cable travel is measured to provide probe depth data using a sheave of known circumference fitted with a digital rotary encoder.

The entire probe is suspended in the borehole by the cable; therefore, source motion is not coupled directly to the boring walls; rather, the source motion creates a horizontally propagating impulsive pressure wave in the fluid filling the boring and surrounding the source. This pressure wave is converted to P and S_H-waves in the surrounding soil and rock as it passes through the casing and grout annulus (if present) and impinges upon the wall of the boring. These waves propagate through the soil and rock surrounding the boring, in turn causing a pressure wave to be generated in the fluid surrounding the receivers as the soil waves pass their location. Separation of the P and S_H-waves at the receivers is performed using the following steps:

1. Orientation of the horizontal receivers is maintained parallel to the axis of the source, maximizing the amplitude of the recorded S_H-wave signals.
2. At each depth, S_H-wave signals are recorded with the source actuated in opposite directions, producing S_H-wave signals of opposite polarity, providing a characteristic S_H-wave signature distinct from the P-wave signal.
3. The 6.3-foot separation of source and receiver 1 permits the P-wave signal to pass and damp significantly before the slower S_H-wave signal arrives at the receiver.
4. In saturated soils, the received P-wave signal is typically of much higher frequency than the received S_H-wave signal, permitting additional separation of the two signals by low pass filtering.
5. Direct arrival of the original pressure pulse in the fluid is not detected at the receivers because the wavelength of the pressure pulse in fluid is significantly greater than the dimension of the fluid annulus surrounding the probe (feet versus inches scale), preventing significant energy transmission through the fluid medium.

In operation, a distinct, repeatable pattern of impulses is generated at each depth as follows:

1. The source is fired in one direction producing dominantly horizontal shear with some vertical compression, and the signals from the horizontal receivers situated parallel to the axis of motion of the source are recorded.
2. The source is fired again in the opposite direction and the horizontal receiver signals are recorded.
3. The source is fired again, and the vertical receiver signals are recorded. The repeated source pattern facilitates the picking of the P and S_H-wave arrivals; reversal of the source changes the polarity of the S_H-wave pattern but not the P-wave pattern.

The data from each receiver during each source activation is recorded as a different channel on the recording system. The Suspension PS system has six channels (two simultaneous recording channels), each with a 1024 sample record. The recorded data are displayed as six channels with a common time scale. Data are stored on disk for further processing.

Review of the displayed data on the recorder or computer screen allows the operator to set the gains, filters, delay time, pulse length (energy), and sample rate to optimize the quality of the data before recording.

Verification of the calibration of the Suspension P-S digital recorder is performed at least every twelve months using a NIST traceable frequency source and counter and **GEO***Vision* Suspension P-S Seismic Logger/Recorder Calibration Procedure Revision 2.1. Calibration records are reproduced in Appendix B.

MEASUREMENT PROCEDURES

Suspension Velocity

One borehole was logged with the PS Suspension tool. Measurements followed the **GEO***Vision* Procedure for PS Suspension Seismic Velocity Logging, revision 1.5. Prior to logging, the probe was positioned with the top of the probe even with a stationary reference point. The electronic depth counter was set to the distance between the mid-point of the receiver and the top of the probe, minus the height of the stationary reference point, if any, verified with a tape measure, and recorded on the field logs. The probe was lowered to the bottom of the borings, stopping at 1.6-foot intervals to collect data, as summarized in Table 2.

At each measurement depth the measurement sequence of two opposite horizontal records and one vertical record was performed, and the gains were adjusted as required. The data from each depth were viewed on the computer display, checked, and recorded to disk before moving to the next depth.

Upon completion of the measurements, the probe zero depth indication at the depth reference point was verified prior to removal from the boring.

DATA ANALYSIS

Suspension Velocity

Using the proprietary OYO program PSLOG.EXE version 1.0, the recorded digital waveforms were analyzed to locate the most prominent first minima, first maxima, or first break on the vertical axis records, indicating the arrival of P-wave energy. The difference in travel time between receiver 1 and receiver 2 (R1-R2) arrivals was used to calculate the P-wave velocity for that 3.3-foot (1.0 meter) segment of the soil column. When observable, P-wave arrivals on the horizontal axis records were used to verify the velocities determined from the vertical axis data. The time picks were then transferred into a Microsoft Excel® template to complete the velocity calculations based on the arrival time picks made in PSLOG. The Microsoft Excel® analysis files were previously delivered. Due to the longevity of this project, results were delivered at intervals as requested.

The P-wave velocity over the 6.3-foot interval from source to receiver 1 (S-R1) was also picked using PSLOG, and calculated and plotted in Microsoft Excel®, for a check of the reasonableness of the velocity derived from the travel time between receivers. In this analysis, the depth values as recorded were increased by 4.8 feet to correspond to the mid-point of the 6.3-foot S-R1 interval. Travel times were obtained by picking the first break of the P-wave signal at receiver 1 and subtracting the calculated and experimentally verified delay from source trigger pulse (beginning of record) to source impact. This delay corresponds to the duration of acceleration of the solenoid before impact.

As with the P-wave records, the recorded digital waveforms were analyzed to locate clear S_H-wave pulses, as indicated by the presence of opposite polarity pulses on each pair of horizontal records. Ideally, the S_H-wave signals from the 'normal' and 'reverse' source pulses are very nearly inverted images of each other. Digital Fast Fourier Transform – Inverse Fast Fourier Transform (FFT – IFFT) lowpass filtering was used to remove the higher frequency P-wave signal from the S_H-wave signal. Different filter cutoffs were used to separate P- and S_H-waves at different depths, ranging from 1000 Hz in the slowest zones to 2000 Hz in the regions of highest velocity. At each depth, the filter frequency was selected to be at least twice the fundamental frequency of the S_H-wave signal being filtered.

Generally, the first maxima were picked for the 'normal' signals and the first minima for the 'reverse' signals, although other points on the waveform were used if the first pulse was distorted. The absolute arrival time of the 'normal' and 'reverse' signals may vary by +/- 0.2 milliseconds, due to differences in the actuation time of the solenoid source caused by constant mechanical bias in the source or by boring inclination. This variation does not affect the R1-R2 velocity determinations, as the differential time is measured between arrivals of waves created by the same source actuation. The final velocity value is the average of the values obtained from the 'normal' and 'reverse' source actuations.

As with the P-wave data, S_H-wave velocity calculated from the travel time over the 6.3-foot interval from source to receiver 1 was plotted for verification of the velocity derived from the travel time between receivers. In this analysis, the depth values were increased by 4.8 feet to correspond to the mid-point of the 6.3-foot S-R1 interval. Travel times were obtained by picking the first break of the S_H-wave signal at the near receiver and subtracting the calculated and experimentally verified delay from the beginning of the record at the source trigger pulse to source impact.

Figure 2 shows an example of R1 - R2 measurements on a sample filtered suspension record. In Figure 2, the time difference over the 3.3-foot interval of 1.88 milliseconds for the horizontal signals is equivalent to an S_H-wave velocity of 1745 feet/second. Whenever possible, time differences were determined from several phase points on the S_H-waveform records to verify the data obtained from the first arrival of the S_H-wave pulse. Figure 3 displays the same record before filtering of the S_H-waveform record with a 1400 Hz FFT - IFFT digital lowpass filter, illustrating the presence of higher frequency P-wave energy at the beginning of the record, and distortion of the lower frequency S_H-wave by residual P-wave signal.

Vs30 Analysis

The average shear wave velocity in the upper 30 meters ($Vs30/V_{s100ft}$) was calculated using the NEHRP method. The PS Suspension logger measures directly the travel time over a 1-meter interval. However, data are logged at ½ meter intervals. The overlapped measurements (at nominal 0.5m intervals for your data) are overlapping travel times. It is not explicitly correct to use these as representing individual 0.5m interval velocities. As a result, it is necessary to interpolate to obtain a distance-weighted average Vs value at each 1-meter interval. These are then used to calculate the interval times, which are then accumulated to obtain the total travel time over 30 meters. Vs30 is calculated by dividing the 30-meter depth by this total travel time.

RESULTS

Suspension Velocity

Suspension R1-R2 P- and S_H-wave velocities for the borehole are plotted in Figure 4. These data are compiled in Table 3. The associated Microsoft Excel® analysis files accompany this report. Included in the analysis files are Poisson's Ratio calculations, tabulated data, and plots.

P- and S_H-wave velocity data from R1-R2 analysis and quality assurance analysis of S-R1 data are plotted together in Figure A-1 in Appendix A to aid in visual comparison. Note that R1-R2 data are an average velocity over a 3.3-foot segment of the soil column; S-R1 data are an average over 6.3 feet, creating a significant smoothing relative to the R1-R2 plots. The S-R1 velocity data displayed in this figure are also compiled in Table A-1.

Vs30 Results

Data acquisition started at 3.4 meters (11.1 ft) at the surface, so velocity data was extrapolated to the surface, using the first three available data points. The Vs30 for B-4 is 204 m/sec (669 ft/sec), or site class D.

* Site Classifications taken from Table 20.3-1. Site Class Definitions published in ASCE/SEI 7-16 on page 204 (2016).

DISCUSSION OF RESULTS

Suspension Velocity

Suspension PS velocity data are ideally collected in an uncased fluid filled borehole.

Suspension PS velocity data quality is judged based upon 5 criteria.

- Consistent data between receiver to receiver (R1 – R2) and source to receiver (S – R1) data.
- Consistency between data from adjacent depth intervals.
- Consistent relationship between P-wave and S_H -wave (excluding transition to saturated soils)
- Clarity of P-wave and S_H -wave onset, as well as damping of later oscillations.
- Consistency of profile between adjacent borings, if available.

Table 4 summarizes the evaluation of the borehole dataset with respect to these criteria.
These data indicate good consistency between R1-R2 and S-R1 velocities, and consistency between adjacent depths.

To improve reliability and minimize uncertainty, whenever possible, travel time differences were determined from several arrivals on the S_H-waveform records to verify the data obtained from the first arrival of the S_H-wave pulse. In addition, velocities from travel times from S-R1 were also determined and used to verify the velocities derived from the travel times between receivers R1-R2.

Quality Assurance

These borehole geophysical measurements were performed using industry-standard or better methods for measurements and analyses. All work was performed under **GEO***Vision* quality assurance procedures, which include:

- Use of NIST-traceable calibrations, where applicable, for field and laboratory instrumentation
- Use of standard field data logs
- Independent review of calculations and results by a registered professional engineer, geologist, or geophysicist.

Suspension Velocity Data Reliability

P- and S_H-wave velocity measurement using the Suspension Method gives average velocities over a 3.3-foot interval of depth. This high resolution results in the scatter of values shown in the graphs. Individual measurements are very reliable, with an estimated accuracy of +/- 5%. Depth indications are very reliable with an estimated accuracy of +/- 0.2 feet. Standardized field procedures and quality assurance checks contribute to the reliability of these data.

CERTIFICATION

All geophysical data, analysis, interpretations, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a **GEO***Vision* California Professional Geophysicist.

Prepared by

10/31/2024

Robert Steller
Senior Geophysicist
GEO*Vision* Geophysical Services

Date

Reviewed and approved by



10/31/2024

John Diehl
California Professional Engineer, P.E. 30362
GEO*Vision* Geophysical Services

Date

* This geophysical investigation was conducted under the supervision of a California Professional Geophysicist or Engineer using industry standard methods and equipment. A high degree of professionalism was maintained during all aspects of the project from the field investigation and data acquisition, through data processing, interpretation and reporting. All original field data files, field notes and observations, and other pertinent information are maintained in the project files and are available for the client to review for a period of at least one year.

  A professional geophysicist's certification of interpreted geophysical conditions comprises a declaration of his/her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances.

FIGURES

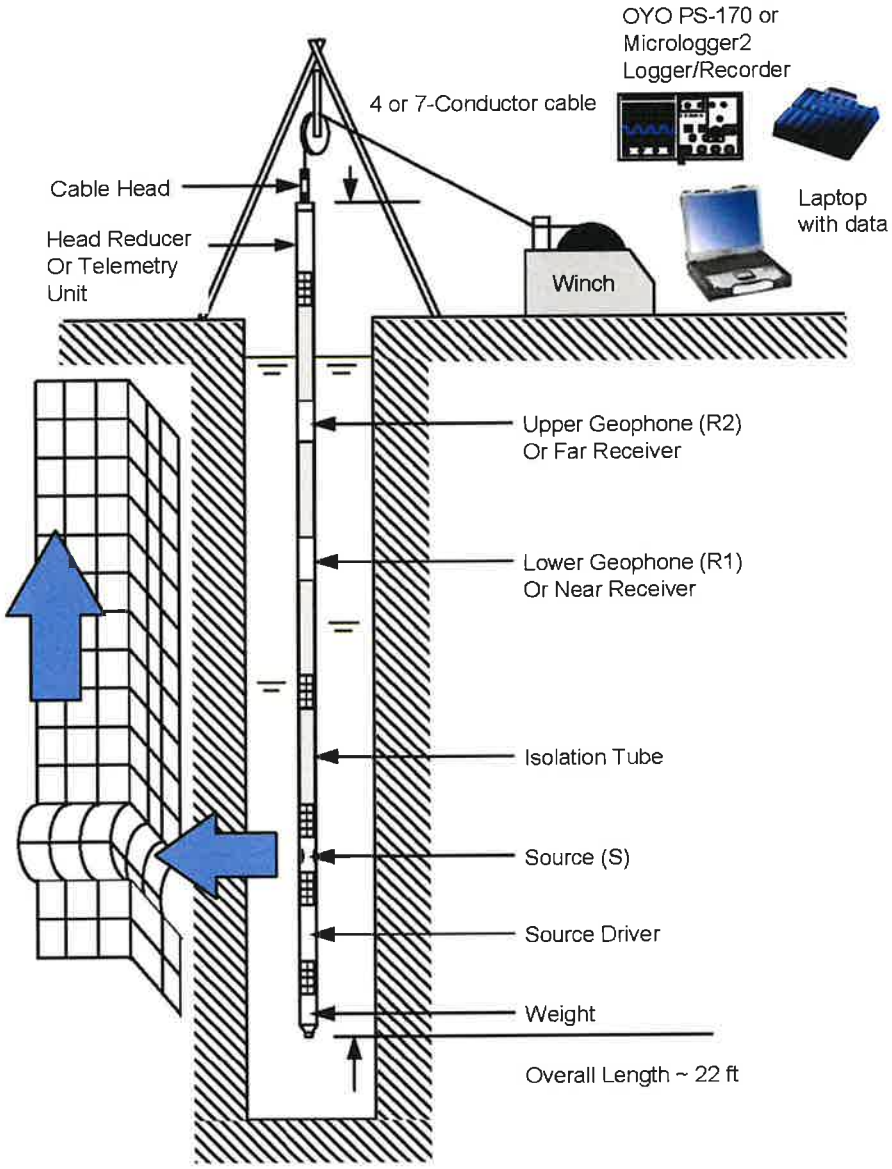


Figure 1: Concept illustration of P-S logging system

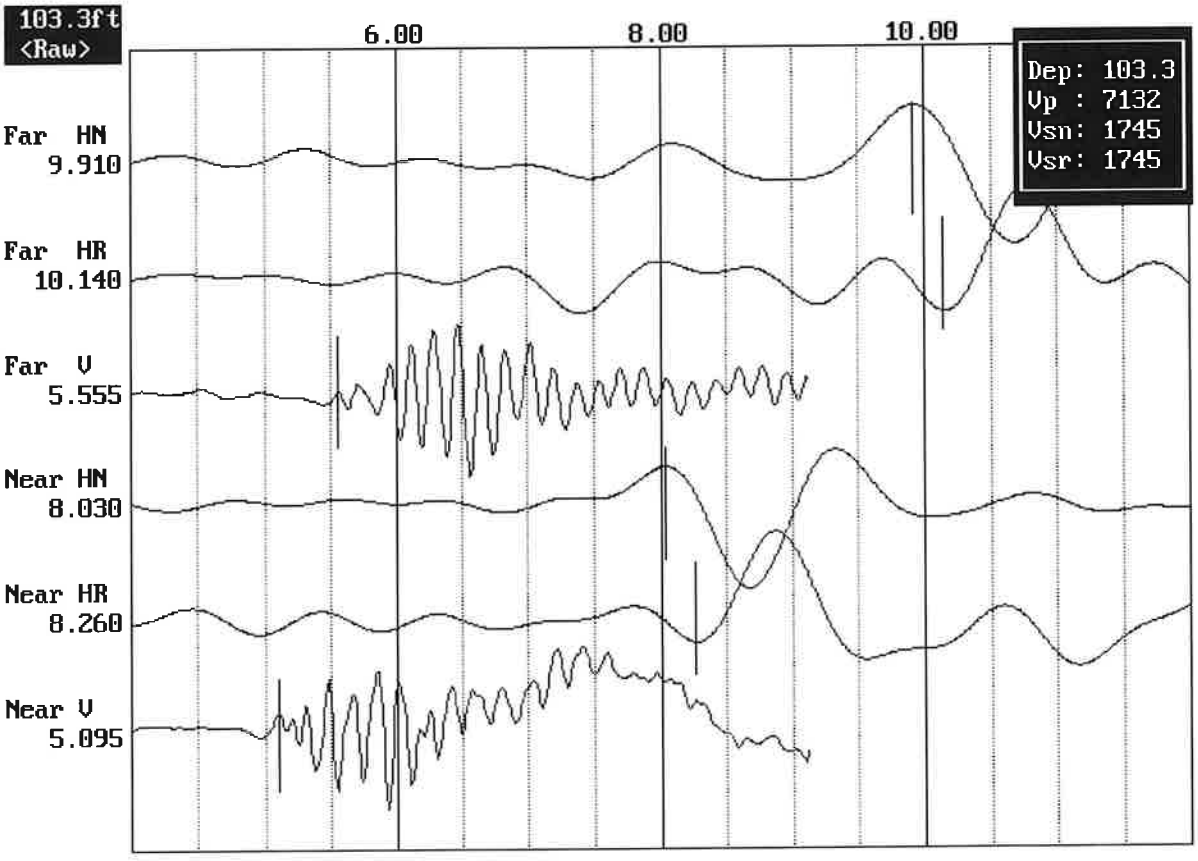


Figure 2: Example of filtered (1400 Hz lowpass) suspension record

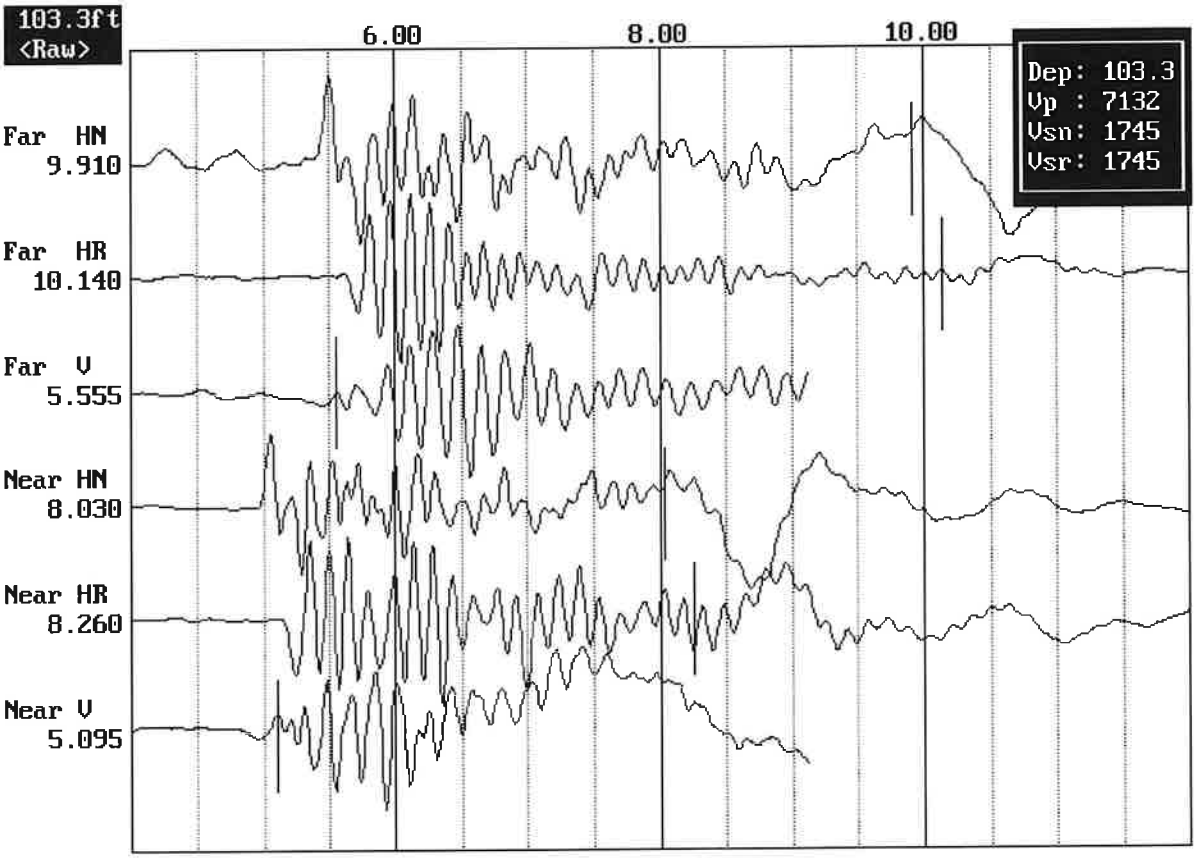


Figure 3. Example of unfiltered suspension record

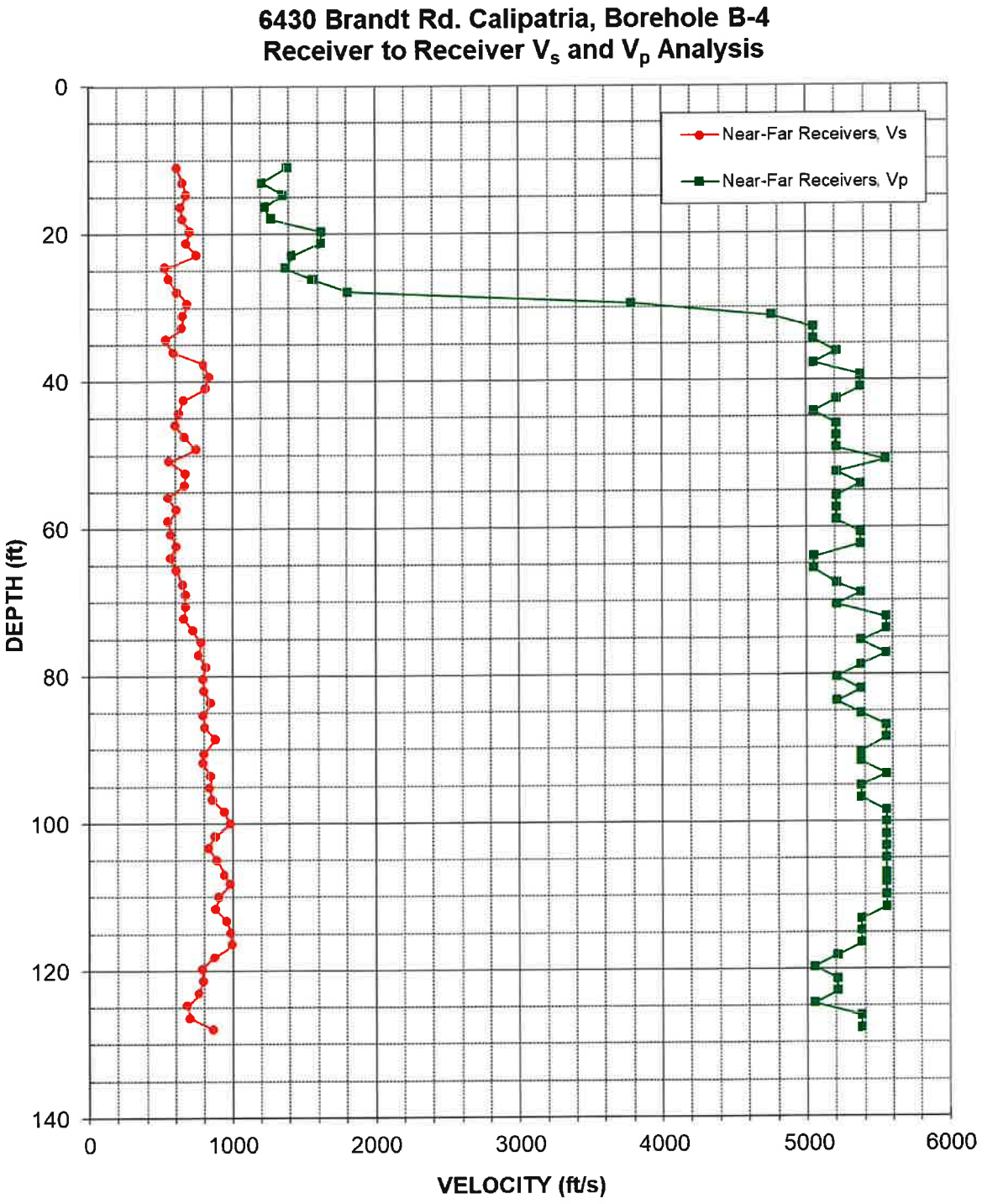


Figure 4: Borehole B-4, Suspension R1-R2 P- and S_H-wave velocities

TABLES

Table 1. Borehole Logging Dates and Locations

BOREHOLE NUMBER	DATE(S) LOGGED	COORDINATES[1]		
		Latitude	Longitude	Elevation (ft)
B-4	09/20/2024	33.117476°	-115.562731°	598

(1) Coordinates provided by client

Table 2. Logging Tools, Depth Ranges and Sample Intervals

BOREHOLE NUMBER	TOOL AND RUN NUMBER	DEPTH RANGE (FEET)	SAMPLE INTERVAL (FEET)	DATE(S) LOGGED
B-4	SUSPENSION DOWN 01	13.1 – 126.3	1.64	09/20/2024

Table 3. Borehole B-4, Suspension R1-R2 depths and P- and SH-wave velocities

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Receiver-to-Receiver Travel Time Data - Borehole B-4

American Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p	
(ft)	(ft/s)	(ft/s)	
11.1	610	1390	0.38
13.1	650	1210	0.30
14.8	670	1360	0.34
16.4	640	1230	0.32
18.0	650	1280	0.33
19.7	700	1630	0.39
21.3	670	1630	0.40
23.0	750	1420	0.31
24.6	530	1380	0.41
26.3	550	1570	0.43
27.9	610	1810	0.44
29.5	680	3790	0.48
31.2	650	4760	0.49
32.8	650	5050	0.49
34.5	530	5050	0.49
36.1	580	5210	0.49
37.7	800	5050	0.49
39.4	830	5380	0.49
41.0	810	5380	0.49
42.7	660	5210	0.49
44.3	620	5050	0.49
45.9	600	5210	0.49
47.6	660	5210	0.49
49.2	740	5210	0.49
50.9	560	5560	0.49
52.5	670	5210	0.49
54.1	660	5380	0.49
55.8	550	5210	0.49
57.4	610	5210	0.49
59.1	550	5210	0.49
60.7	570	5380	0.49
62.3	600	5380	0.49
64.0	560	5050	0.49
65.6	610	5050	0.49
67.6	650	5210	0.49
68.9	670	5380	0.49
70.5	670	5210	0.49
72.2	660	5560	0.49

Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p	
(m)	(m/s)	(m/s)	
3.4	190	420	0.38
4.0	200	370	0.30
4.5	210	410	0.34
5.0	200	380	0.32
5.5	200	390	0.33
6.0	210	500	0.39
6.5	210	500	0.40
7.0	230	430	0.31
7.5	160	420	0.41
8.0	170	480	0.43
8.5	190	550	0.44
9.0	210	1150	0.48
9.5	200	1450	0.49
10.0	200	1540	0.49
10.5	160	1540	0.49
11.0	180	1590	0.49
11.5	240	1540	0.49
12.0	250	1640	0.49
12.5	250	1640	0.49
13.0	200	1590	0.49
13.5	190	1540	0.49
14.0	180	1590	0.49
14.5	200	1590	0.49
15.0	230	1590	0.49
15.5	170	1690	0.49
16.0	200	1590	0.49
16.5	200	1640	0.49
17.0	170	1590	0.49
17.5	180	1590	0.49
18.0	170	1590	0.49
18.5	170	1640	0.49
19.0	180	1640	0.49
19.5	170	1540	0.49
20.0	180	1540	0.49
20.6	200	1590	0.49
21.0	200	1640	0.49
21.5	200	1590	0.49
22.0	200	1690	0.49

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Receiver-to-Receiver Travel Time Data - Borehole B-4

American Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p	
(ft)	(ft/s)	(ft/s)	
73.8	720	5560	0.49
75.5	780	5380	0.49
77.1	760	5560	0.49
78.7	810	5380	0.49
80.4	790	5210	0.49
82.0	800	5380	0.49
83.7	840	5210	0.49
85.3	790	5380	0.49
86.9	800	5560	0.49
88.6	880	5560	0.49
90.6	800	5380	0.49
91.9	790	5380	0.49
93.5	840	5560	0.49
95.1	840	5380	0.49
96.8	850	5380	0.49
98.4	940	5560	0.49
100.1	980	5560	0.48
101.7	870	5560	0.49
103.4	830	5560	0.49
105.0	890	5560	0.49
107.0	940	5560	0.49
108.3	980	5560	0.48
109.9	900	5560	0.49
111.6	870	5560	0.49
113.2	950	5380	0.48
114.8	980	5380	0.48
116.5	1000	5380	0.48
118.1	870	5210	0.49
119.8	780	5050	0.49
121.4	790	5210	0.49
123.0	760	5210	0.49
124.7	680	5050	0.49
126.3	700	5380	0.49
128.0	860	5380	0.49

Metric Units			
Depth at Midpoint Between Receivers	Velocity		Poisson's Ratio
	V_s	V_p	
(m)	(m/s)	(m/s)	
22.5	220	1690	0.49
23.0	240	1640	0.49
23.5	230	1690	0.49
24.0	250	1640	0.49
24.5	240	1590	0.49
25.0	240	1640	0.49
25.5	260	1590	0.49
26.0	240	1640	0.49
26.5	240	1690	0.49
27.0	270	1690	0.49
27.6	240	1640	0.49
28.0	240	1640	0.49
28.5	260	1690	0.49
29.0	260	1640	0.49
29.5	260	1640	0.49
30.0	290	1690	0.49
30.5	300	1690	0.48
31.0	270	1690	0.49
31.5	250	1690	0.49
32.0	270	1690	0.49
32.6	290	1690	0.49
33.0	300	1690	0.48
33.5	270	1690	0.49
34.0	270	1690	0.49
34.5	290	1640	0.48
35.0	300	1640	0.48
35.5	300	1640	0.48
36.0	260	1590	0.49
36.5	240	1540	0.49
37.0	240	1590	0.49
37.5	230	1590	0.49
38.0	210	1540	0.49
38.5	210	1640	0.49
39.0	260	1640	0.49

Table 4. Summary of PS Suspension Data Quality Evaluation Using Five Criteria

	Criteria	B-4
1	Consistent data between receiver to receiver (R1 – R2) and source to receiver (S – R1) data.	Yes, consistent data between receiver to receiver (R1 – R2) and source to receiver (S – R1) data.
2	Consistency between data from adjacent depth intervals.	Yes, consistent data between adjacent depth intervals.
3	Consistent relationship between P-wave and S_H -wave (excluding transition to saturated soils)	Yes, consistent relationship between P-wave and S_H -wave, with transition to saturated soils at 30 feet, as indicated by rapid rise of P-wave velocity to water velocity of ~ 5000 ft/sec.
4	Clarity of P-wave and S_H-wave onset, as well as damping of later oscillations.	Yes, clear P-wave and S_H-wave onsets, as well as damping of later oscillations.
5	Consistency of profile between adjacent boreholes, if available.	Not available

APPENDIX A

SUSPENSION VELOCITY MEASUREMENT SOURCE TO RECEIVER ANALYSIS RESULTS

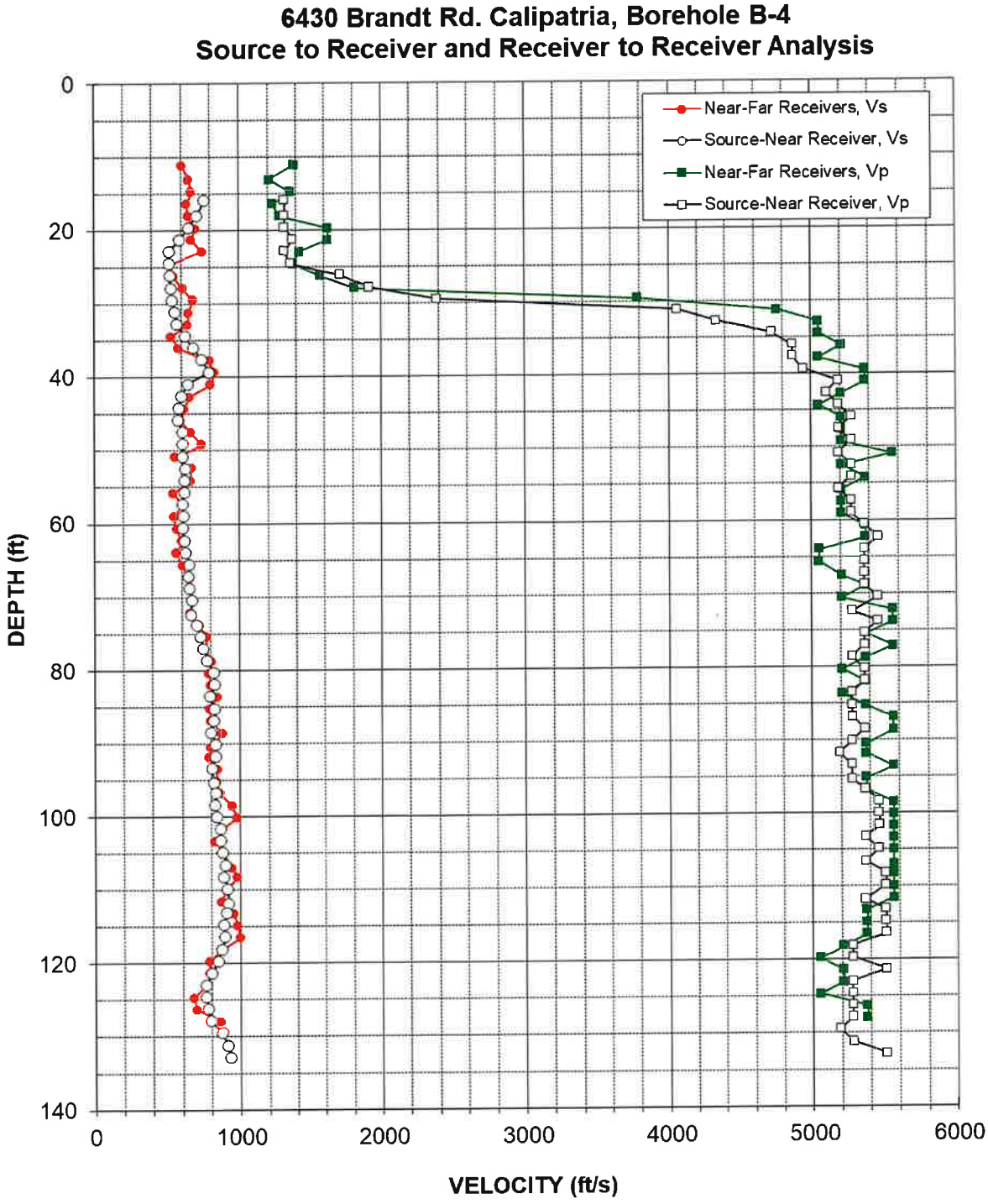


Figure A-1: Borehole B-4, Suspension S-R1 P- and S_H-wave velocities

Table A-1. Borehole B-4, S - R1 analysis P- and S_H-wave data

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Source-to-Receiver Travel Time Data - Borehole B-4

American Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p	
(ft)	(ft/s)	(ft/s)	
15.9	760	1320	0.25
18.0	710	1320	0.29
19.6	650	1320	0.34
21.2	590	1380	0.39
22.9	520	1320	0.41
24.5	520	1360	0.42
26.2	520	1710	0.45
27.8	530	1920	0.46
29.4	540	2390	0.47
31.1	560	4060	0.49
32.7	570	4340	0.49
34.4	630	4720	0.49
36.0	690	4870	0.49
37.6	740	4870	0.49
39.3	800	4950	0.49
40.9	650	5190	0.49
42.6	600	5100	0.49
44.2	580	5190	0.49
45.8	580	5280	0.49
47.5	610	5190	0.49
49.1	610	5280	0.49
50.8	610	5190	0.49
52.4	630	5280	0.49
54.0	620	5280	0.49
55.7	620	5190	0.49
57.3	610	5280	0.49
59.0	610	5280	0.49
60.6	610	5360	0.49
62.2	620	5460	0.49
63.9	630	5360	0.49
65.5	650	5360	0.49
67.2	650	5360	0.49
68.8	650	5360	0.49
70.5	670	5460	0.49
72.4	670	5280	0.49
73.7	710	5460	0.49

Metric Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p	
(m)	(m/s)	(m/s)	
4.9	230	400	0.25
5.5	220	400	0.29
6.0	200	400	0.34
6.5	180	420	0.39
7.0	160	400	0.41
7.5	160	410	0.42
8.0	160	520	0.45
8.5	160	580	0.46
9.0	160	730	0.47
9.5	170	1240	0.49
10.0	170	1320	0.49
10.5	190	1440	0.49
11.0	210	1480	0.49
11.5	230	1480	0.49
12.0	240	1510	0.49
12.5	200	1580	0.49
13.0	180	1560	0.49
13.5	180	1580	0.49
14.0	180	1610	0.49
14.5	190	1580	0.49
15.0	190	1610	0.49
15.5	180	1580	0.49
16.0	190	1610	0.49
16.5	190	1610	0.49
17.0	190	1580	0.49
17.5	190	1610	0.49
18.0	190	1610	0.49
18.5	190	1640	0.49
19.0	190	1660	0.49
19.5	190	1640	0.49
20.0	200	1640	0.49
20.5	200	1640	0.49
21.0	200	1640	0.49
21.5	200	1660	0.49
22.1	200	1610	0.49
22.5	220	1660	0.49

Summary of Compressional Wave Velocity, Shear Wave Velocity, and Poisson's Ratio Based on Source-to-Receiver Travel Time Data - Borehole B-4

American Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p	
75.4	730	5360	0.49
77.0	750	5360	0.49
78.7	780	5280	0.49
80.3	820	5360	0.49
81.9	830	5360	0.49
83.6	790	5280	0.49
85.2	830	5280	0.49
86.9	820	5280	0.49
88.5	800	5360	0.49
90.1	830	5280	0.49
91.8	830	5190	0.49
93.4	810	5280	0.49
95.4	820	5280	0.49
96.7	830	5360	0.49
98.3	830	5460	0.49
100.0	840	5460	0.49
101.6	860	5460	0.49
103.3	860	5360	0.49
104.9	880	5460	0.49
106.5	900	5360	0.49
108.2	890	5500	0.49
109.8	910	5500	0.49
111.8	920	5360	0.48
113.1	900	5500	0.49
114.7	890	5500	0.49
116.4	890	5500	0.49
118.0	870	5280	0.49
119.7	840	5280	0.49
121.3	800	5500	0.49
122.9	760	5280	0.49
124.6	760	5280	0.49
126.2	780	5280	0.49
127.9	800	5280	0.49
129.5	870	5190	0.49
131.1	910	5280	0.48
132.8	930	5500	0.49

Metric Units			
Depth at Midpoint Between Source and Near Receiver	Velocity		Poisson's Ratio
	V_s	V_p	
23.0	220	1640	0.49
23.5	230	1640	0.49
24.0	240	1610	0.49
24.5	250	1640	0.49
25.0	250	1640	0.49
25.5	240	1610	0.49
26.0	250	1610	0.49
26.5	250	1610	0.49
27.0	240	1640	0.49
27.5	250	1610	0.49
28.0	250	1580	0.49
28.5	250	1610	0.49
29.1	250	1610	0.49
29.5	250	1640	0.49
30.0	250	1660	0.49
30.5	260	1660	0.49
31.0	260	1660	0.49
31.5	260	1640	0.49
32.0	270	1660	0.49
32.5	270	1640	0.49
33.0	270	1680	0.49
33.5	280	1680	0.49
34.1	280	1640	0.48
34.5	280	1680	0.49
35.0	270	1680	0.49
35.5	270	1680	0.49
36.0	270	1610	0.49
36.5	260	1610	0.49
37.0	240	1680	0.49
37.5	230	1610	0.49
38.0	230	1610	0.49
38.5	240	1610	0.49
39.0	240	1610	0.49
39.5	260	1580	0.49
40.0	280	1610	0.48
40.5	280	1680	0.49

APPENDIX B

BORING GEOPHYSICAL LOGGING SYSTEMS - NIST TRACEABLE CALIBRATION RECORDS

MICRO PRECISION CALIBRATION, INC
2165 N. Glassell St.,
Orange, CA 92865
714-901-5659

ANAB ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT AC-1969

Certificate of Calibration

Date: Mar 20, 2024

Cert No. 5523631030772936

Customer:

GEOVISION

1124 OLYMPIC DR.
CORONA CA 92881

		Work Order #:	LA-90062677
		Purchase Order #:	24035-240220-01
MPC Control #:	BG9697	Serial Number:	19029
Asset ID:	19029	Department:	N/A
Gage Type:	LOGGER	Performed By:	JOSE ACEVES
Manufacturer:	OYO	Received Condition:	IN TOLERANCE
Model Number:	3331-A	Returned Condition:	IN TOLERANCE
Size:	N/A	Cal. Date:	February 21, 2024
Temp/RH:	21.0°C / 38.0%	Cal. Interval:	12 MONTHS
Location:	Calibration performed at MPC facility	Cal. Due Date:	February 21, 2025

Calibration Notes:

This certificate supersedes certificates number 5523631030718046 and 5523631030753530 due to revision of the datasheet and correction of a clerical error.

See attached datasheet for calculations (1 page)

Calibrated IAW customer supplied data form Rev 2.1
Frequency measurement uncertainty = 0.0005 Hz
Unit calibrated with Laptop Panasonic Model CF-31, s/n: 3HTYB54089
Calibrated To 4:1 Accuracy Ratio

Standards Used to Calibrate Equipment

I.D.	Description.	Model	Serial	Manufacturer	Cal. Due Date	Traceability #
DB8748	GPS TIME AND FREQUENCY RECEIVER	58503A	3625A01225	HEWLETT PACKARD	Apr 30, 2025	5523631030042245
LAS0018	FUNCTION / ARBITRARY WAVEFORM GENERATOR	33250A	US40001522	AGILENT	May 31, 2024	5523631030080089
BD7715	UNIVERSAL COUNTER	53131A	3416A05377	HEWLETT PACKARD	Mar 31, 2024	5523631030761818

Calibrating Technician: Jose A
JOSE ACEVES

QC Approval: Ilya Vaks
ILYA VAKS

STATEMENTS OF PASS OR FAIL CONFORMANCE: The uncertainty of measurement has been taken into account when determining compliance with specification. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006

THE CALIBRATION REPORT STATUS:
PASS - Term used when compliance statement is given, and the measurement result is **PASS**.
PASS² - Term used when compliance statement is given, and the measurement result is conditional passed or PASS².
FAIL - Term used when compliance statement is given, and the measurement result is FAIL.
FAIL² - Term used when compliance statement is given, and the measurement result is conditional failed or FAIL².
REPORT OF VALUE - Term used when reported measurement is not requiring compliance statement in report.
ADJUSTED - When adjustments are made to an instrument which changes the value of measurement from what was measured as found to new value as left.
LIMITED - When an instrument fails calibration but is still functional in a limited manner.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated. This calibration report complies with ISO/IEC 17025:2017, ANSI/NCSL Z540.3-2006 and ANSI/NCSL Z540.1-1994. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified, this may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.

MICRO PRECISION

MICRO PRECISION CALIBRATION, INC
2165 N. Glassell St.,
Orange, CA 92865
714-901-5659

ANAB ANSI National Accreditation Board ACCREDITED ISO/IEC 17025 CALIBRATION AND DIMENSIONAL MEASUREMENT AC-1969

Certificate of Calibration

Date: Mar 20, 2024

Cert No. 5523631030772936

Procedures Used in this Event

Procedure Name	Description
GEOVISION SEISMIC Rev. 2.1	Seismic Logger/Recorder Calibration Procedure, Rev. 2.1

Calibrating Technician: Jose A

JOSE ACEVES

QC Approval: Ilya Vaks

ILYA VAKS

STATEMENTS OF PASS OR FAIL CONFORMANCE: The uncertainty of measurement has been taken into account when determining compliance with specification. All measurements and test results guard banded to ensure the probability of false-accept does not exceed 2% in compliance with ANSI/NCSL Z540.3-2006

THE CALIBRATION REPORT STATUS:
PASS- Term used when compliance statement is given, and the measurement result is PASS.
PASS²- Term used when compliance statement is given, and the measurement result is conditional passed or PASS²
FAIL- Term used when compliance statement is given, and the measurement result is FAIL.
FAIL²- Term used when compliance statement is given, and the measurement result is conditional failed or FAIL²
REPORT OF VALUE - Term used when reported measurement is not requiring compliance statement in report.
ADJUSTED- When adjustments are made to an instrument which changes the value of measurement from what was measured as found to new value as left.
LIMITED - When an instrument fails calibration but is still functional in a limited manner.

The expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%, unless otherwise stated. This calibration report complies with ISO/IEC 17025:2017, ANSI/NCSL Z540.3-2006 and ANSI/NCSL Z540.1-1994. Calibration cycles and resulting due dates were submitted/approved by the customer. Any number of factors may cause an instrument to drift out of tolerance before the next scheduled calibration. Recalibration cycles should be based on frequency of use, environmental conditions and customer's established systematic accuracy. All standards are traceable to SI through the National Institute of Standards and Technology (NIST) and/or recognized national or international standards laboratories. Services rendered include proper manufacturer's service instruction and are warranted for no less than thirty (30) days. The information on this report pertains only to the instrument identified, this may not be reproduced in part or in a whole without the prior written approval of the issuing MP Calibration Laboratory.

(CERT, Rev 9)

GEOVision geophysical services

SUSPENSION PS SEISMIC LOGGER/RECORDER CALIBRATION DATA FORM

INSTRUMENT DATA

System mfg.:	Oyo	Model no.:	3331
Serial no.:	19029	Calibration date:	2/21/2024
By:	Micro Precision	Due date:	2/21/2025
Counter mfg.:	Hewlett-Packard	Model no.:	53131A
Serial no.:	3416A05377	Calibration date:	~~4/29/2023~~ 3/29/23 EFF
By:	Micro Precision	Due date:	~~4/30/2024~~ 3/31/24 3/13/24
Signal generator mfg.:	Agilent	Model no.:	33250A
Serial no.:	US40001522	Calibration date:	5/23/2023
By:	Micro Precision	Due date:	5/31/2024
Laptop controller mfg.:	Panasonic	Model no.:	CF-31
Serial no.:	3HTYB54089	Calibration date:	N/A

SYSTEM SETTINGS:

Gain:	2
Filter	10KHz
Range:	See sample period in table below
Delay:	3msec
Stack (1 std)	1
System date = correct date and time	yes

PROCEDURE:

Set sine wave frequency to target frequency with amplitude of approximately 0.25 volt peak
Note actual frequency on data form.
Set sample period and record data file to disk. Note file name on data form.
Pick duration of 9 cycles using PSLOG.EXE program, note duration on data form, and save as .sps file. Calculate average frequency for each channel pair and note on data form.

Average frequency must be within +/- 1% of actual frequency at all data points.

Maximum error ((AVG-ACT)/ACT*100)% As found 0.11% As left 0.11%

Target Frequency (Hz)	Actual Frequency (Hz)	Sample Period (microS)	File Name	Time for 9 cycles Hn (msec)	Average Frequency Hn (Hz)	Time for 9 cycles Hr (msec)	Average Frequency Hr (Hz)	Time for 9 cycles V (msec)	Average Frequency V (Hz)
50.00	50.00	200	007	179.8	50.06	180.2	49.94	180.0	50.00
100.0	100.0	100	008	90.00	100.0	90.00	100.0	90.00	100.0
200.0	200.0	50	009	45.00	200.0	45.05	199.8	45.05	199.8
500.0	500.0	20	010	18.00	500.0	17.98	500.6	17.98	500.6
1000	1000	10	011	9.000	1000	8.990	1001.1	9.000	1000.0
2000	2000	5	012	4.495	2002	4.505	1998	4.500	2000

Calibrated by: Toye Aceves — 2/21/2024 — 3/13/24
Name — Date — Signature

Witnessed by: Emily Feldman — 3/13/24 2/21/2024
Name — Date — Signature

Suspension PS Seismic Recorder/Logger Calibration Data Form Rev 2.1 February 7, 2012

APPENDIX C

LABORATORY TEST RESULTS

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APPENDIX C
LABORATORY TEST RESULTS

Laboratory tests were performed on selected bulk and drive samples from our borehole explorations to estimate engineering characteristics of the various earth materials encountered. Testing was performed in accordance with ASTM and Caltrans standards and are presented in herein.

MOISTURE CONTENT AND DRY UNIT WEIGHT

Natural moisture content and dry unit weight tests were performed on selected bulk and drive samples collected from the boreholes in accordance with ASTM D2216 and D7263, respectively. The results are presented on the boring logs in Appendix A and in Appendix C in the Lab Summary Tables C-1 and C-2.

GRADATION ANALYSIS

Sieve analyses were performed on selected samples of the materials encountered at the site to evaluate the gradation characteristics of the soil and to aid in classification. The tests were performed in general accordance with ASTM D1140 for percent finer than No. 200 sieve tests and ASTM D6913 for full gradation analyses. The results are presented in Appendix C as Figures C-3.

ATTERBERG LIMITS

Atterberg limit tests were performed on fine-grained portions of selected soil samples to evaluate the plasticity characteristics (liquid limit, plastic limit, and plasticity index) of the soil and to aid in its classification. The tests were performed in general accordance with ASTM D4318. The results are presented in Appendix C as Figure C-4.

CORROSION TESTS

A series of chemical tests were performed on four selected bulk and driven samples of the near surface and at-depth soils to estimate pH, minimum resistivity, and sulfate and chloride contents. The test procedures were in general accordance with the California Tests 417, 422, and 643. The test results are provided in Appendix C as Figures C-5 through C-8.

DIRECT SHEAR

Direct shear strength tests were performed on selected driven soil samples from the borings. The test procedures were performed in general accordance with the ASTM D3080. The test results are provided in Appendix C as Figures C-9 through C-10.

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R-VALUE

Two R-Value tests were performed on selected bulk samples to evaluate resistance values of the near surface soils. The tests were performed using modified effort in general accordance with ASTM D2844. The results are presented in Appendix C and Figures C-11 and C-12.

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Exploration ID	Depth (ft.)	Sample No.	Sample Description	Water Content (%)	Dry Unit Wt. (pcf)	Sieve Analysis (%)			Atterberg Limits			Additional Tests
						Passing 3/4"	Passing #4	Passing #200	Liquid Limit	Plastic Limit	Plasticity Index	
B-1	1.0 - 5.0	S-1	SANDY SILT (ML)	5.1				62				
B-1	5.0	S-2	SANDY SILT (ML)						21	18	3	
B-1	10.0	S-3	SANDY SILT (ML)	8.2		100	100	71				
B-1	16.5	S-4	SANDY SILT (ML)	11.7	88.8							
B-1	20.0	S-5	FAT CLAY (CL)					75	65	26	39	
B-1	25.0	S-6	FAT CLAY (CL)	23.1	92.4							
B-1	30.0	S-7	SILTY SAND (SM)			100	100	14				
B-1	35.0	S-8	LEAN CLAY (CL)	28.7	86.7			99	32	21	11	
B-1	40.0	S-9	SILTY SAND (SM)	24.8								
B-1	50.0	S-11	FAT CLAY (CH)						72	26	46	
B-1	55.0	S-12	FAT CLAY (CH)	38.0								
B-1	65.0	S-14	FAT CLAY (CH)						74	24	50	
B-1	75.0	S-16	LEAN CLAY (CL)									**Direct Shear=**
												Peak Cohesion: 252 psf
												Peak Friction Angle: 30.6°
B-1	90.0	S-19	FAT CLAY (CH)	30.0					56	23	33	
B-1	95.0	S-20	FAT CLAY (CH)	25.3	81.2							
B-1	100.0	S-21	SILTY SAND (SM)	11.3								
B-1	115.0	S-24	POORLY GRADED SAND WITH SILT (SP-SM)	24.0	88.5							
B-2	1.0 - 5.0	S-1	SANDY SILT (ML)	4.7				65				**R-Value=** 53
B-3	1.0 - 5.0	S-1	SANDY SILT (ML)	9.1		100	100	81				**R-Value=** 39
B-4	1.0 - 5.0	S-1	SANDY SILT (ML)	9.9				83				**pH=** 7.9
												Resistivity= 110
												Sulfates= 0.060
												Chlorides= 0.352
B-4	5.0	S-2	SANDY SILT (ML)	8.6								

Refer to the Geotechnical Evaluation Report or the supplemental plates for the method used for the testing performed above.
NP = NonPlastic
NA = Not Available

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY:
DATE: 3/21/2025

LABORATORY TEST RESULT SUMMARY

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

APPENDIX
C-1

Exploration ID	Depth (ft.)	Sample No.	Sample Description	Water Content (%)	Dry Unit Wt (pcf)	Sieve Analysis (%)			Atterberg Limits			Additional Tests
						Passing 3/4"	Passing #4	Passing #200	Liquid Limit	Plastic Limit	Plasticity Index	
B-4	10.0	S-3	LEAN CLAY (CL)									**pH=** 8.1
												Sulfates= 0.660
												Chlorides= 0.374
B-4	15.0	S-4	FAT CLAY (CH)									**pH=** 8.2
												Sulfates= 0.108
												Chlorides= 0.134
B-4	20.0	S-5	SILTY SAND (SM)									**pH=** 8.5
												Sulfates= 0.023
												Chlorides= 0.016
B-4	30.0	S-7	FAT CLAY (CH)						68	24	44	
B-4	40.0	S-9	SANDY SILT (ML)					60				**Direct Shear=**
												Peak Cohesion: 0 psf
												Peak Friction Angle: 33.7°
B-4	45.0	S-10	SILT (ML)					99				
B-4	50.0	S-11	FAT CLAY (CH)	32.5	77.7				76	28	48	
B-4	60.0	S-13	FAT CLAY (CH)					99				
B-4	65.0	S-14	FAT CLAY (CH)						53	21	32	
B-4	70.0	S-15	FAT CLAY (CH)	30.5	79.4			95				
B-4	80.0	S-17	LEAN CLAY (CL)	25.5	95.6							
B-4	90.0	S-19	FAT CLAY (CH)	24.7	95.2			69				
B-4	100.0	S-21	SILTY SAND (SM)	22.0	93.4							
B-4	105.0	S-22	SILTY SAND (SM)			100	100	23				

Refer to the Geotechnical Evaluation Report or the supplemental plates for the method used for the testing performed above.
NP = NonPlastic
NA = Not Available

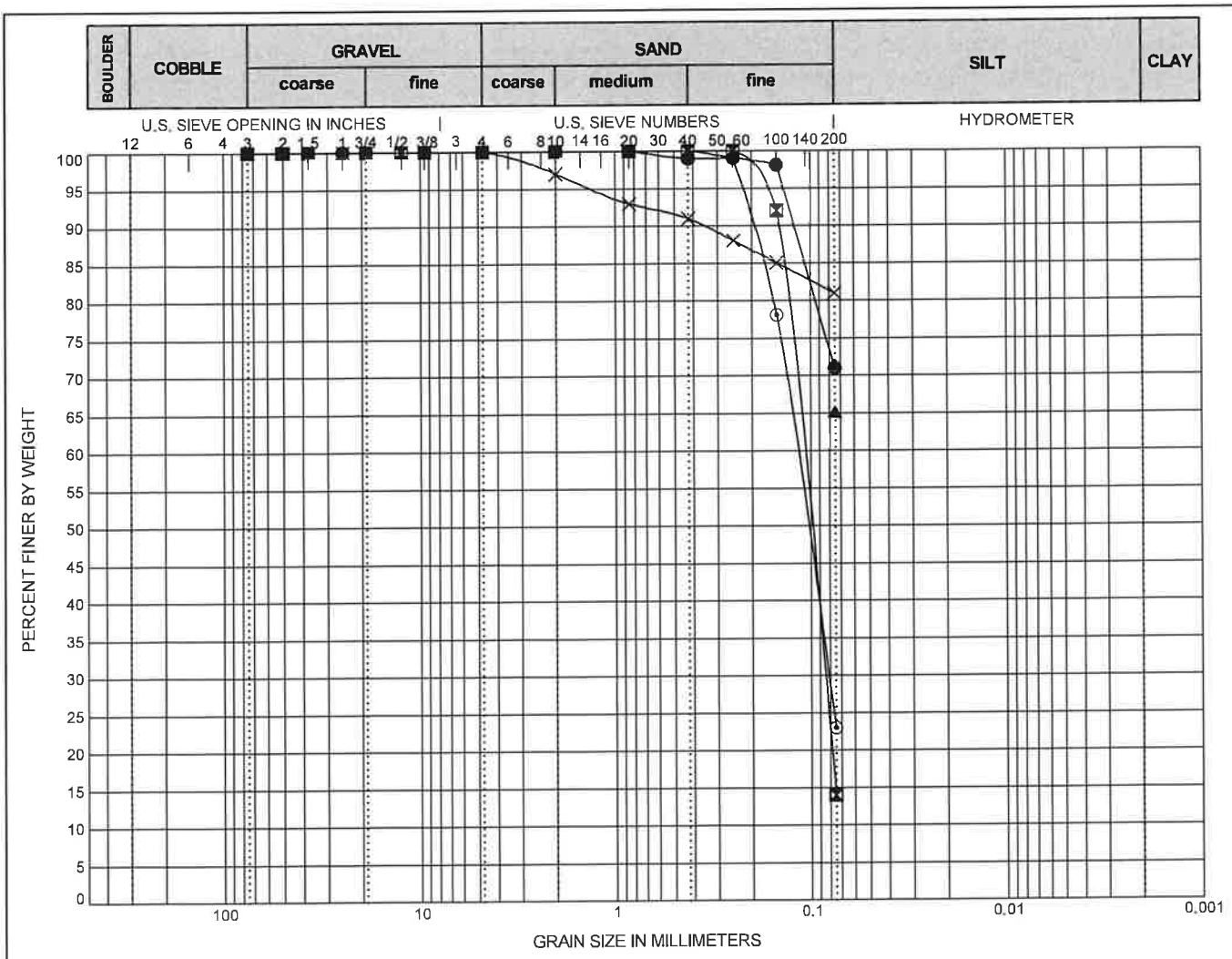
KLEINFELDER
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PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY:
DATE: 3/21/2025

LABORATORY TEST RESULT SUMMARY

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

APPENDIX
C-2



Exploration ID		Depth (ft.)	Sample Number	Sample Description	LL	PL	PI
●	B-1	10	S-3	SANDY SILT (ML)	NM	NM	NM
⊠	B-1	30	S-7	SILTY SAND (SM)	NM	NM	NM
▲	B-2	1 - 5	S-1	SANDY SILT (ML)	NM	NM	NM
×	B-3	1 - 5	S-1	SANDY SILT (ML)	NM	NM	NM
⊙	B-4	105	S-22	SILTY SAND (SM)	NM	NM	NM

Exploration ID		Depth (ft.)	D_{100}	D_{60}	D_{30}	D_{10}	Cc	Cu	Passing 3/4"	Passing #4	Passing #200	%Silt*	%Clay*
●	B-1	10	75	NM	NM	NM	NM	NM	100	100	71	NM	NM
⊠	B-1	30	75	0.113	0.086	NM	NM	NM	100	100	14	NM	NM
▲	B-2	1 - 5	0.075	NM	NM	NM	NM	NM			65	NM	NM
×	B-3	1 - 5	75	NM	NM	NM	NM	NM	100	100	81	NM	NM
⊙	B-4	105	75	0.12	0.082	NM	NM	NM	100	100	23	NM	NM

*These numbers represent silt-sized and clay-sized content but may not indicate the percentage of the material with the engineering properties of silt or clay. Sieve Analysis and Hydrometer Analysis testing performed in general accordance with ASTM D6913(Sieve Analysis) and ASTM D7928 (Hydrometer Analysis).
NP = Nonplastic
NA = Not Available
NM = Not Measured

Coefficients of Uniformity - $C_u = D_{60} / D_{10}$
Coefficients of Curvature - $C_c = (D_{30})^2 / D_{60} D_{10}$
D_{60} = Grain diameter at 60% passing
D_{30} = Grain diameter at 30% passing
D_{10} = Grain diameter at 10% passing

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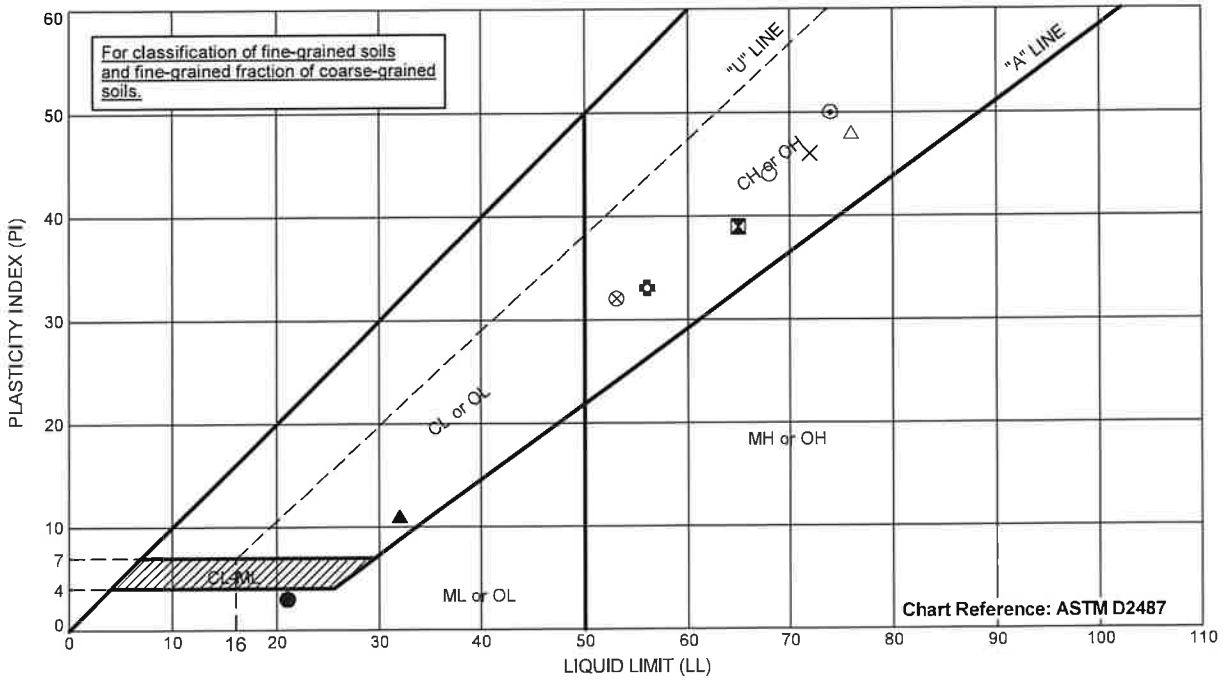
PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY:
DATE: 3/21/2025

SIEVE ANALYSIS

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
C-3

PLOTTED: 03/21/2025 08:41 AM BY: ABriggs
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 25001840.001A
GINT FILE: KF_gint_master_2025
GINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2025.GLB (KLF_SIEVE ANALYSIS)



Exploration ID		Depth (ft.)	Sample Number	Sample Description	Passing #200	LL	PL	PI
●	B-1	5	S-2	SANDY SILT (ML)	NM	21	18	3
⊠	B-1	20	S-5	FAT CLAY (CL)	75	65	26	39
▲	B-1	35	S-8	LEAN CLAY (CL)	99	32	21	11
×	B-1	50	S-11	FAT CLAY (CH)	NM	72	26	46
⊙	B-1	65	S-14	FAT CLAY (CH)	NM	74	24	50
✿	B-1	90	S-19	FAT CLAY (CH)	NM	56	23	33
○	B-4	30	S-7	FAT CLAY (CH)	NM	68	24	44
△	B-4	50	S-11	FAT CLAY (CH)	NM	76	28	48
⊗	B-4	65	S-14	FAT CLAY (CH)	NM	53	21	32

Testing performed in general accordance with ASTM D4318.
NP = Nonplastic
NA = Not Available
NM = Not Measured

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY:
DATE: 3/21/2025

ATTERBERG LIMITS

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
C-4

PLOTTED: 03/21/2025 09:40 AM BY: ABriggs
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 25001840.001A
gINT FILE: All_gint_master_2025.GLB | LAB_ATTERBERG (ASTM)
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2025.GLB | KLF_STANDARD_GINT_LIBRARY_2025.GLB

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: November 11, 2024
Purchase Order Number: 25001840.001A
Sales Order Number: 65598
Account Number: KLE

To:
--
Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO1503 Customers Phone: 619-831-4600

Sample Designation:
--
One soil sample received on 11/06/24 at 2:45pm, marked as:
Project: Brandt Rd Bridge Replacement
Project #: 25001840.001A
Boring #: B-4
Sample #: 1
Depth: 1-5'
Date Sampled 09/17/2024-09/20/2024

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.9

Water Added (ml)	Resistivity (ohm-cm)
5	350
5	230
5	140
5	120
5	120
5	110
5	110
5	120
5	130

12 years to perforation for a 16 gauge metal culvert.
16 years to perforation for a 14 gauge metal culvert.
22 years to perforation for a 12 gauge metal culvert.
28 years to perforation for a 10 gauge metal culvert.
35 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.060% (600ppm)

Water Soluble Chloride Calif. Test 422 0.352% (3520ppm)

Rosa Bernal
RMB/js

KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: AB CHECKED BY: DATE: 3/21/2025	CORROSION Brandt Rd Bridge Replacement Brandt Rd Calipatria, CA	FIGURE C-5

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: November 11, 2024
Purchase Order Number: 25001840.001A
Sales Order Number: 65598
Account Number: KLE

To:
--
Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO1502-1 Customers Phone: 619-831-4600

Sample Designation:
--
One soil sample received on 11/06/24 at 2:45pm, marked as:

Project:	Brandt Rd Bridge Replacement
Project #:	25001840.001A
Boring #:	B-4
Sample #:	3
Depth:	10'
Date Sampled	09/17/2024-09/20/2024

ANALYSIS:

pH 8.1

Water Soluble Sulfate Calif. Test 417	0.660% (6600ppm)
Water Soluble Chloride Calif. Test 422	0.374% (3740ppm)

Rosa Bernal
RMB/js

KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: AB CHECKED BY: DATE: 3/21/2025	CORROSION Brandt Rd Bridge Replacement Brandt Rd Calipatria, CA	FIGURE C-6

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: November 11, 2024
Purchase Order Number: 25001840.001A
Sales Order Number: 65598
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO1502-2 Customers Phone: 619-831-4600

Sample Designation:

One soil sample received on 11/06/24 at 2:45pm, marked as:

Project:	Brandt Rd Bridge Replacement
Project #:	25001840.001A
Boring #:	B-4
Sample #:	4
Depth:	15'
Date Sampled	09/17/2024-09/20/2024

ANALYSIS:

pH 8.2

Water Soluble Sulfate	Calif. Test 417	0.108% (1080ppm)
Water Soluble Chloride	Calif. Test 422	0.134% (1340ppm)

Rosa Bernal
RMB/js

KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: AB CHECKED BY: DATE: 3/21/2025	CORROSION Brandt Rd Bridge Replacement Brandt Rd Calipatria, CA	FIGURE C-7

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: November 11, 2024
Purchase Order Number: 25001840.001A
Sales Order Number: 65598
Account Number: KLE

To:
--
Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO1502-3 Customers Phone: 619-831-4600

Sample Designation:
--
One soil sample received on 11/06/24 at 2:45pm, marked as:

Project: Brandt Rd Bridge Replacement
Project #: 25001840.001A
Boring #: B-4
Sample #: 5
Depth: 20'
Date Sampled 09/17/2024-09/20/2024

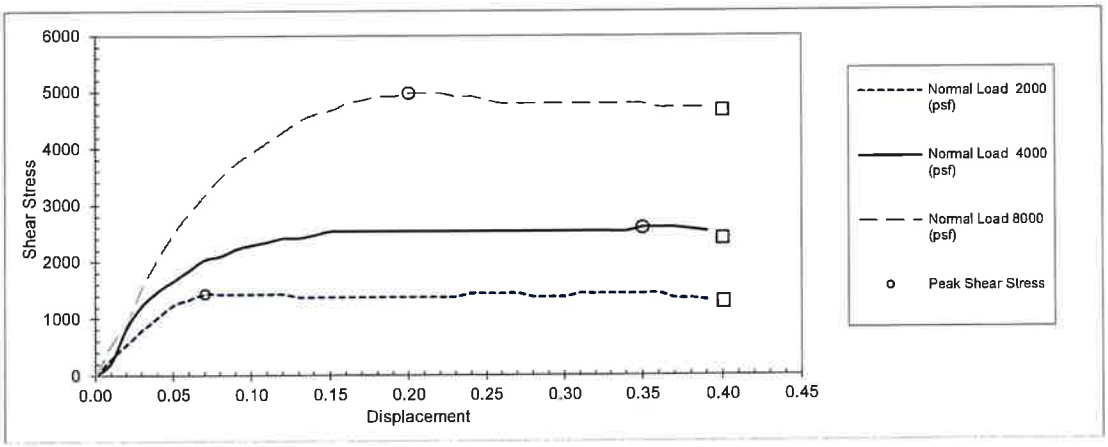
ANALYSIS:

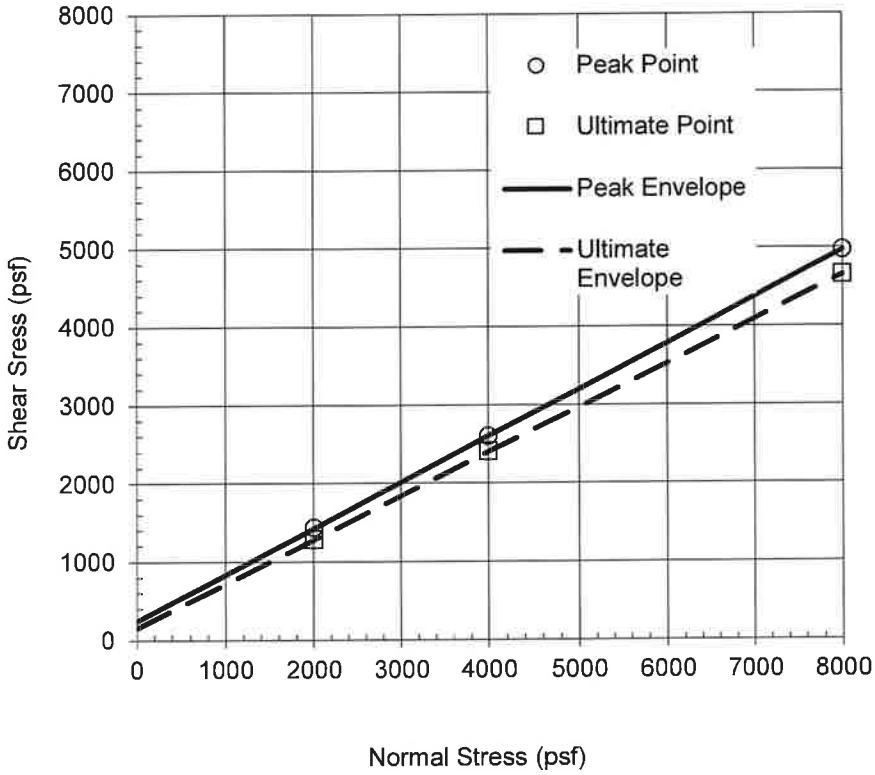
pH 8.5

Water Soluble Sulfate Calif. Test 417	0.023% (230ppm)
Water Soluble Chloride Calif. Test 422	0.016% (160ppm)

Rosa Bernal
RMB/js

KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: AB CHECKED BY: DATE: 3/21/2025	CORROSION Brandt Rd Bridge Replacement Brandt Rd Calipatria, CA	FIGURE C-8





Strain Rate = 0.00013 inch/min
Date Tested: 2/11/2025

				Interpreted Shear Strength			
				Peak		Ultimate	
Boring No.	Sample No.	Depth, ft	UCSC	Cohesion (psf)	Friction Angle (deg)	Cohesion (psf)	Friction Angle (deg)
B-1	S-16	75'	CH	252	30.6	163	29.3

Sample description: Brown Fat Clay

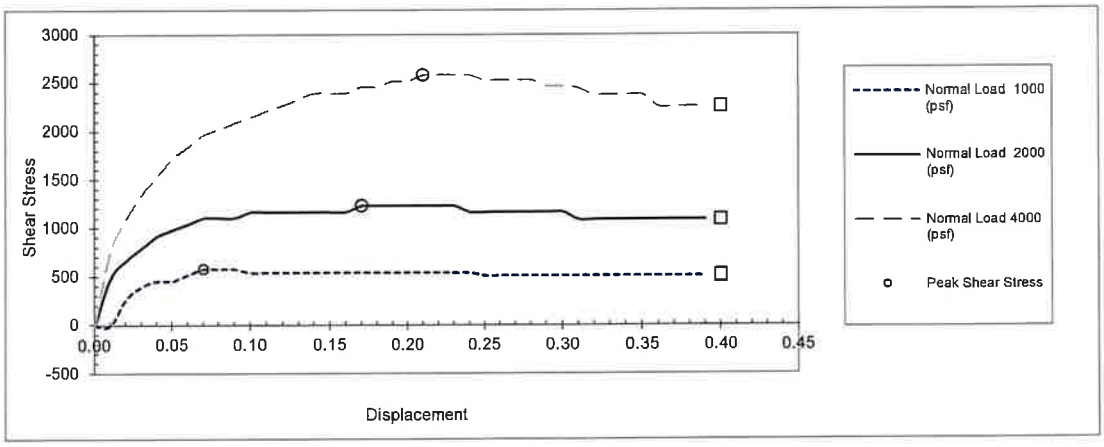
KLEINFELDER
Bright People. Right Solutions.

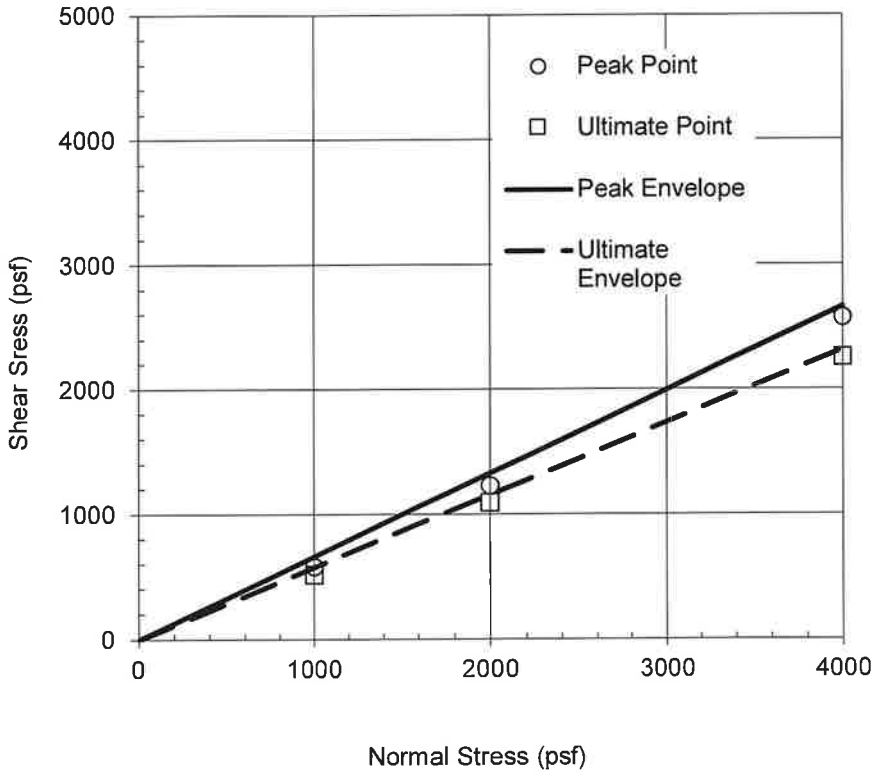
PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY:
DATE: 3/21/2025

DIRECT SHEAR

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
C-9





Strain Rate = 0.0042 inch/min
Date Tested: 1/24/2025

				Interpreted Shear Strength			
				Peak		Ultimate	
Boring No.	Sample No.	Depth, ft	UCSC	Cohesion (psf)	Friction Angle (deg)	Cohesion (psf)	Friction Angle (deg)
B-4	S-9	40'	ML	0	33.7	0	30.1

Sample description: Light Brown Silt

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.: 25001840.001A
DRAWN BY: AB
CHECKED BY:
DATE: 3/21/2025

DIRECT SHEAR

Brandt Rd Bridge Replacement
Brandt Rd
Calipatria, CA

FIGURE
C-10

Laboratory Test Report

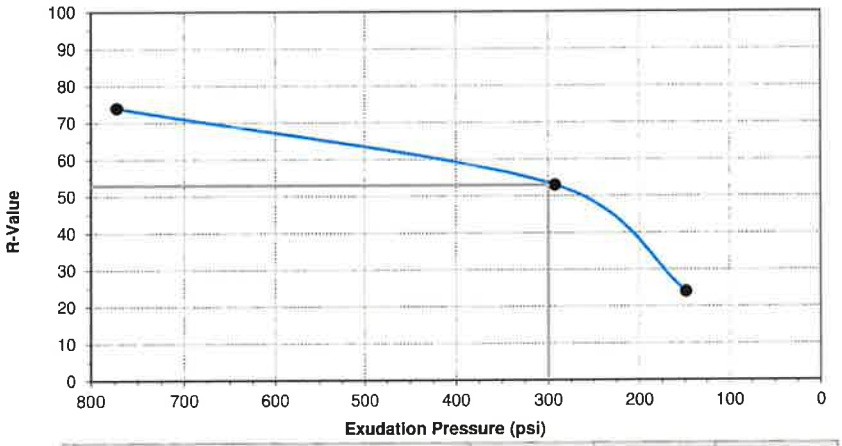
Client:	County of Imperial, CA	Report No.:	24-ONT-01579 Rev. 0	Issued:	11/18/2024
Project:	25001840.001A				
	Brandt Road Bridge Over Alamo River	Sampled by:	Geotech	Date:	9/17/2024
	03-000L - Task 3 - Lab Testing	Submitted by:	Michael Magaña	Date:	11/11/2024

Tested on **11/15/2024** by **M.Magaña**

Test Method: **CTM 301**

Material Description: **Brown Sandy Silt (ML)**

Specific Location: **B-2, S1 at 1-5'**



Briquette No.	A	B	C
Dry Unit Weight at Test (pcf)	120.9	120.5	119.6
Expansion Pressure (psf)	178	26	0
Exudation Pressure (psi)	773	293	148
Moisture at Time of Test (%)	10.4	11.3	12.2
Resistance Value	74	53	24
R - VALUE AT 300 PSI EXUDATION PRESSURE:			**53**

Reviewed on 11/18/2024 by Michael Magana,
Laboratory Supervisor

KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: AB CHECKED BY: DATE: 3/21/2025	R-VALUE Brandt Rd Bridge Replacement Brandt Rd Calipatria, CA	FIGURE C-11

Laboratory Test Report

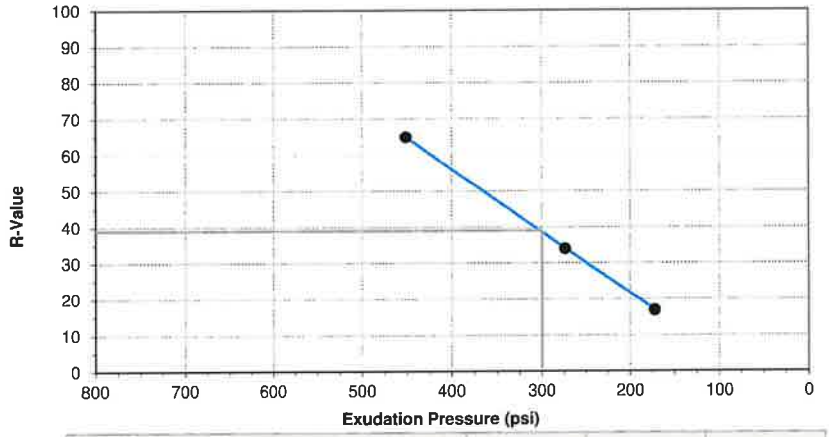
Client:	County of Imperial, CA	Report No.:	24-ONT-01580 Rev. 0	Issued:	11/18/2024
Project:	25001840.001A				
	Brandt Road Bridge Over Alamo River	Sampled by:	Geotech	Date:	9/17/2024
	03-000L - Task 3 - Lab Testing	Submitted by:	Michael Magaña	Date:	11/11/2024

Tested on **11/15/2024** by **M.Magaña**

Test Method: **CTM 301**

Material Description: **Brown Sandy Silt (ML)**

Specific Location: **B-3, S1 at 1-5'**



Briquette No.	A	B	C
Dry Unit Weight at Test (pcf)	119.6	117.6	115.8
Expansion Pressure (psf)	39	30	4
Exudation Pressure (psi)	452	274	172
Moisture at Time of Test (%)	11.3	12.3	13.2
Resistance Value	65	34	17
R - VALUE AT 300 PSI EXUDATION PRESSURE:			**39**

Reviewed on 11/18/2024 by Michael Magana,
Laboratory Supervisor

KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: AB CHECKED BY: DATE: 3/21/2025	R-VALUE Brandt Rd Bridge Replacement Brandt Rd Calipatria, CA	FIGURE C-12

APPENDIX D

CALCULATIONS

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APPENDIX D
CALCULATIONS

D.1 Liquefaction Triggering Analysis

D.2 Pile Capacities and LPile Parameters

D.3 MSE Wall Bearing Capacity

D.4 MSE Wall Global Stability

D.5 Abutment Slope Stability and Lateral Spreading

D.1
LIQUEFACTION TRIGGERING ANALYSIS

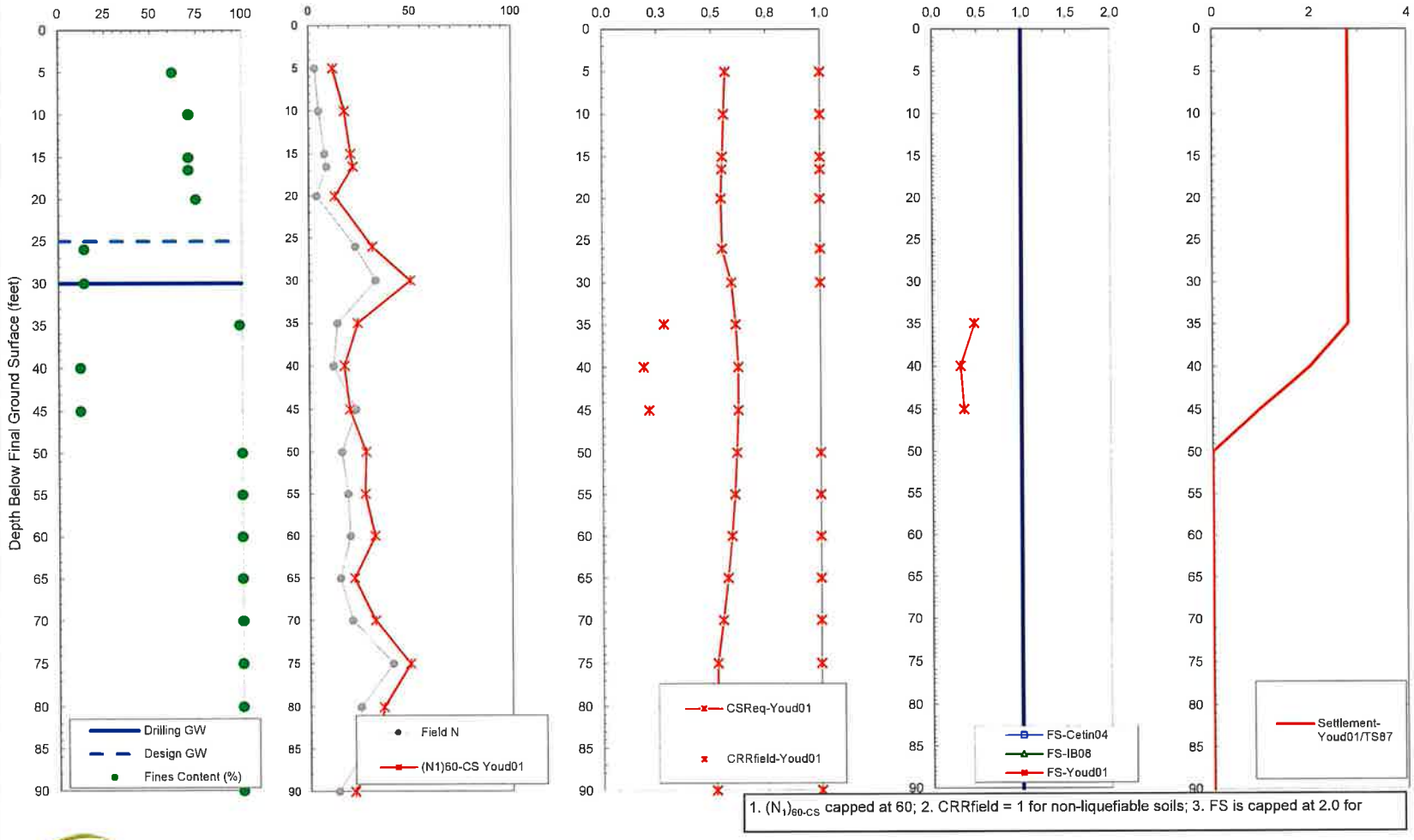
Boring ID: **B-1**

M_w = **7.0**
PGA = **0.88g**

Groundwater Depth During Drilling (ft) = **30.0 ft**
Design Groundwater Depth (ft) = **25.0 ft**

Existing Ground Elevation = **807.0 ft**
Final Ground Elevation = **807.0 ft**

Ana. by: A. Briggs
Checked by: S. Floyd



1. $(N_1)_{60\text{-}CS}$ capped at 60; 2. CRRfield = 1 for non-liquefiable soils; 3. FS is capped at 2.0 for

KLEINFELDER
Bright People. Right Solutions.

Project Name: Brandt Road Bridge Replacement

Project No.: 25001840.001A

Project Location: Brandt Road & Bowles Road Intersection

LIQUEFACTION ANALYSIS
BRANDT RD

Date 1/17/2025

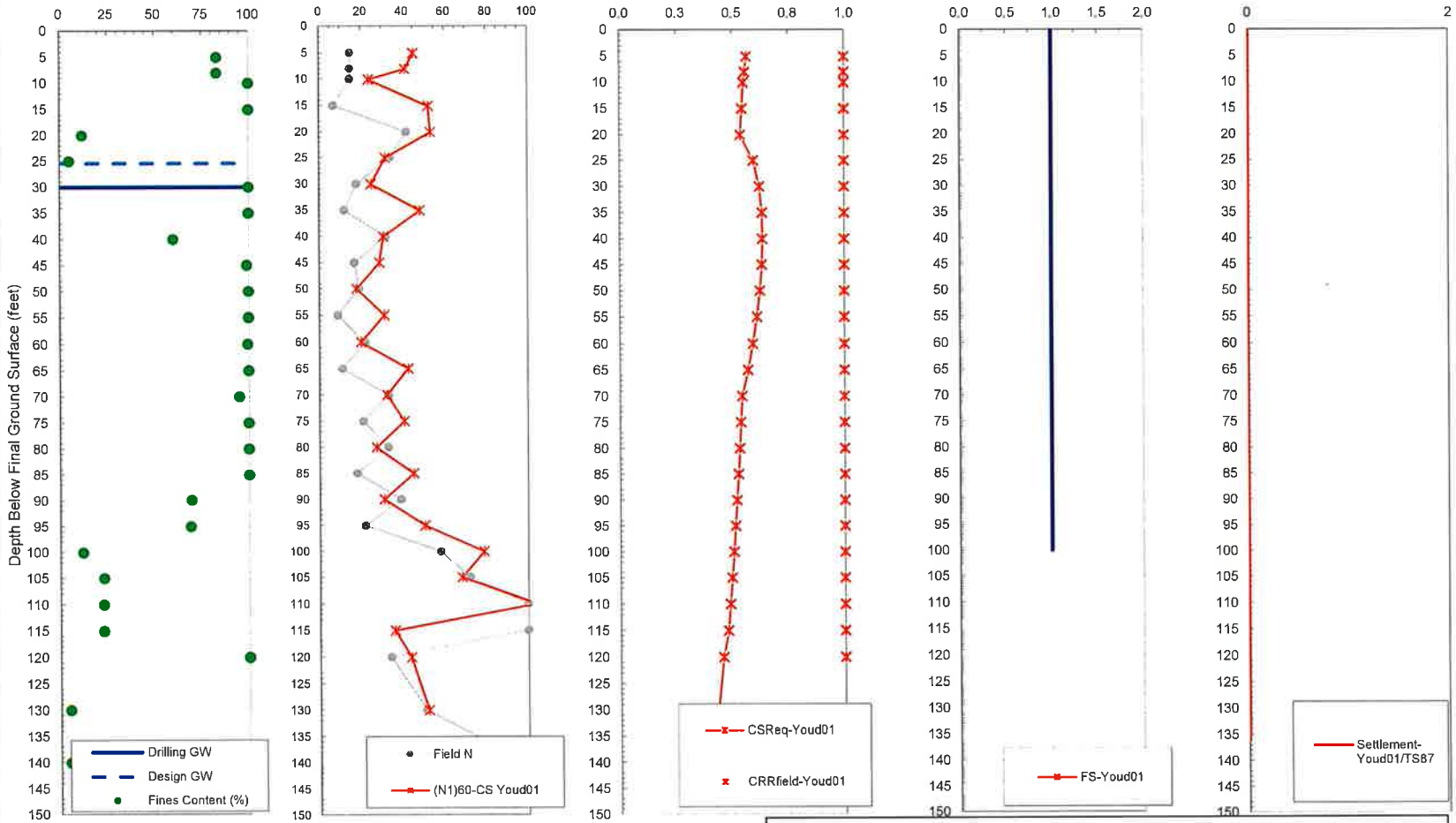
Boring ID: **B-4**

M_w= **7.0**
PGA= **0.88g**

Groundwater Depth During Drilling (ft) = **30.0 ft**
Design Groundwater Depth (ft) = **25.4 ft**

Existing Ground Elevation = **807.4 ft**
Final Ground Elevation = **807.4 ft**

Ana. by: Naga Ghanta
Checked by: Annika Briggs



1. $(N_1)_{60\text{-}CS}$ capped at 60; 2. CRRfield = 1 for non-liquefiable soils; 3. FS is capped at 2.0 for

KLEINFELDER
Bright People. Right Solutions.

Project Name: Brandt Road Bridge Replacement

Project No.: 25001840.001A

Project Location: Brandt Road & Bowles Road Intersection

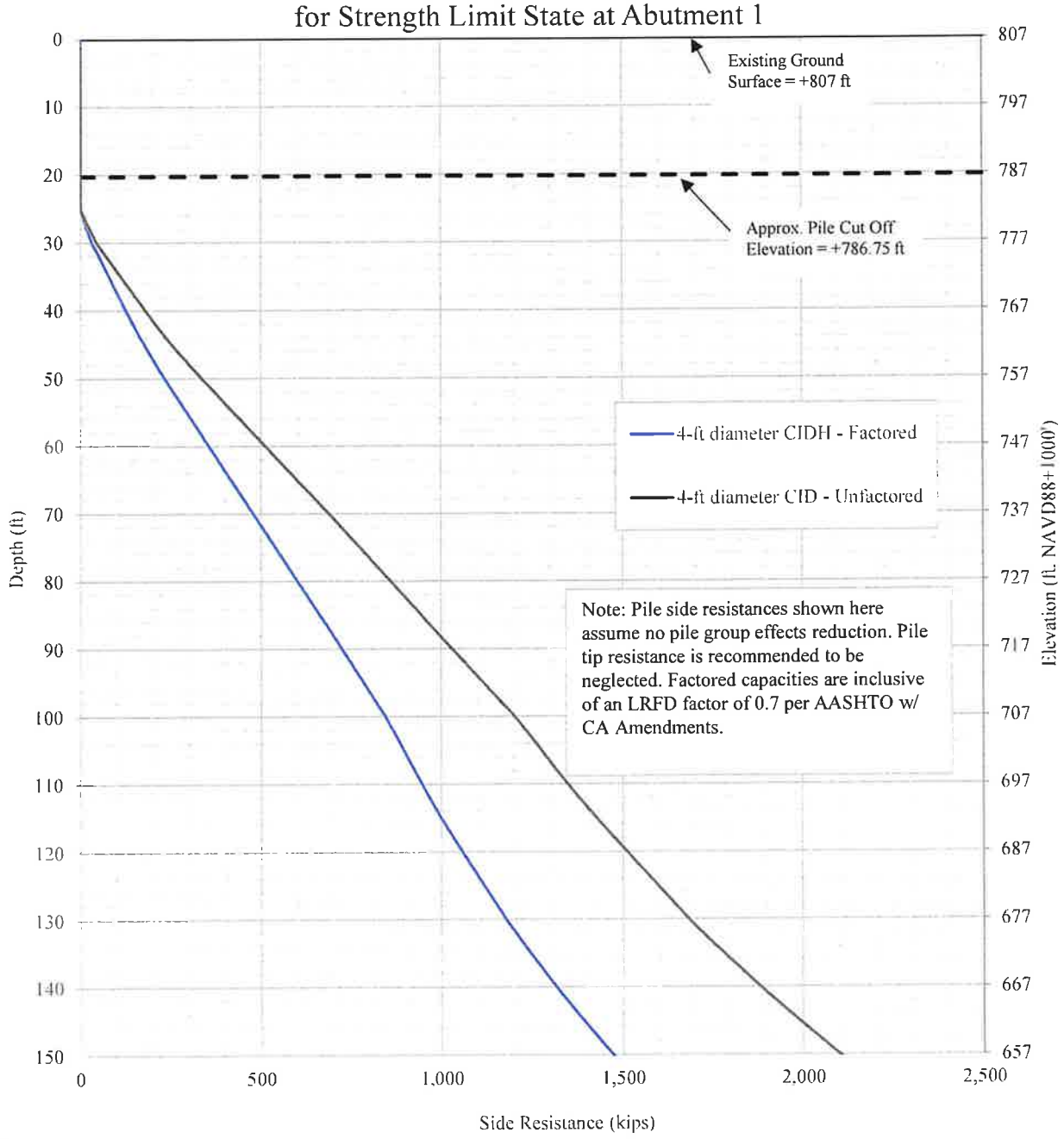
LIQUEFACTION ANALYSIS
BRANDT RD

Date 1/17/2025

D.2
PILE CAPACITIES AND LPILE PARAMETERS

Abutment 1

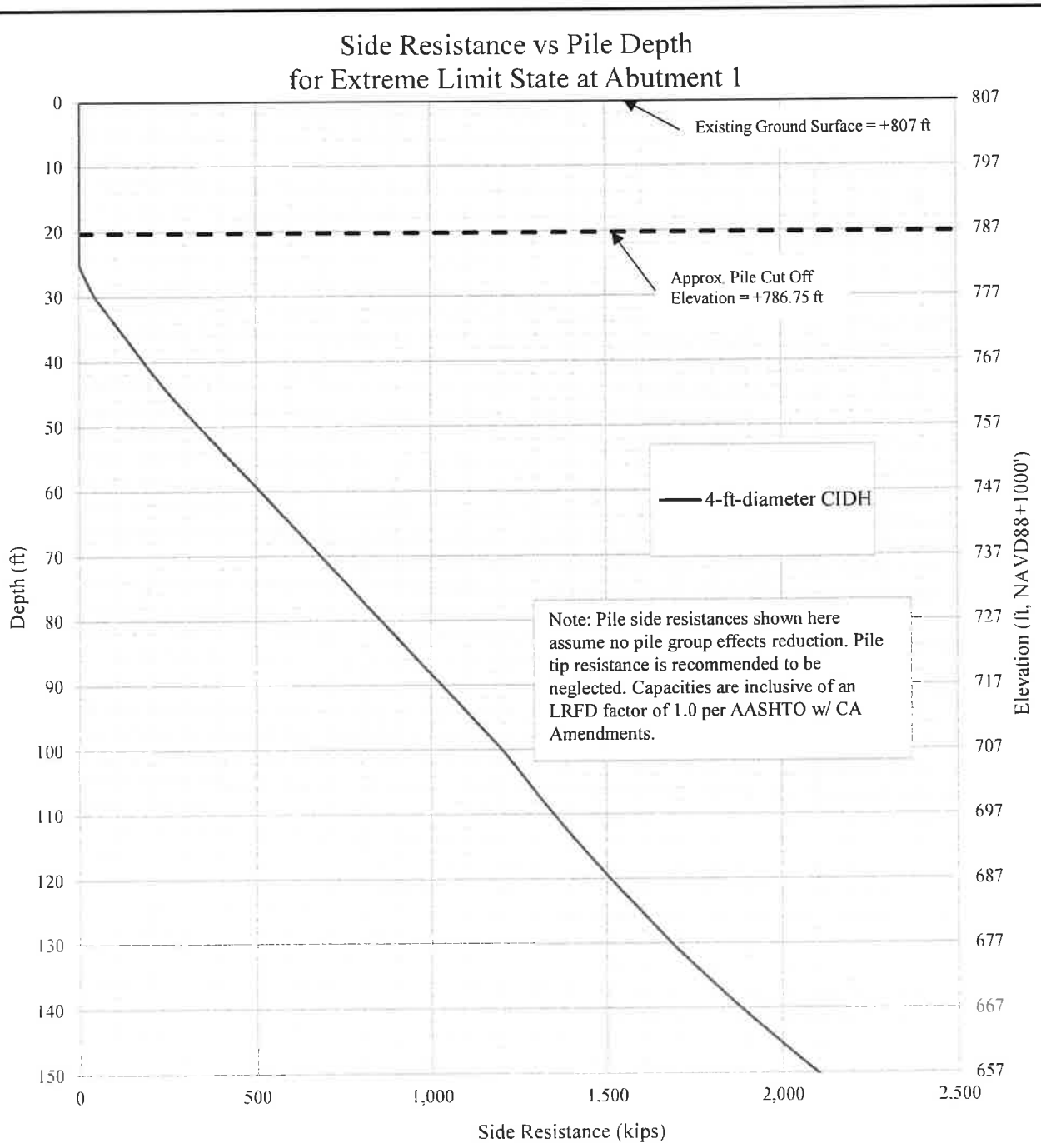
Side Resistance vs Pile Depth for Strength Limit State at Abutment 1



Notes:

1. The resistance curves represent axial compressive resistances for a single Cast-In-Drilled-Hole (CIDH) pile and include side resistance only.
2. Top of pile elevation assumed at elevation +786.75 ft (NAVD88+1000') per Foundation Data Table provided by the Structural Engineer.
3. A LRFD factor of 0.7 is applied to the factored axial side resistance for the strength limit state.
4. Group effects are not considered as in accordance with Caltrans Amendments to AASHTO LRFD Bridge Design Specifications, Table 10.8.3.6.3-1.

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 25001840.001A DATE: 8/2025 DRAWN: SF CHECKED BY: JB File Name: CIDH Charts Abutment 1.ppt	**Compressive Pile Capacity Strength Limit State CIDH Piles Abutment 1** BRANDT RD BRIDGE PROJECT SAN DIEGO, CALIFORNIA	FIGURE **D-1**

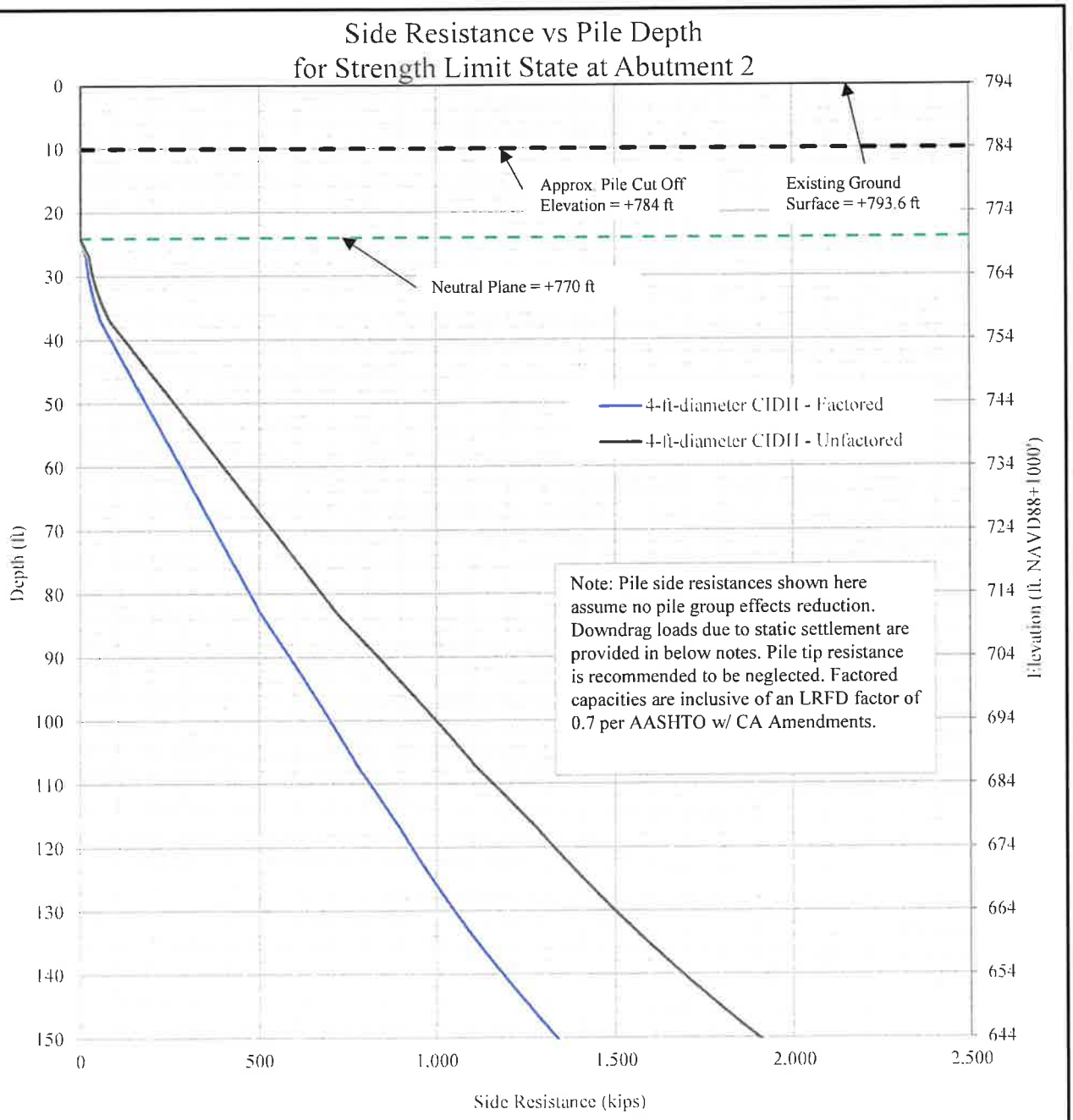


Notes:

1. The resistance curves represent axial compressive resistances for a single Cast-In-Drilled-Hole (CIDH) pile and include side resistance only.
2. Top of pile elevation assumed at elevation +786.75 ft (NAVD88+1000') per Foundation Data Table provided by the Structural Engineer.
3. A LRFD factor of 1.0 is applied to the factored axial side resistance for the extreme limit state.
4. Group effects are not considered as in accordance with Caltrans Amendments to AASHTO LRFD Bridge Design Specifications, Table 10.8.3.6.3-1.

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 25001840.001A DATE: 8/2025 DRAWN: SF CHECKED BY: JB File Name: CIDH Charts Abutment 1.ppt	**Compressive Pile Capacity** **Extreme Limit State** **CIDH Piles** **Abutment 1** BRANDT RD BRIDGE PROJECT SAN DIEGO, CALIFORNIA	FIGURE **D-2**

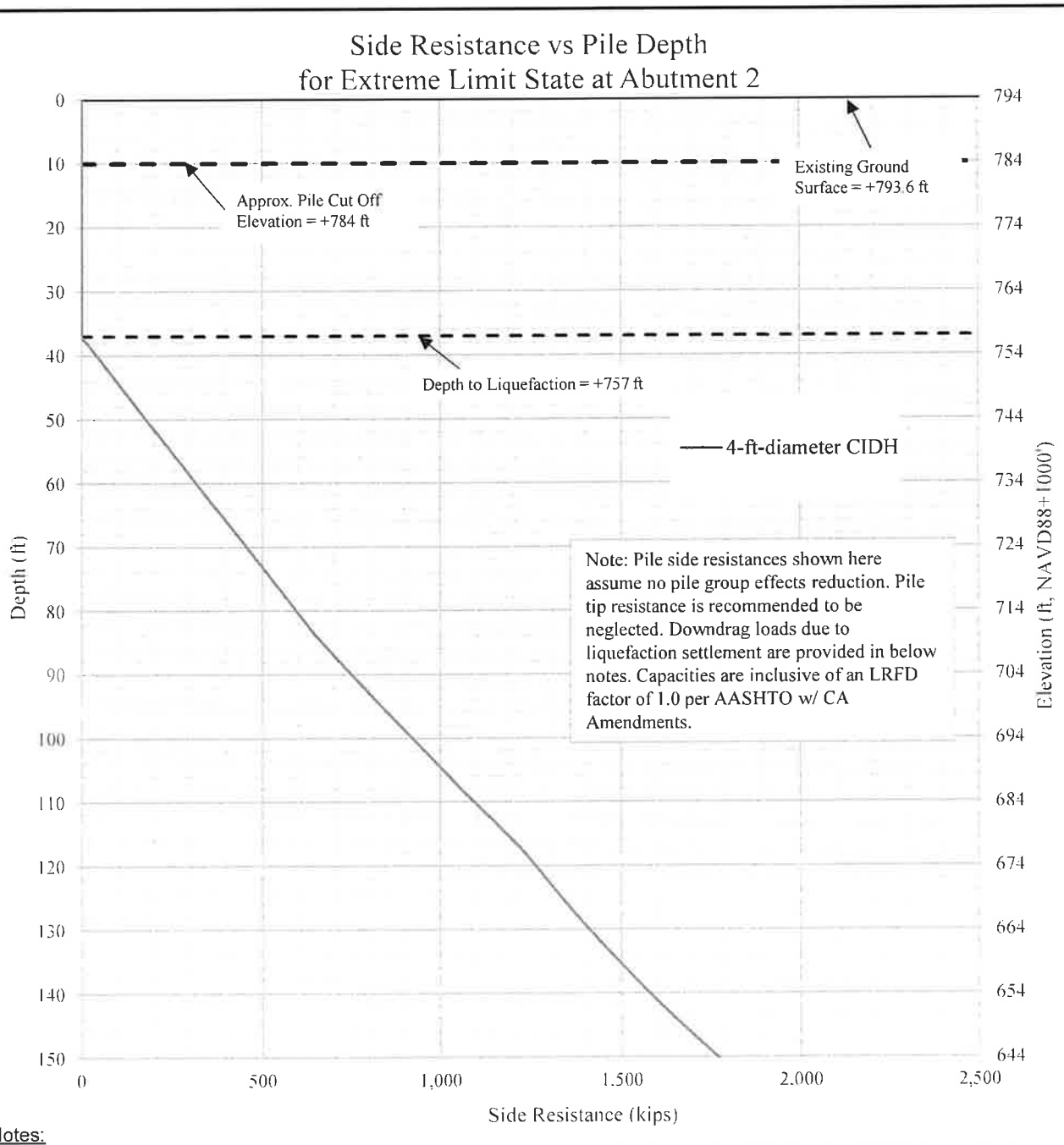
Abutment 2



Notes:

1. The resistance curves represent axial compressive resistances for a single Cast-In-Drilled-Hole (CIDH) pile and include side resistance only.
2. Top of pile elevation assumed at elevation +784 ft (NAVD88+1000') per Foundation Data Table provided by the Structural Engineer.
3. A LRFD factor of 0.7 is applied to the factored axial side resistance for the strength limit state.
4. A unfactored downdrag load of 95 kips for the 4-ft-diameter CIDH pile should be applied to the pile due to static settlement.
5. Group effects are not considered as in accordance with Caltrans Amendments to AASHTO LRFD Bridge Design Specifications, Section 10.7.3.9.

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 25001840.001A DATE: 8/2025 DRAWN: SF CHECKED BY: JB File Name: CIDH Charts Abutment 1.ppt	**Compressive Pile Capacity Strength Limit State CIDH Piles Abutment 2** BRANDT RD BRIDGE PROJECT SAN DIEGO, CALIFORNIA	FIGURE **D-3**



Notes:

1. The resistance curves represent axial compressive resistances for a single Cast-In-Drilled-Hole (CIDH) pile and include side resistance only.
2. Top of pile elevation assumed at elevation +784 ft (NAVD88+1000') per Foundation Data Table provided by the Structural Engineer.
3. A LRFD factor of 1.0 is applied to the factored axial side resistance for the extreme limit state.
4. A unfactored downdrag load of 200 kips for the 4-ft-diameter CIDH pile should be applied to the pile during earthquake loading due to liquefiable deposits.
5. Group effects are not considered as in accordance with Caltrans Amendments to AASHTO LRFD Bridge Design Specifications, Section 10.7.3.9.

KLEINFELDER Bright People. Right Solutions. www.kleinfelder.com	PROJECT NO. 25001840.001A DATE: 8/2025 DRAWN: SF CHECKED BY: JB File Name: CIDH Charts Abutment 1.ppt	**Compressive Pile Capacity Extreme Limit State CIDH Piles Abutment 2** BRANDT RD BRIDGE PROJECT SAN DIEGO, CALIFORNIA	FIGURE **D-4**

L-PILE PARAMETERS

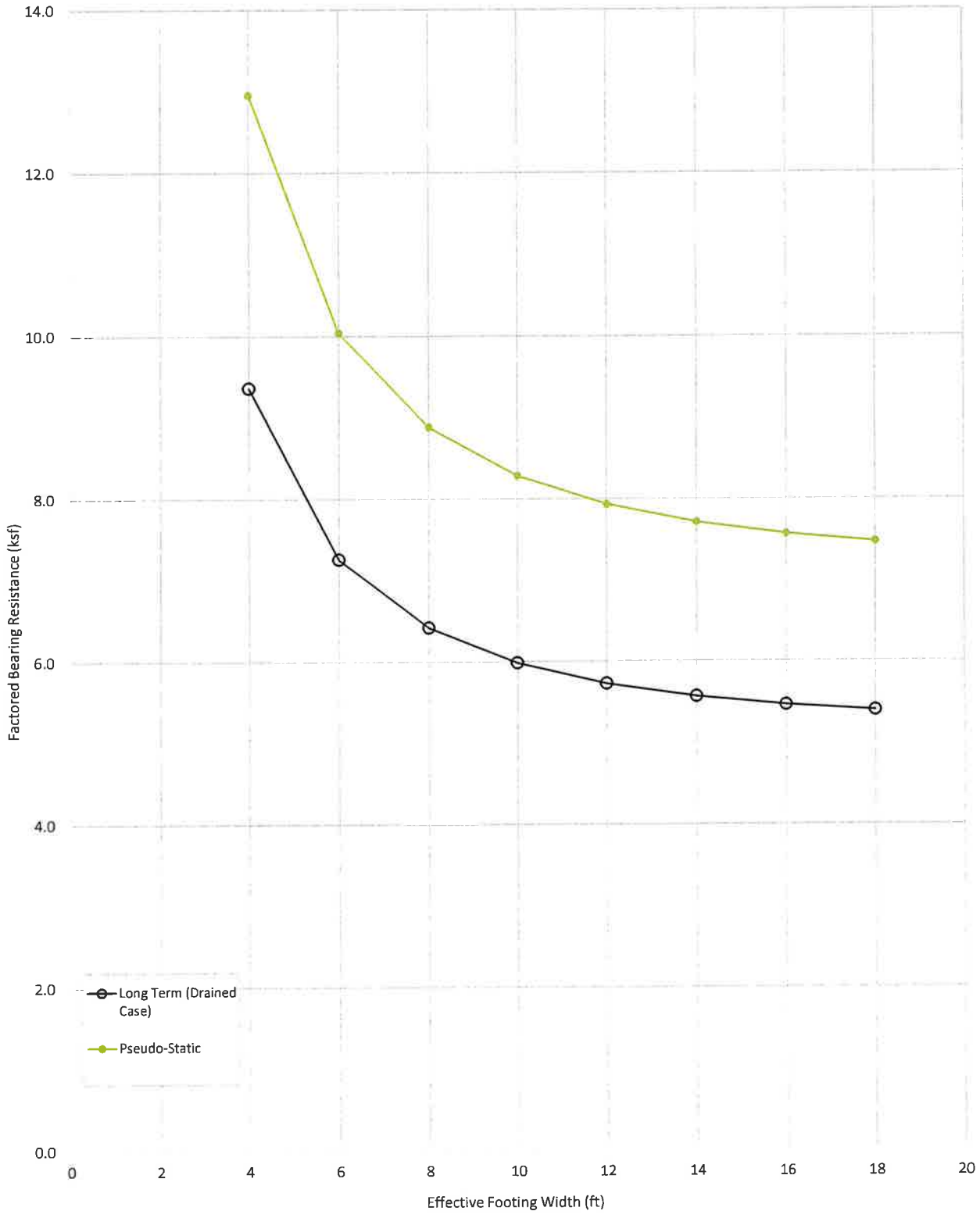
Design Soil Parameters for Lateral Resistance for Abutment 1 (South)

Soil Layer Number	Soil Description	Elevation (Feet, NAVD88+1000')		Strength Limit State							
		Top	Bottom	Model	γtotal (pcf)	γ' (pcf)	Su (psf)	Φ'	k_s (pci)	ε_50	J Factor
-	New Engineered Fill (above water)	-	-	Sand (Reese)	130	-	-	34	90	-	-
1	Existing Artificial Fill (af)	807	797	Stiff Clay w/o Free Water	95	-	1200	-	100	0.007	-
2	Lake Beds (Ql) (Clay)	797	787	Stiff Clay w/o Free Water	105	-	1200	-	100	0.007	-
3	Lake Beds (Ql) (Sand)	787	777	Sand (Reese)	115	52.6	-	33	125	-	-
4	Lake Beds (Ql) (Clay)	777	765.5	Stiff Clay w/o Free Water	110	47.6	2000	-	200	0.007	-
5	Lake Beds (Ql) (Sand)	765.5	757	Sand (Reese)	120	57.6	-	34	60	-	-
6	Lake Beds (Ql) (Clay)	757	707	Stiff Clay w/o Free Water	110	47.6	2500	-	400	0.005	-
7	Lake Beds (Ql) (Sand)	707	687	Sand (Reese)	125	62.6	-	36	125	-	-
8	Lake Beds (Ql) (Clay)	687	677	Stiff Clay w/o Free Water	115	52.6	2500	-	400	0.005	-
9	Lake Beds (Ql) (Sand)	677	657	Sand (Reese)	130	67.6	-	38	125	-	-

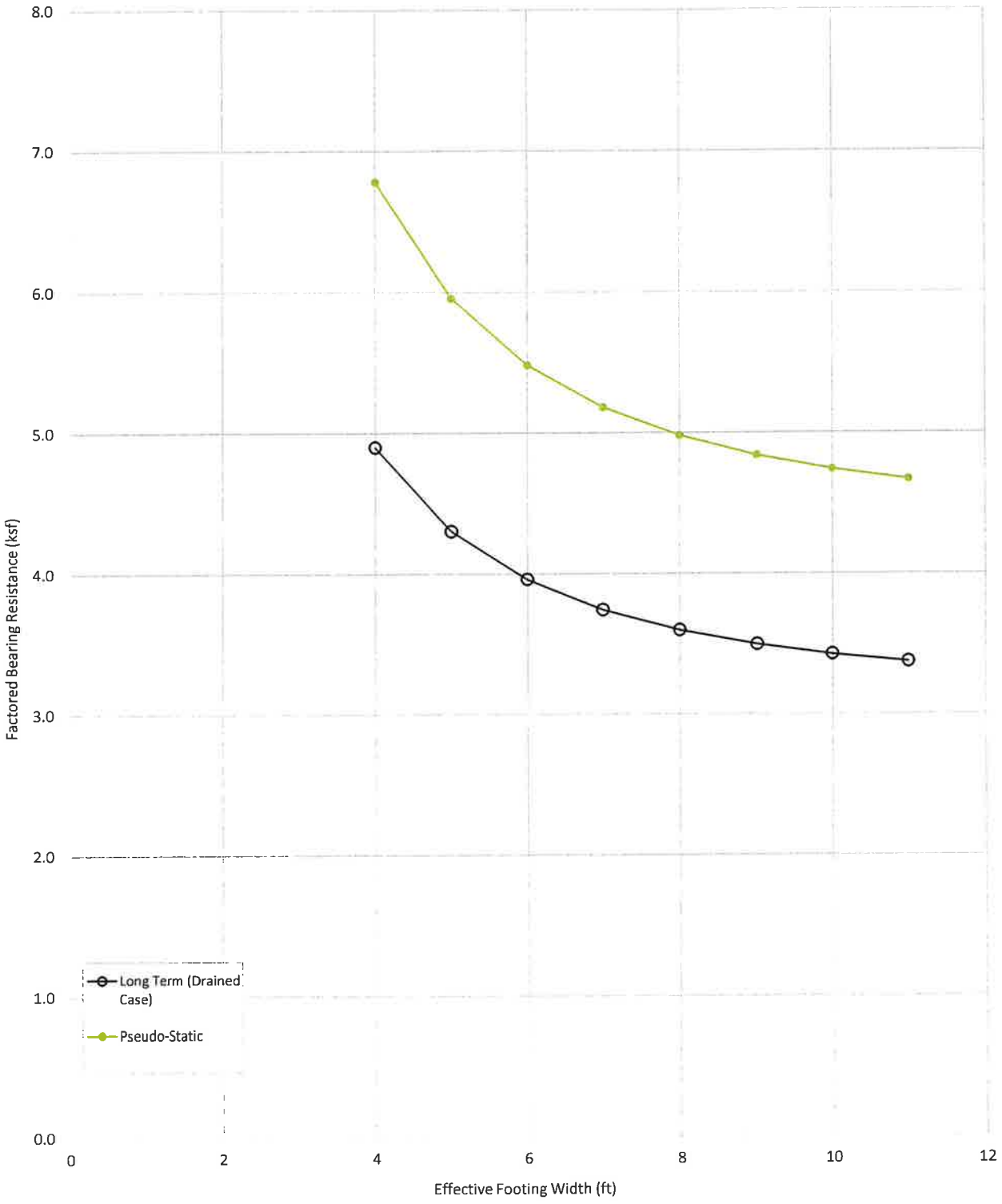
Design Soil Parameters for Lateral Resistance for Abutment 2 (North)

Soil Layer Number	Soil Description	Elevation (Feet, NAVD88+1000')		Strength Limit State								Extreme Limit State		
		Top	Bottom	Model	γtotal (pcf)	γ' (pcf)	Su (psf)	Φ'	k_s (pci)	ε_50	J Factor	Model	Sr (psf)	ε_50
-	New Engineered Fill (above water)	-	-	Sand (Reese)	130	-	-	34	90	-	-	-	-	-
1	Existing Artificial Fill (af)	807	787	Soft Clay (Matlock)	95	-	500	-	30	0.02	0.5	-	-	-
2	Lake Beds (Ql) (Clay)	787	781	Stiff Clay w/o Free Water	105	-	1000	-	100	0.01	-	-	-	-
3	Lake Beds (Ql) (Sand)	781	772	Sand (Reese)	115	52.6	-	33	125			-	-	-
4	Lake Beds (Ql) (Clay)	772	767	Stiff Clay w/o Free Water	110	47.6	1200	-	200	0.007	-	Soft Clay (Matlock)	600	0.02
5	Lake Beds (Ql) (Sand)	767	757	Sand (Reese)	120	57.6	-	34	60			Soft Clay (Matlock)	800	0.02
6	Lake Beds (Ql) (Clay)	757	711	Stiff Clay w/o Free Water	110	47.6	2000	-	400	0.005	-	-	-	-
7	Lake Beds (Ql) (Sand)	711	687	Sand (Reese)	125	62.6	-	36	125	-	-	-	-	-
8	Lake Beds (Ql) (Clay)	687	677	Stiff Clay w/o Free Water	115	52.6	2500	-	400	0.005	-	-	-	-
9	Lake Beds (Ql) (Sand)	677	657	Sand (Reese)	130	67.6	-	38	125			-	-	-

D.3
MSE WALL BEARING CAPACITY



KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: S. Floyd CHECKED BY: J. Bonfiglio DATE: 7/22/2025	Factored Bearing Resistance Design Height = 16 Feet Brandt Rd Bridge Replacement Over Alamo River Calipatria, CA	FIGURE D-5



KLEINFELDER Bright People. Right Solutions.	PROJECT NO.: 25001840.001A DRAWN BY: S. Floyd CHECKED BY: J. Bonfiglio DATE: 8/13/2025	Factored Bearing Resistance Design Height = 13.5 Feet Brandt Rd Bridge Replacement Over Alamo River Calipatria, CA	FIGURE D-6

D.4
MSE WALL GLOBAL STABILITY

MSE WALL
H = 16'-0"

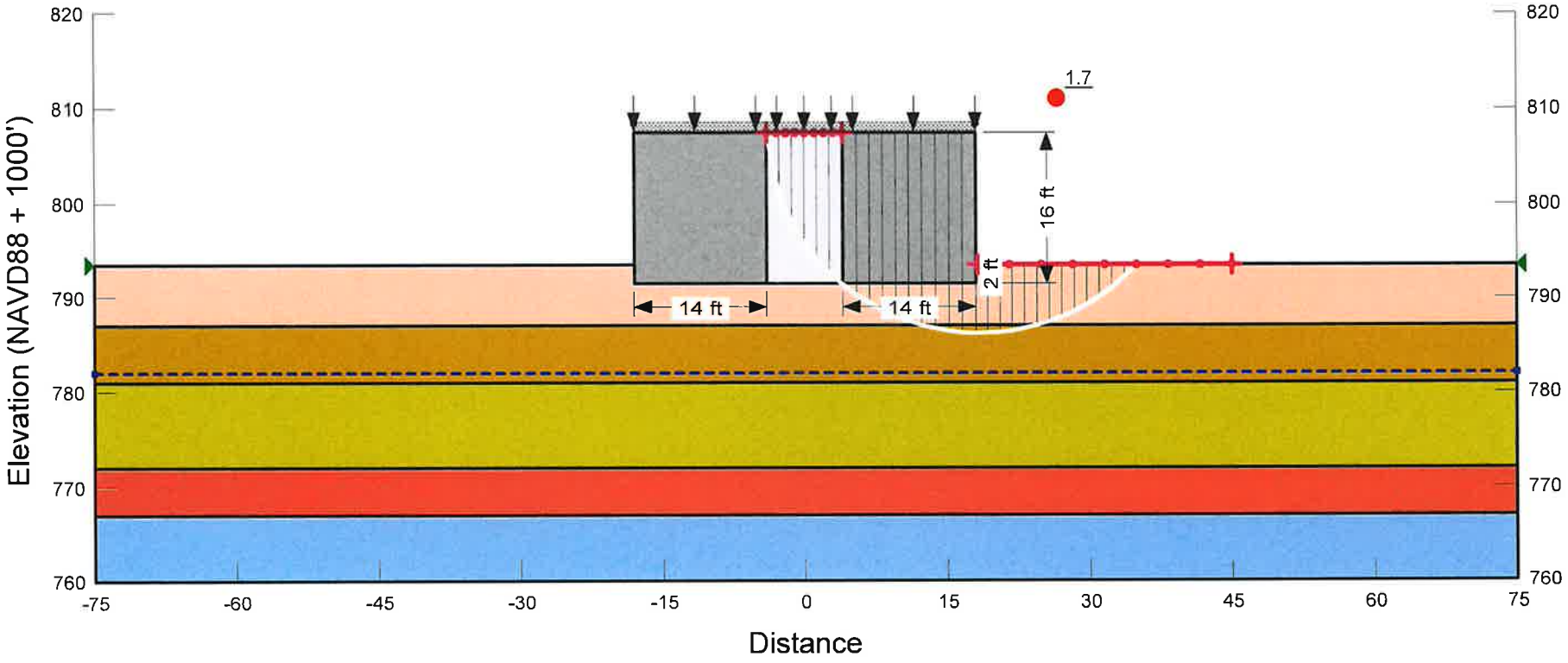
File Name: MSE Wall.gsz

Last Edited By: Spencer Floyd Date: 08/12/2025
Tool Version: 24.2.1.28

Geometry Set: 1 - MSE (H = 16')
Analysis: 1a.1 - Static
Description: Brandt Rd Bridge

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.7

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	MSE	High Strength	120			
	Structural Backfill	Mohr-Coulomb	120	0	34	



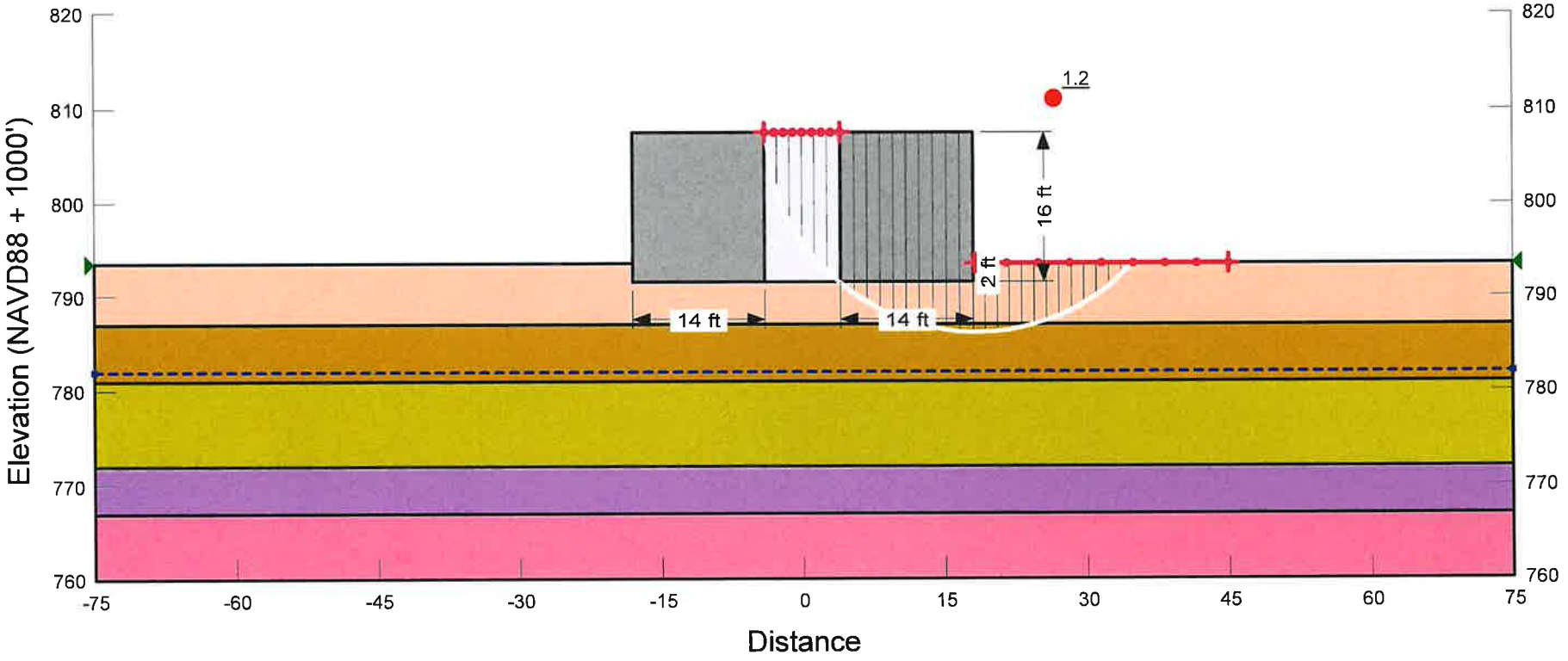
File Name: MSE Wall.gsz

Last Edited By: Spencer Floyd Date: 08/12/2025
Tool Version: 24.2.1.28

Geometry Set: 1 - MSE (H = 16')
Analysis: 1d.1 - Seismic-Liq
Description: Brandt Rd Bridge
Horz Seismic Coef.: 0.29

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.2

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	MSE	High Strength	120			
	Structural Backfill	Mohr-Coulomb	120	0	34	



MSE WALL
H = 13'-6"

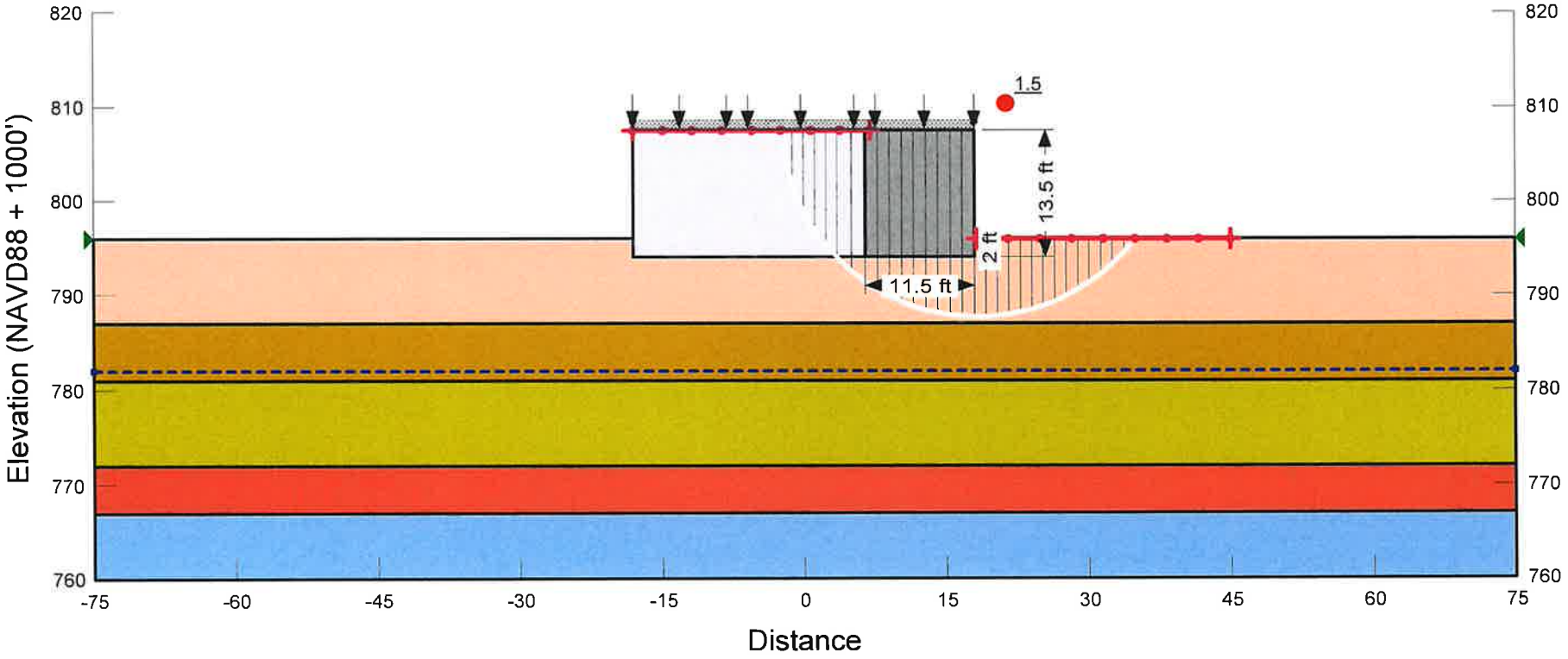
File Name: MSE Wall.gsz

Last Edited By: Spencer Floyd Date: 09/22/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - MSE (H = 13.5')
Analysis: 2a.1 - Static
Description: Brandt Rd Bridge

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.5

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	MSE	High Strength	120			
	Structural Backfill	Mohr-Coulomb	120	0	34	



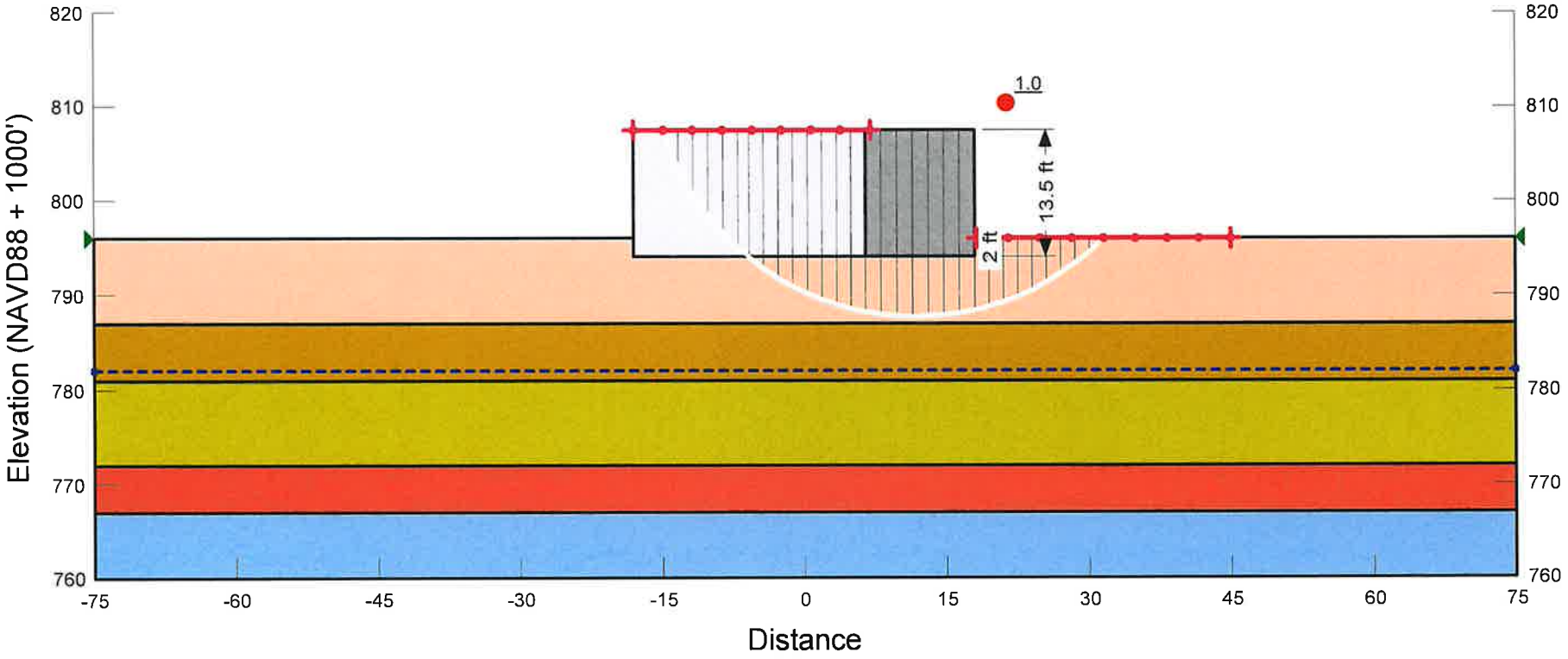
File Name: MSE Wall.gsz

Last Edited By: Spencer Floyd Date: 09/22/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - MSE (H = 13.5')
Analysis: 2b.1 - Seismic
Description: Brandt Rd Bridge
Horz Seismic Coef.: 0.29

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.0

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	MSE	High Strength	120			
	Structural Backfill	Mohr-Coulomb	120	0	34	



D.5
ABUTMENT SLOPE STABILITY AND LATERAL SPREADING

ABUTMENT 1

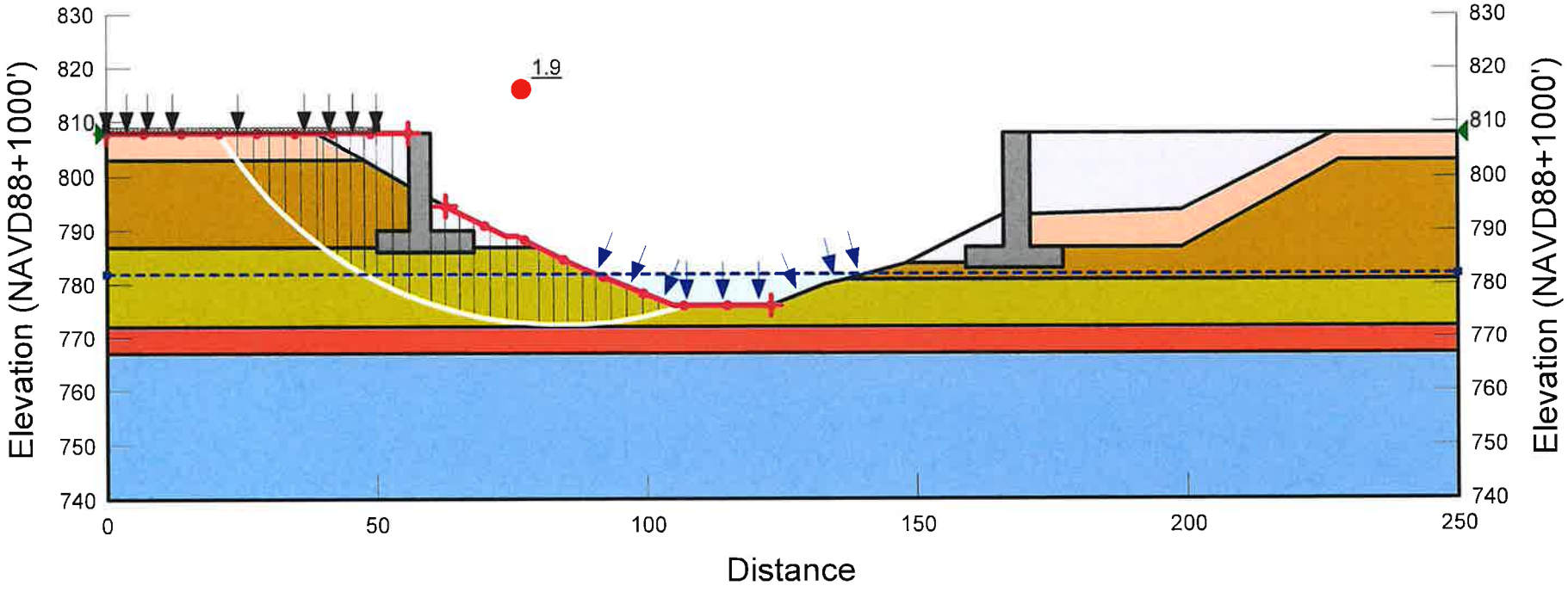
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 07/30/2025
Tool Version: 24.2.1.28

Geometry Set: 1 - Abutment 1
Analysis: 1a.1 - Static LT
Description: Long-Term

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.9

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			1,200
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,200
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			2,000
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



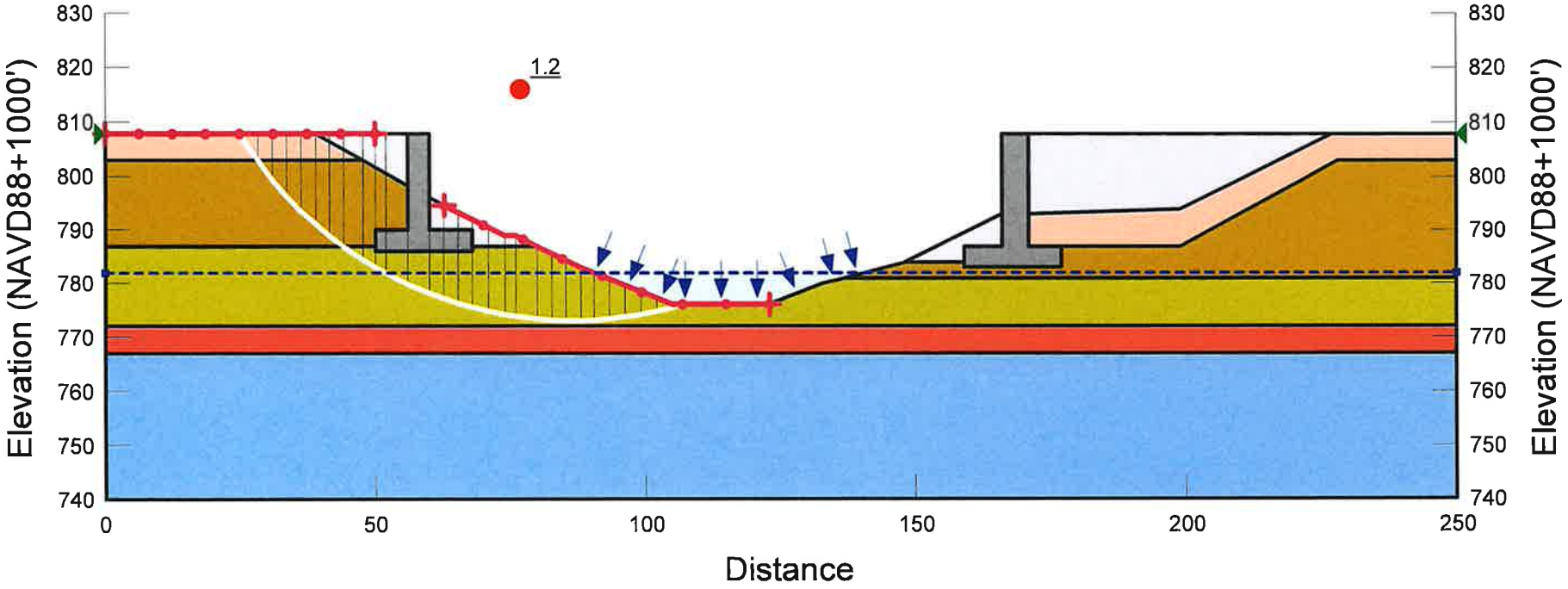
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 07/30/2025
Tool Version: 24.2.1.28

Geometry Set: 1 - Abutment 1
Analysis: 1b.1 - Seismic
Description: Pseudo-static
Horz Seismic Coef.: 0.29

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.2

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			1,200
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,200
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			2,000
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



ABUTMENT 2

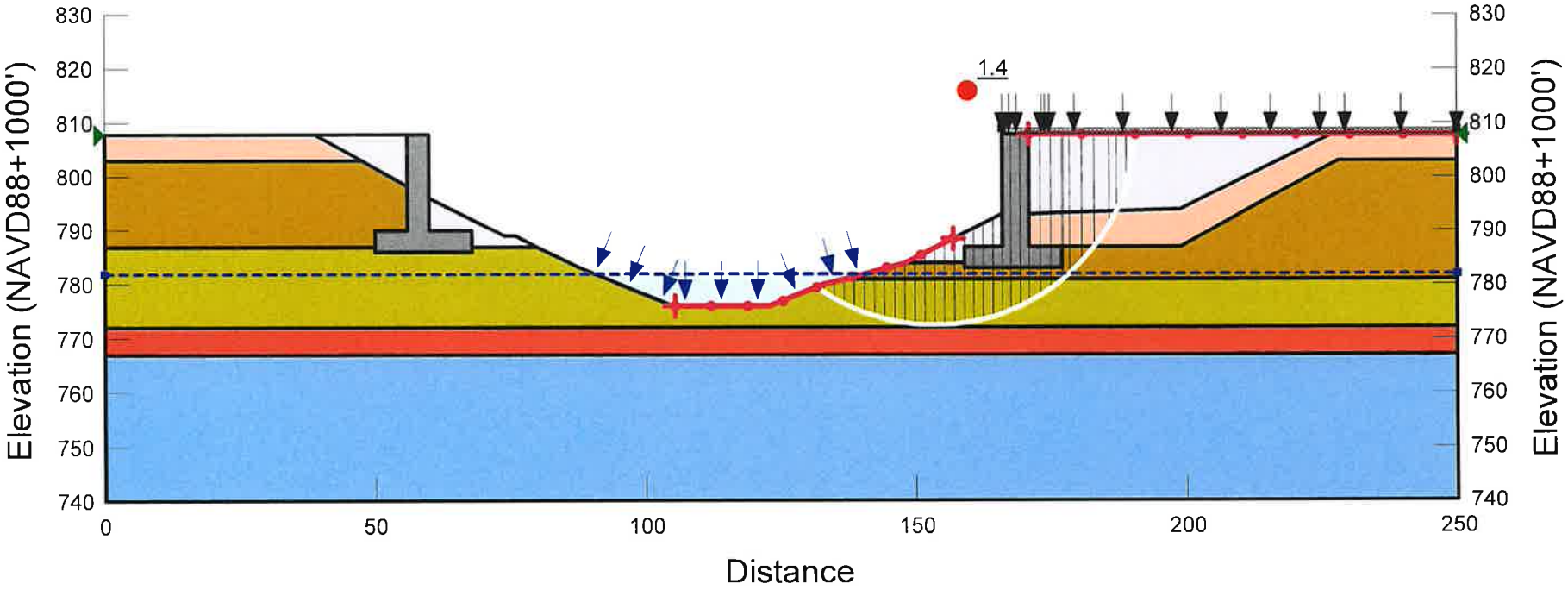
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 07/28/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2a.2 - Static LT
Description: Long-Term

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.4

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



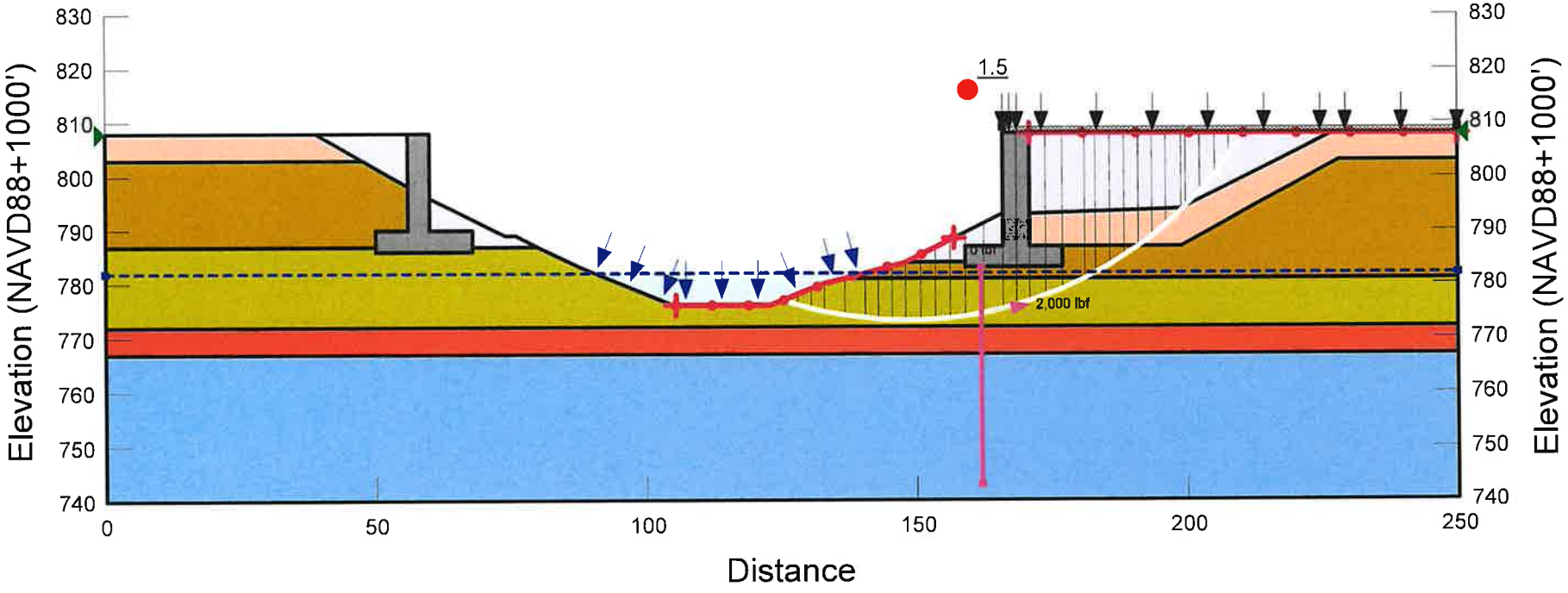
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 07/28/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2a.3 - Static LT (w/ pile)
Description: Long-Term

Method: Spencer
Slip Surface Option: Entry and Exit
Optimized Critical Slip Surface: No
Factor of Safety: 1.5

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



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Bright People. Right Solutions.

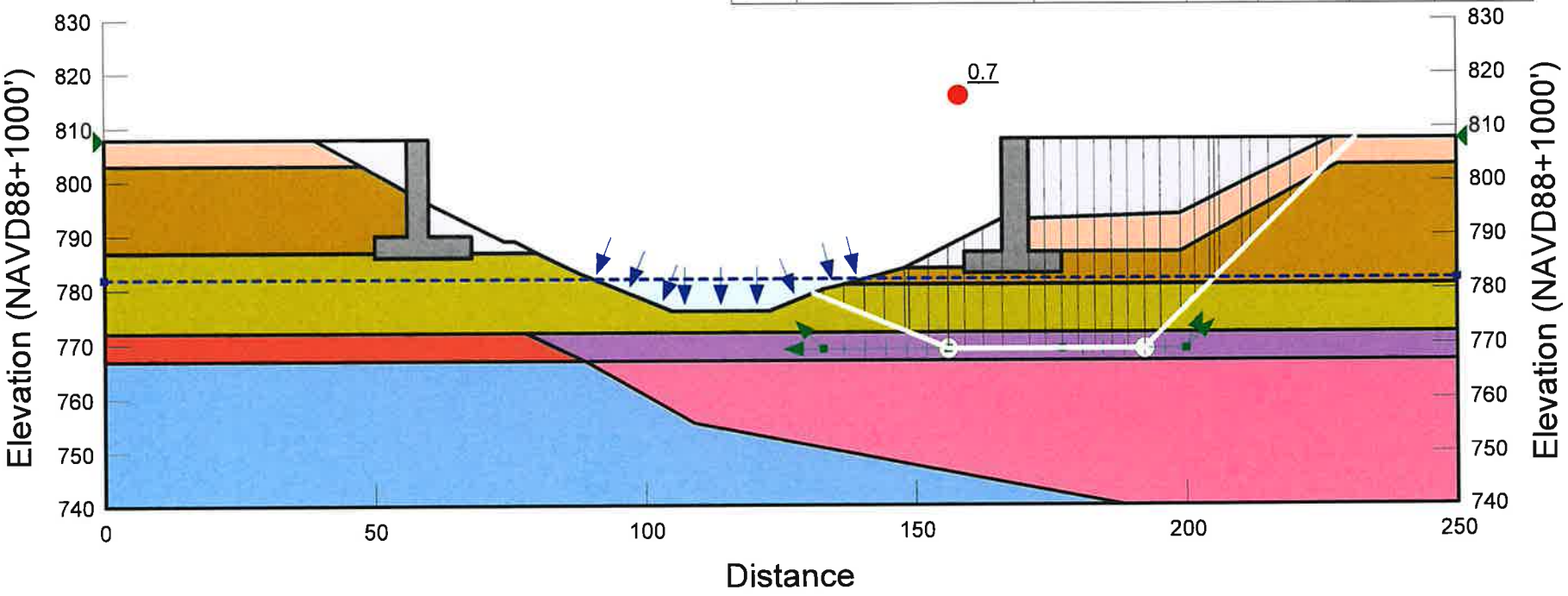
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 07/28/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2b.1 - Seismic-Liq
Description: Kh w/ liq
Horz Seismic Coef.: 0.29

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 0.7

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



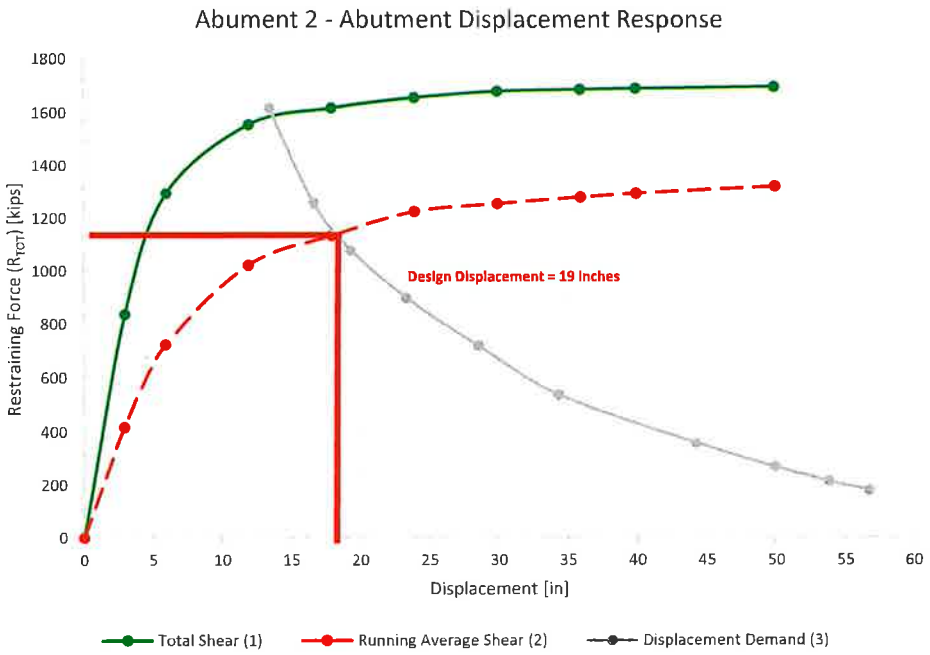
ABUTMENT 2
DISPLACEMENT ANALYSIS

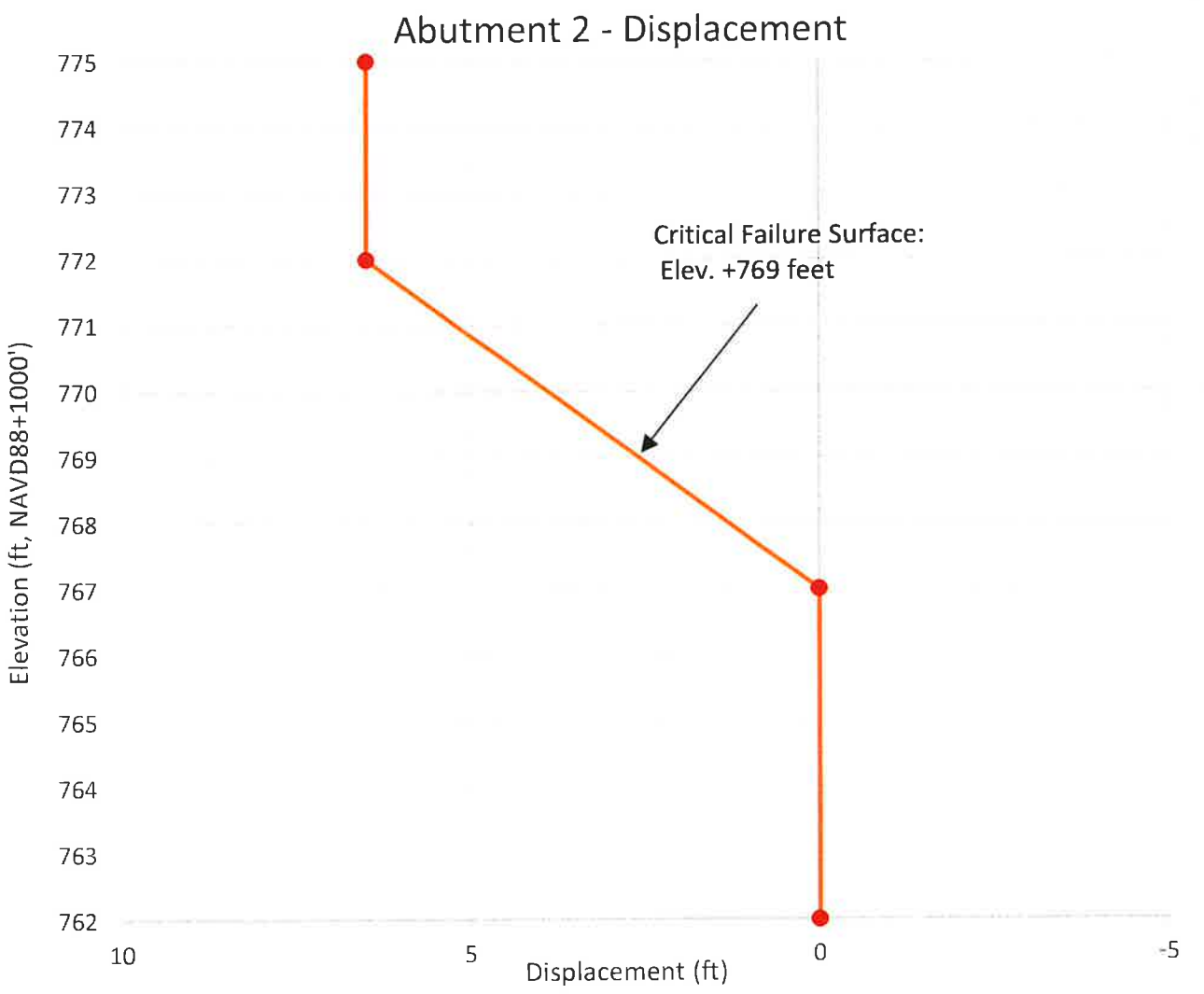
Abutment 2
Lateral Spreading Soil Displacement Profile

Elevation of top of Pile (Lpile):	783.75	ft
Elevation of critical failure surface:	769	ft
Depth of failure surface relative to the top of the pile:	14.75	ft
Number of CIDH piles:	6	
Abutment width:	36	ft

Load Case	Soil Displacement at Top of Profile [in]	Resisting Shear Force [kip]	Total Shear Force [kip]	Average Total Shear [kip]
0	0	0	0	0
1	3.0	139.6	837.7	418.8
2	6.0	216.0	1296.3	723.9
3	12.0	259.5	1557.1	1023.5
4	18.0	270.0	1619.7	1137.2
5	24.0	276.3	1658.1	1226.2
6	30.0	280.3	1681.7	1256.0
7	36.0	281.4	1688.4	1281.0
8	40.0	282.0	1692.2	1295.3
9	50.0	283.2	1699.0	1322.6

Load Case	Sliding Mass Displacement [in]	Restraining Force/Width [lb/ft]	Restraining Force [kips]
0	56.8	5000	180
1	53.9	6000	216
2	50.0	7500	270
3	44.3	10000	360
4	34.4	15000	540
5	28.6	20000	720
6	23.4	25000	900
7	19.4	30000	1080




Abutment 2 - Displacement
775
774
773
772
771
770
769
768
767
766
765
764
763
762
Elevation (ft, NAVD88+1000')
Critical Failure Surface:
Elev. +769 feet
10
5
0
-5
Displacement (ft)

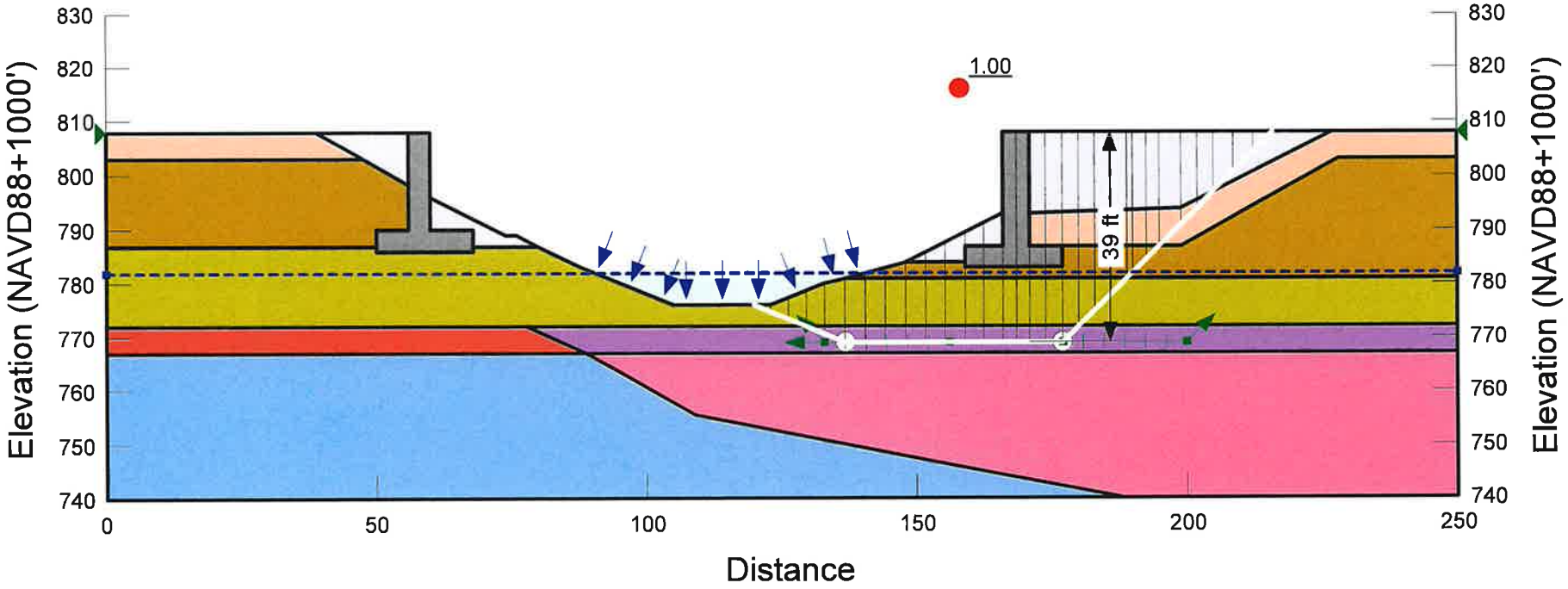
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 07/28/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2c.1 - Seismic-Liq (yc ff)
Description: Kh w/ liq
Horz Seismic Coef.: 0.1

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



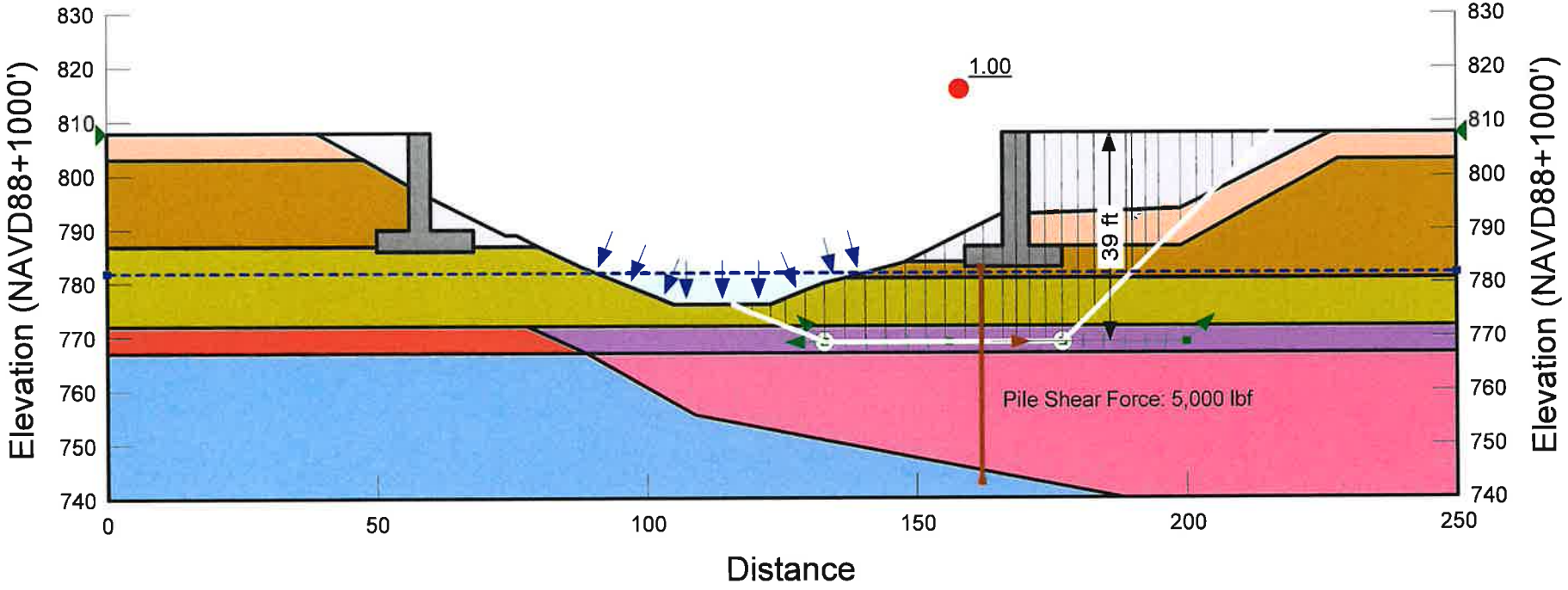
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.1 - Seismic-Liq (yc) (5k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.138

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



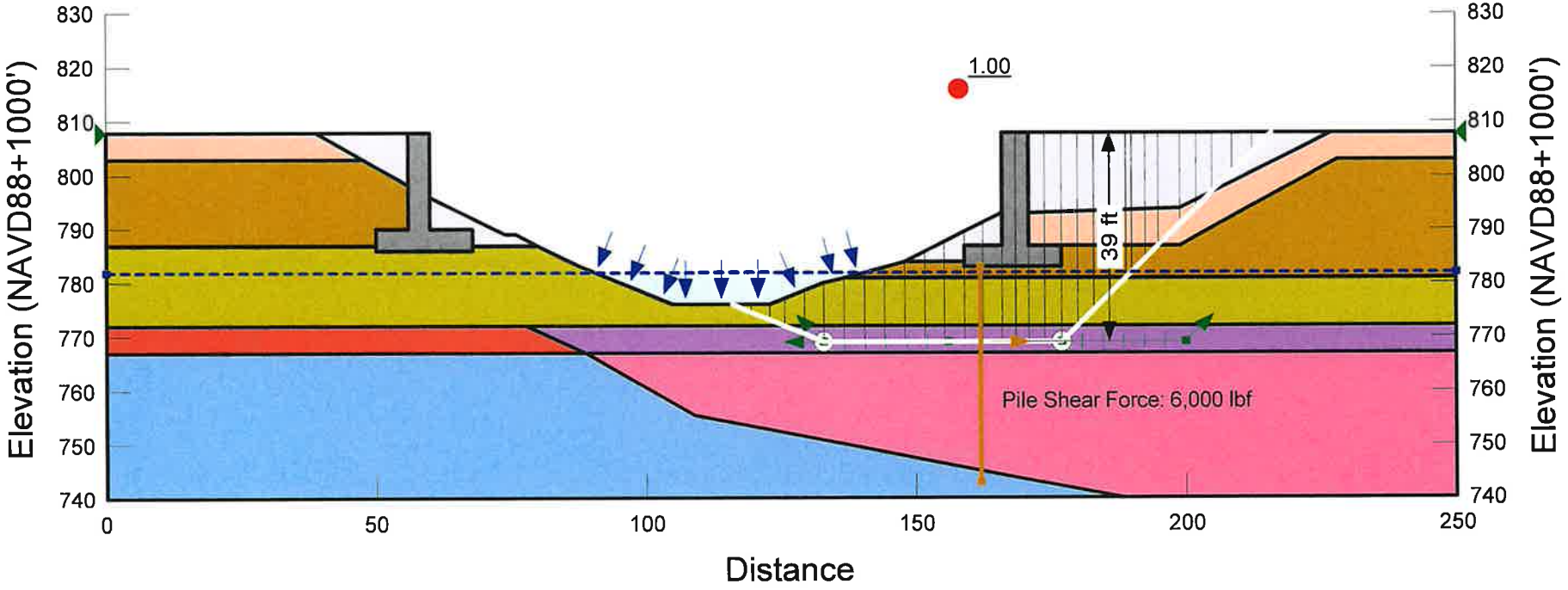
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.2 - Seismic-Liq (yc) (6k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.145

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



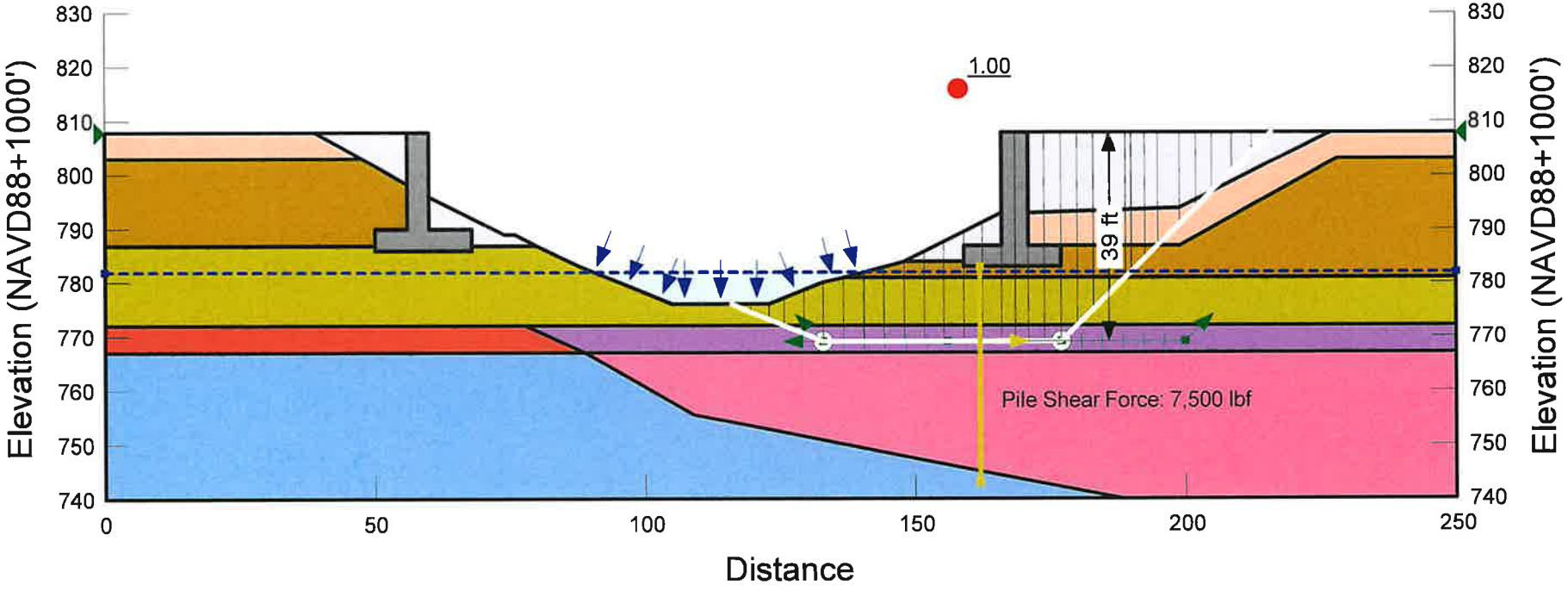
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.3 - Seismic-Liq (yc) (7.5k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.155

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



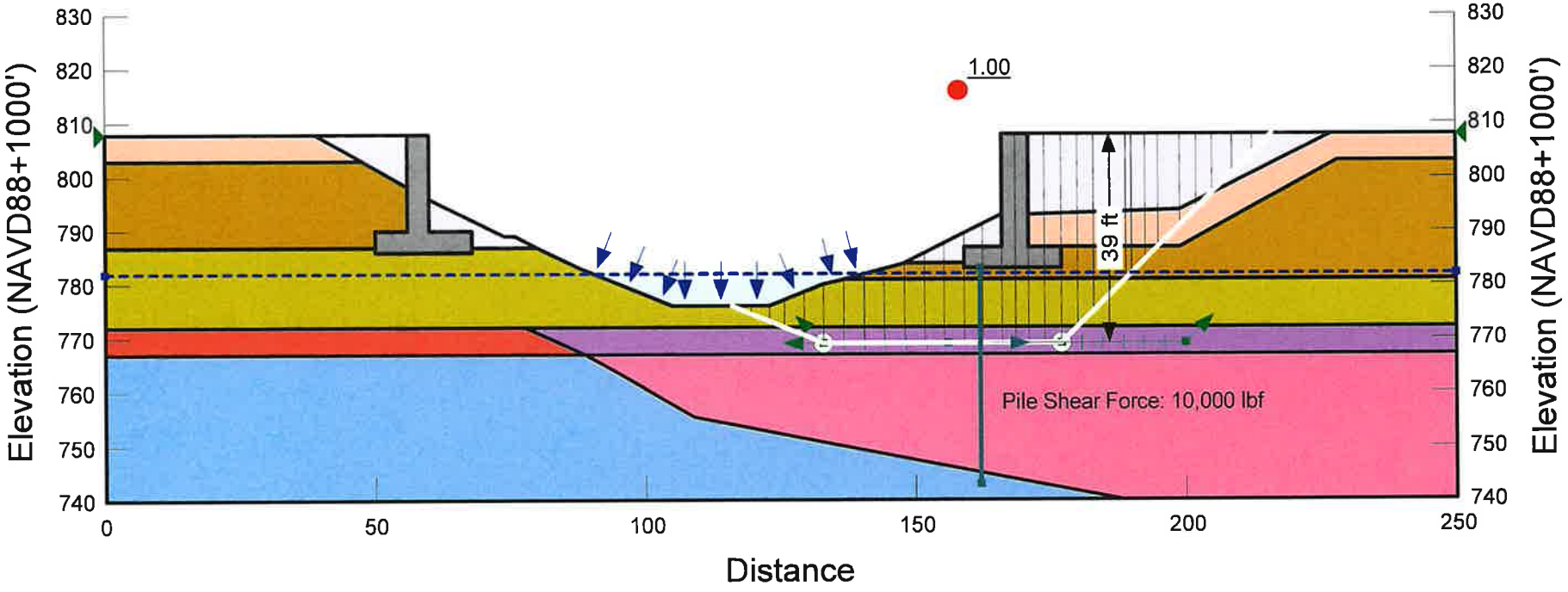
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.4 - Seismic-Liq (yc) (10k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.172

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



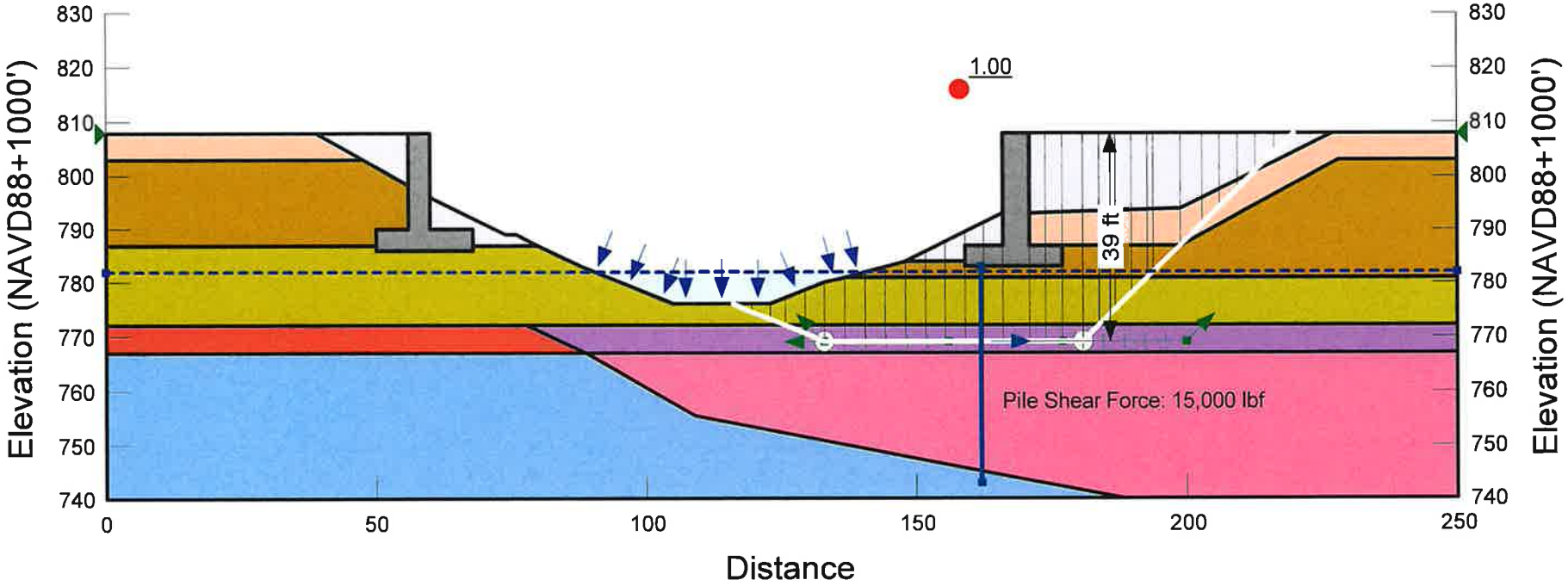
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.5 - Seismic-Liq (yc) (15k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.21

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



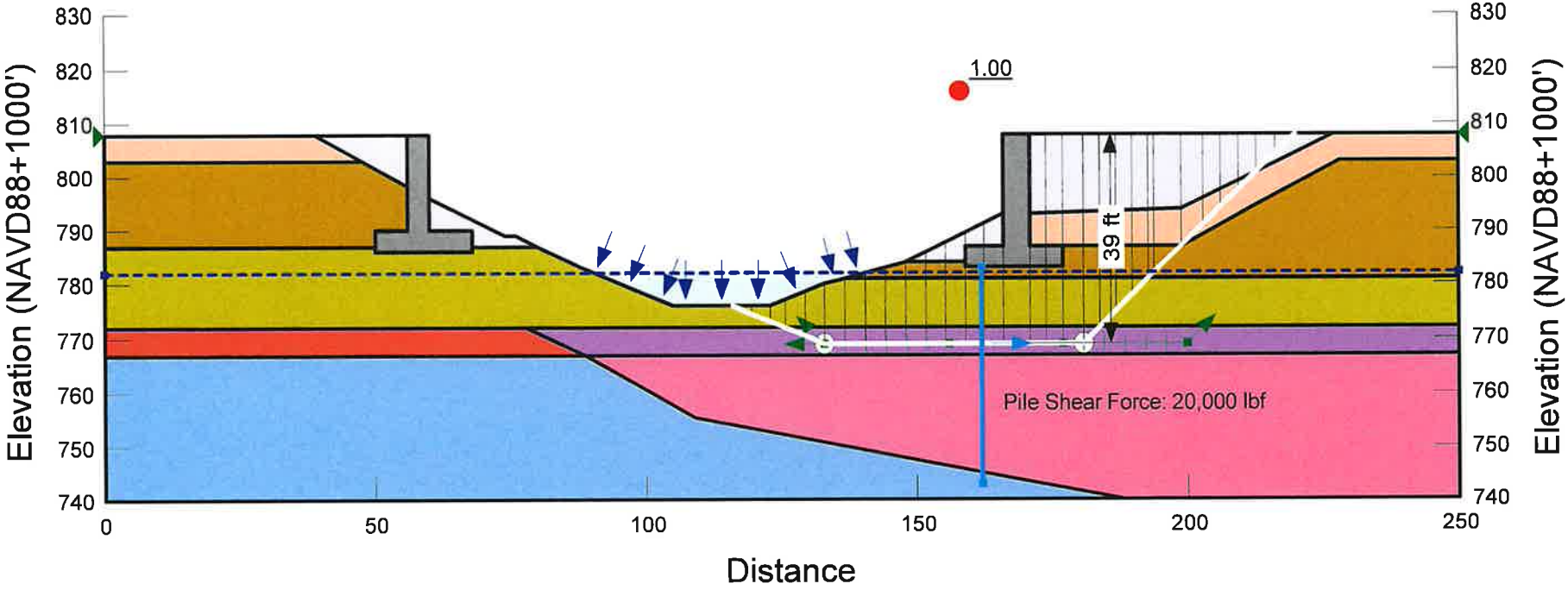
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.6 - Seismic-Liq (yc) (20k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.24

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



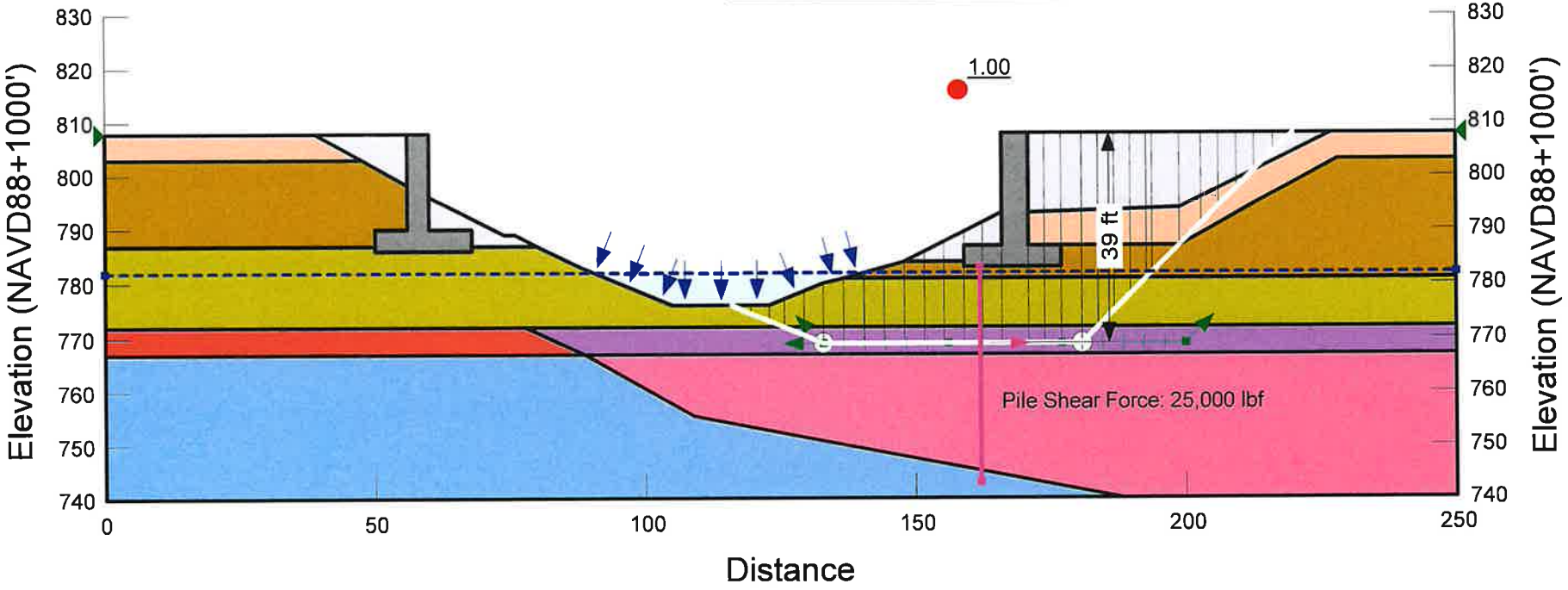
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.7 - Seismic-Liq (yc) (25k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.275

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



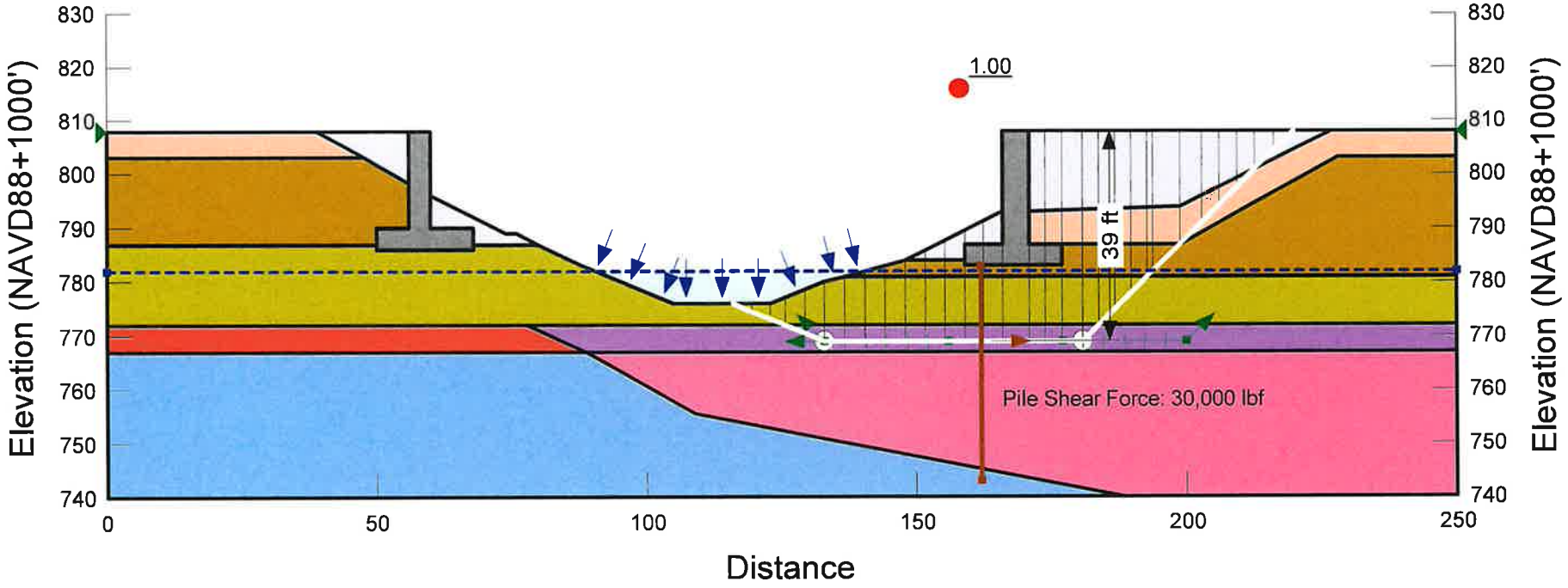
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.8 - Seismic-Liq (yc) (30k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.31

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



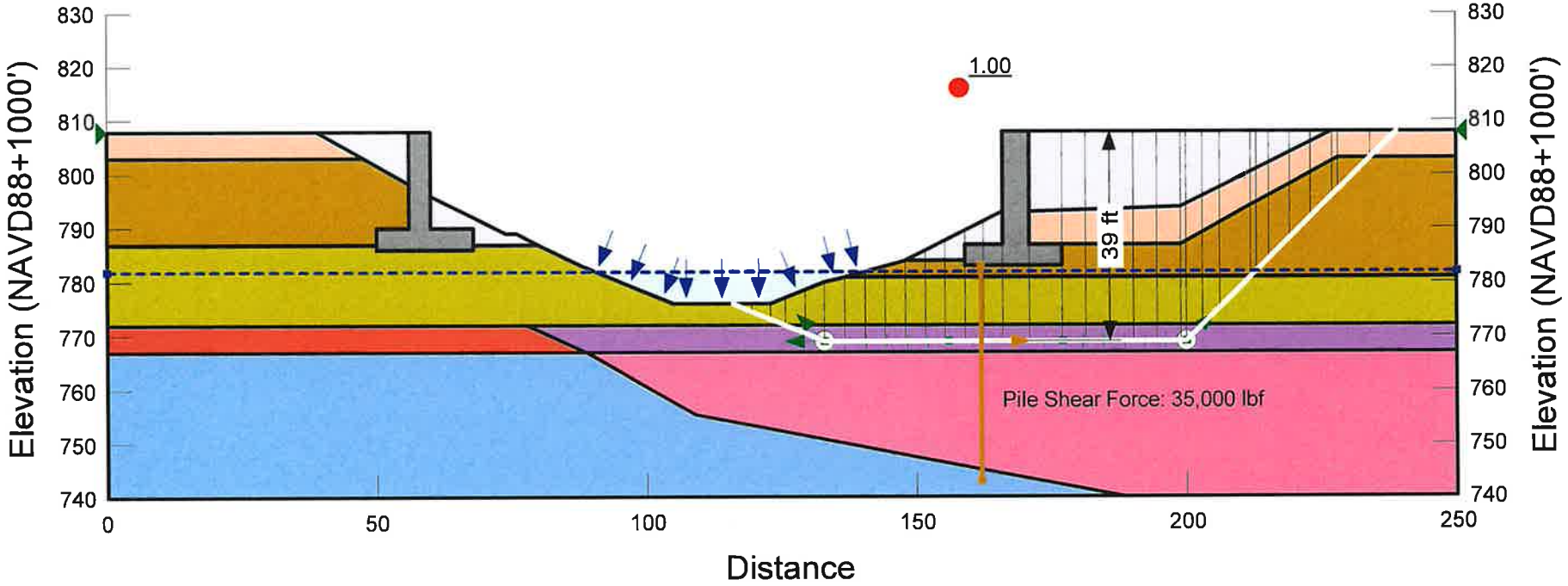
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.9 - Seismic-Liq (yc) (35k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.34

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



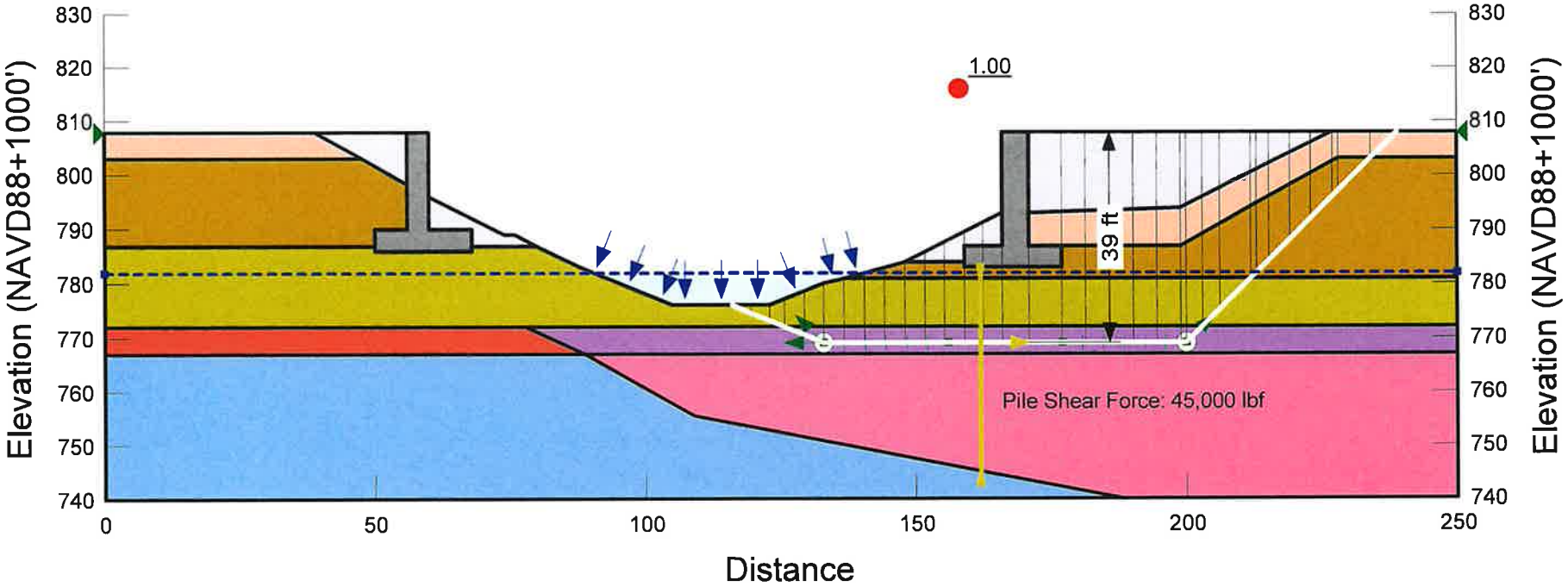
File Name: Abutment Stability.gsz

Last Edited By: Spencer Floyd Date: 08/15/2025
Tool Version: 24.2.1.28

Geometry Set: 2 - Abutment 2
Analysis: 2d.91 - Seismic-Liq (yc) (45k)
Description: Kh w/ liq
Horz Seismic Coef.: 0.385

Method: Spencer
Slip Surface Option: Block
Optimized Critical Slip Surface: No
Factor of Safety: 1.00

Color	Name	Slope Stability Material Model	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)	Undrained Shear Strength (psf)
	1 - Existing Fill (af)	Undrained (Phi=0)	95			500
	2 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	105			1,000
	3 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	115	0	33	
	4 - Lake Beds (Ql) (Clay)	Undrained (Phi=0)	110			1,200
	4 - Lake Beds (Ql) (Clay) (Sr)	Undrained (Phi=0)	110			600
	5 - Lake Beds (Ql) (Sand)	Mohr-Coulomb	120	0	34	
	5 - Lake Beds (Ql) (Sand) (Sr)	Undrained (Phi=0)	120			800
	Concrete	High Strength	150			
	Structural Backfill	Mohr-Coulomb	120	0	34	



APPENDIX E

GEOTECHNICAL BUSINESS COUNCIL INSERT

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Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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KLEINFELDER
Bright People. Right Solutions.

INITIAL SITE ASSESSMENT
BRANDT ROAD BRIDGE REPLACEMENT PROJECT
CITY OF CALIPATRIA
IMPERIAL COUNTY, CALIFORNIA

JUNE 6, 2025

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ONLY THE CLIENT OR ITS DESIGNATED REPRESENTATIVES MAY USE THIS DOCUMENT AND ONLY FOR THE SPECIFIC PROJECT FOR WHICH THIS REPORT WAS PREPARED.

A Report Prepared for:

Mr. Robert Ureña III, PE
Principal Engineer
Imperial County Department of Public Works
155 S. 11th Street
El Centro, California 92243

INITIAL SITE ASSESSMENT
BRANDT ROAD BRIDGE REPLACEMENT PROJECT
CITY OF CALIPATRIA
IMPERIAL COUNTY, CALIFORNIA

Prepared by:

Stefan Birardi
Project Professional

Reviewed by:

Lizanne Simmons, PG 7431
Senior Principal Geologist

KLEINFELDER, INC
770 First Avenue, Suite 400
San Diego, California 92101
Phone: 619.831.4600

June 6, 2025
Project No: 25001840.001A

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A Initial Site Assessment Checklist
B Regulatory Agency Database Report
C User Provided and Regulatory Agency Documentation
D Historical Research Documentation

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1 EXECUTIVE SUMMARY

Kleinfelder, Inc. (Kleinfelder) has completed this Initial Site Assessment (ISA) for Imperial County Department of Public Works (ICDPW / Client) for the Brandt Road bridge replacement Project located in the City of Calipatria, Imperial County, California (Project). The Project incorporates Brandt Road bridge (Bridge No. 58C-0165) and approximately 200-feet north and south of the bridge. Kleinfelder understands that the Client is proposing to replace the Brandt Road bridge.

Information gathered, and activities performed for this ISA were consistent with those required to address the Caltrans' *Initial Site Assessment (ISA) Checklist* for Hazardous Waste (Appendix DD, Hazardous Waste, Project Development Procedures Manual, July 1, 1999). The completed *Initial Site Assessment (ISA) Checklist* for Hazardous Waste pursuant to Caltrans' Guidelines is included in Appendix A.

During the preparation of the ISA, the following information that could potentially affect environmental conditions was revealed:

- Elevated concentrations of lead (from use of leaded gasoline) and other metals are sometimes associated with older roadways. Based on a review of historical documentation, Brandt Road has been present since at least 1937. The potential exists for aerially deposited lead (ADL) to be encountered during construction activities. Soil sampling for the presence of ADL should be performed in unpaved locations of the Project area prior to construction activities. Should lead be detected in the soil samples, a lead compliance plan should be prepared prior to the start of construction activities.
- Chemicals associated with railroad usage include petroleum products, metals, pesticides, and herbicides. A railroad track was present crossing the southern portion of the Project from 1937 and 1995. The potential exists for chemicals associated with railroads to be present in soils surrounding the Project.
- The Project proposes to replace the Brandt Road bridge structure (Bridge No. 58C-0165). The potential exists for asbestos-containing materials (ACMs) and lead-containing paint (LCP) to be present. The ACM survey should be performed in conformance with the United States Environmental Protection Agency (USEPA) National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 Code of Federal Regulations (CFR) Part 61, Subpart M Section 61.145. The LCP survey should be performed in accordance with California Department of Public Health (CDPH) guidelines.
- Although not anticipated in other areas of the Project, should impacted soil (as evidenced by staining and/or odors) be encountered during construction activities, the Person in Charge

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overseeing construction should stop work until a hazardous waste specialist is able to assess the soil for proper handling.

- The Alamo River flows beneath the Project. The Imperial County Health Department stated the Alamo River is polluted with both biological and chemical wastes. Caltrans has also designated the river as a Class 4 waterway. A Class 4 waterway is defined as "water that is known to be grossly contaminated by biological or chemical contaminants, or any level of radiological contaminates." Contact with water should be avoided; however, should contact with water be required, appropriate personal protective equipment should be used, and workers coming in contact with water must be immunized for hepatitis A virus, hepatitis B virus and tetanus. If dewatering is required, purged water should be contained, sampled, and disposed according to state and federal regulations.

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2 INTRODUCTION

2.1 PURPOSE

Information gathered, and activities performed for this ISA were consistent with those required to address the State of California Department of Transportation's (Caltrans') *Initial Site Assessment (ISA) Checklist* for Hazardous Waste (Appendix DD, Hazardous Waste, Project Development Procedures Manual, July 1, 1999). The completed *ISA Checklist* pursuant to Caltrans' Guidelines is included in Appendix A.

2.2 DETAILED SCOPE-OF-SERVICES

The following sections describe Kleinfelder's work scope:

- Section 2, **Introduction**, includes a discussion of the purpose/reason for performing the ISA, additional services requested by the Client (e.g., an evaluation of business environmental risk factors associated with the Project), significant assumptions (e.g., property boundaries if not marked in the field), limitations, exceptions, special terms and conditions (e.g., contractual), and user reliance parameters.
- Section 3, **Project Description**, is a compilation of information concerning the Project location, physical setting, and geologic and hydrogeologic conditions.
- Section 4, **Records Review**, is a compilation of Kleinfelder's review of several databases available from the federal, state, and local regulatory agencies regarding hazardous substance use, storage, or disposal at the Project; and for off-site facilities within a 1-mile radius from the Project. This section includes summaries of interviews and telephone conversations conducted by Kleinfelder with people, if available, knowledgeable about the Project and local regulatory personnel. This section also presents information obtained from historical resources to supplement regulatory agency database records.
- Section 5, **History of the Project**, summarizes the history of the Project and adjoining properties. This Project history is based on various sources, which may include a review of historical aerial photographs, Sanborn Fire Insurance Maps, city or suburban directories, historical topographic maps, building department records, and results of previous site assessments (if any and reasonably ascertainable).

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- Section 6, **Visual Survey**, describes Kleinfelder's site observations during the site reconnaissance and observations of adjacent parcels.
- Section 7, **Evaluation**, is a presentation of our findings and opinions regarding the information in Sections 3 through 7 and presents our conclusions regarding the potential for hazardous waste involvement in the proposed Project.
- Section 8, **References**, is a summary of the resources used to compile this ISA report.

Pertinent documentation regarding the Project is included in the Appendices of this report. Appendix A contains the Caltrans' *Initial Site Assessment (ISA) Checklist*. The Environmental Data Resources, Inc. (EDR) Radius Map™ Report with GeoCheck® is provided in Appendix B. Agency documentation is provided in Appendix C. Historical information and documentation is presented in Appendix D.

2.3 SIGNIFICANT ASSUMPTIONS

Kleinfelder does not guarantee the accuracy of the information supplied by its sources, but reserves the right to rely on this information in formulating a professional opinion on the potential for contamination at the Project. Kleinfelder also assumes the Client provided all applicable and available environmental records and specialized knowledge regarding the Project. The Project conditions discussed herein are limited to readily apparent environmental conditions observed at the Project. Kleinfelder has not made other significant assumptions during the performance of this ISA.

2.4 LIMITATIONS AND EXCEPTIONS

Environmental assessments are non-comprehensive by nature and are unlikely to identify all environmental problems or eliminate all risk. The attached report is a qualitative assessment. Kleinfelder offers a range of investigative and engineering services to suit the needs of our clients, including more quantitative investigations. Although risk can never be eliminated, more detailed and extensive investigations yield more information, which may help you understand and better manage your risks. Since such detailed services involve greater expense, we ask our clients to participate in identifying the level of service, which will provide them with an acceptable level of risk. Please contact the signatories of this report if you would like to discuss this issue of risk further.

No warranty, either express or implied is made. Environmental issues not specifically addressed in the report were beyond the scope of our work and not included in our evaluation.

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Land use, Project conditions (both on-site and off-site) and other factors will change over time (e.g., EDR Lightbox [EDR], *The EDR Radius Map™ Report with GeoCheck®*). Since site activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings and opinions can be considered valid only as of the date of *The EDR Radius Map™ Report with GeoCheck®* (September 23, 2024). Additionally, Project conditions observed were limited to readily apparent environmental conditions observed from the Project.

This report may be used only by the Client and the registered design professional in responsible charge, only for the purposes stated within a reasonable time from its issuance, but in no event later than 1 year from the date of *The EDR Radius Map™ Report with GeoCheck®* (expires September 23, 2025). Land or facility use, on and off-site conditions, regulations, or other factors may change over time, and additional work may be required with the passage of time. Any party other than the Client who wishes to use this report shall notify Kleinfelder of such intended use. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the Client or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify, and hold harmless Kleinfelder from any claim or liability associated with such unauthorized use or non-compliance.

During the course of the performance of Kleinfelder's services, hazardous materials may have been discovered. Kleinfelder assumes no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury that results from pre-existing hazardous materials being encountered or present on the Project, or from the discovery of such hazardous materials. Nothing contained in this report should be construed or interpreted as requiring Kleinfelder to assume the status of an owner, operator, or generator, or person who arranges for disposal, transport, storage or treatment of hazardous materials within the meaning of any governmental statute, regulation or order. Client is solely responsible for directing notification of all governmental agencies, and the public at large, of the existence, release, treatment or disposal of any hazardous materials observed at the Site, either before or during performance of Kleinfelder's services. Client is responsible for directing all arrangements to lawfully store, treat, recycle, dispose, or otherwise handle hazardous materials, including cuttings and samples resulting from Kleinfelder's services.

2.5 SPECIAL TERMS AND CONDITIONS

No special terms and conditions were agreed to by the City and Kleinfelder.

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3 PROJECT DESCRIPTION

The Project description is presented in this section and describes the condition of the Project at the time of the ISA. The Project location is shown on Figures 1 and 2. Tables 3-1 through 3-3 summarize the physical characteristics of the Project and adjoining properties.

3.1 LOCATION AND LEGAL DESCRIPTION

The information presented in Table 3-1 includes the physical location and legal description of the Project. This information was obtained from review of various maps (such as topographic maps and tax assessor maps), aerial photographs, public records at City and/or County offices, interviews, and/or information provided by the Client.

Table 3-1
Project Setting

PARAMETER	INFORMATION/COMMENTS
LOCATION	The Project is located to the north and south of the Brandt Road and Bowles Road intersection in the City of Calipatria, Imperial County, California (see Figure 1, Project Location Map).
ASSESSOR'S PARCEL NUMBER (APN)	The Project is located within the road right-of-way (ROW) and is not assigned an APN.
ADDRESS(ES)	The Project is located within the ROW and is not assigned a street address. The closest street address to the Project is a residential property located adjacent to the east at 6430 Brandt Road.
SECTION, TOWNSHIP, AND RANGE	The northern portion of the Project (north of Brandt Road bridge) is located in Township 12 South, Range 13 East, Section 13, and the southern portion of the Project (south of Brandt Road bridge) is located in the Township 12 South, Range 13 East, Section 24, San Bernardino Baseline and Meridian.
ZONING	Information from the Imperial County Planning and Development Services website (https://icpds.maps.arcgis.com/apps/webappviewer/), indicates the Project is zoned "A-2-G" representing agricultural use.

3.2 CURRENT / PROPOSED USE OF THE PROJECT

At the time of Kleinfelder's assessment, land use in the immediate Project vicinity appeared to be used for agricultural and residential. Current and proposed uses are described in Table 3-2.

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Table 3-2
Current / Proposed Uses

PARAMETER	GENERAL OBSERVATIONS
CURRENT USE	The Project is presently developed as a portion of Brandt Road including Brandt Road bridge.
PROPOSED USE	Kleinfelder understands the Project is being considered for replacement.

3.3 CURRENT USES OF ADJOINING PROPERTIES

Kleinfelder performed a brief drive-by and walking survey of the properties adjoining to the Project on September 24, 2024. Summary descriptions of the surrounding properties are presented in Table 3-3 and the area surrounding the Project is shown on Figure 2, Project Vicinity Map.

Table 3-3
Adjoining Properties

DIRECTION	LAND USE DESCRIPTION
NORTH	Brandt Road and agricultural land.
EAST	6430 Brandt Road and agricultural land.
SOUTH	Brandt Road and agricultural land.
WEST	Bowles Road and agricultural land.

Hazardous materials and petroleum products were not observed to be stored on the properties adjoining the Project at the time of the site reconnaissance and no other indications of obvious or suspect environmental concerns were apparent on the adjoining properties at the time of Kleinfelder's site reconnaissance.

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4 RECORDS REVIEW

4.1 STANDARD ENVIRONMENTAL RECORD SOURCES

The purpose of the records review was to obtain and review records that would help to evaluate environmental conditions in connection with the Project and bordering properties.

Federal, State and local regulatory agencies publish databases or "lists" of businesses and properties that handle hazardous materials or hazardous waste, or are the known location of a release of hazardous substances to soil and/or groundwater. These databases are available for review and/or purchase at the regulatory agencies, or the information may be obtained through a commercial database service. Kleinfelder contracted a commercial database service, EDR of Shelton, Connecticut to perform the government database search for listings within the appropriate ASTM International E1527-21 Standard (ASTM Standard) minimum search distance of the Project. Kleinfelder provided EDR with a Project map to incorporate the search distances from the Project boundary. Included in The EDR Radius Map™ Report with GeoCheck® is a listing of specific databases outlined by the ASTM Standard. A listing of the search distances, databases evaluated, dates the databases were last updated, and types of information contained in each database are included in the regulatory database search provided as Appendix B to this report.

EDR utilizes a geographical information system to plot the locations of reported spills, leaks, incidents, etc. Kleinfelder reviews this information to help establish if the Project, or nearby properties, have been included in the noted databases and lists. Each of the listings was reviewed to assess whether the corresponding property details included in the EDR report revealed a potential environmental impact to the Project. A number of listings in the EDR database report were found not to have the potential to impact the Project based on the following, or a combination thereof:

- The listed property was located at a distance where the facility would be unlikely to impact the Project based on Kleinfelder's evaluation of the relevant data in the EDR report and knowledge of the Project vicinity.
- The listed property was located in a down-gradient or cross-gradient direction from the Project, based on the anticipated direction of groundwater flow at the property being evaluated, and is located at a distance that would be unlikely to impact the Project. Note that groundwater flow direction may be variable in the vicinity of the Project and determinations as to down- or cross-gradient direction were made only when groundwater flow direction was available for a specific property.

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- The listed property was identified in the Underground Storage Tank (UST) or Small Quantity Generator (SQG) databases and was not on or immediately adjoining the Project. The property was not listed in other databases that reported a release of a hazardous substance or petroleum product and/or was not listed as having environmental violations. The listing of a facility on these databases alone is not indicative of an unauthorized release.
- The listing for the facility suggested a short-term release had occurred (i.e., from incidental traffic accidents, or chemicals from illegal drug labs found at residences) with associated response actions completed.
- The quantity of the hazardous substances or petroleum product released from an off-site facility was not considered to have resulted in contamination above the most stringent criteria that would require regulatory action. Therefore, no impact to the Project is anticipated.
- The listed property record indicates that the property was characterized, the reported release affected soil only, the listed property was not on or adjacent to the Project, and the release was not recognized as indicative of area-wide conditions or was characterized as a soil removal action only.
- The listed property record indicates that contamination on the property is limited to relatively non-mobile contaminants, including polynuclear aromatic hydrocarbons (PAHs) and metals, in soil only, on a non-adjacent property.
- The listed property record indicates that the case has been closed to the satisfaction of the designated lead regulatory agency and residual contamination, if present, is not considered likely to affect the Project based on one or more of the criteria mentioned in the bulleted items above.

Based on these criteria indicating no material threat of a release that affected the Project and/or no release that could require future regulatory agency oversight, these listings were not evaluated further and are not discussed in the following sections.

4.2 RESULTS OF DATABASE SEARCH

The remaining property listings were reviewed to assess whether these properties had environmental releases, which may have resulted in environmental concerns in relation to the Project. The listed properties for which a reported release may have resulted in a recognized environmental condition (REC) or an environmental concern were further assessed by performing a review of agency files available through the SWRCB's GeoTracker™ website (https://geotracker.waterboards.ca.gov/) and other relevant regulatory agency websites and offices, to evaluate whether the listed release represents a potential impact to the Project.

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4.2.1 Project Listings

The Project was not listed in databases searched by EDR.

4.2.2 Off-site Listings

Off-site facilities of concern were not identified relative to the Project location.

4.2.3 Orphan List

Sites not plotted by EDR due to poor or inadequate address information are referred to as orphan sites. Eight unmapped sites are listed in the EDR report. The orphan summary/unmapped sites reports were reviewed to assess the potential for properties located outside the Project area that might pose a hazardous waste impact to the Project. The listed orphan sites fall under one, or more of the criteria listed in Section 4.1, and do not represent a hazardous waste impact to the Project.

4.3 OTHER RECORDS REVIEWED / AGENCIES CONTACTED

Local regulatory agencies were contacted for reasonably ascertainable and practically reviewable documentation regarding environmental conditions present at the Project and adjoining facilities. The following agencies (if marked with an "X") were contacted for documentation:

- ☒ State of California, Geologic Energy Management Division (CalGEM)
- ☐ Imperial County Air Pollution Control District (APCD)
- ☒ City of Calipatria Public Works Department
- ☒ City of Calipatria Fire Department
- ☒ Imperial County Public Works Department
- ☒ Imperial County Planning and Development Services
- ☒ Imperial County Environmental Health Department (EHD)
- ☒ State Water Resources Control Board (SWRCB), GeoTracker™
- ☒ State Department of Toxic Substances Control (DTSC)
- ☒ United States Environmental Protection Agency (USEPA)
- ☒ Pipeline and Hazardous Materials Safety Administration (PHMSA), National Pipeline Mapping System (NPMS)

Information from these agencies is presented below.

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4.3.1 State of California, Geologic Energy Management Division (CalGEM)

Information concerning oil and gas fields was obtained by Kleinfelder from CalGEM's Well Finder database (https://www.conservation.ca.gov/calgem/Pages/Wellfinder.aspx). Findings from the map review are discussed in Table 3-2, and a copy of the search results is provided in Appendix C.

4.3.2 Imperial County Air Pollution Control District (APCD)

Properties and facilities within, or adjoining to the Project limits, which may emit hazardous pollutants that could affect the Project were not noted. Therefore, a written request for information was not submitted to the APCD. Information pertaining to hazardous air pollutants would likely be included in the EDR database report. No significant air pollution issues were identified.

4.3.3 City of Calipatria Public Works Department

Kleinfelder submitted a written request for information related to Brandt Road bridge. As of the date of this report, a response has not been received.

4.3.4 Calipatria Fire Department

On October 16, 2024, Kleinfelder received an email from Chief Jesse Llanas of the Calipatria Fire Department. Chief Llanas indicated the only information he was aware of were numerous brush fires east and west of the Project. Chief Llanas was not aware of any vehicle accidents or any type of hazardous materials incidents in the Project area.

4.3.5 Imperial County Public Works Department

Kleinfelder accessed the Imperial County Public Works Department website (https://publicworks.imperialcounty.org/) for information related to the Project; however, information on the Project was not available. Kleinfelder submitted a written request for information via email requesting inspection and maintenance files. Mr. Robert Ureña III responded October 28, 2024 with a Caltrans Inspection Report dated December 12, 2023. The Caltrans Inspection Report is discussed in Section 4.5.2.

4.3.6 Imperial County Planning and Development Services

Kleinfelder searched the Imperial County Planning and Development Services website (https://www.scplanning.org/CitizenAccess/) for planning and development records including building information, inspection files, and permits related to the Project. No records were available. Because no

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buildings are located within the existing Project right-of-way, a request for information was not submitted to the Imperial County Planning and Development Services.

4.3.7 Imperial County Environmental Health Department

Kleinfelder accessed the Imperial County Environmental Health Department's website (https://www.icphd.org/environmental-health) for information related to the Project; however, without an associated street address or APN, records could not be researched.

4.3.8 State Water Resources Control Board (SWRCB), GeoTracker™

Kleinfelder reviewed the SWRCB GeoTracker™ website (https://geotracker.waterboards.ca.gov/) for information pertaining to the Project and adjoining properties of concern. Records were not available for the Project or nearby properties. A summary of pertinent information pertaining to off-site properties of concern are provided in Appendix C.

4.3.9 State Department of Toxic Substances Control (DTSC)

Kleinfelder reviewed the DTSC EnviroStor online database (https://www.envirostor.dtsc.ca.gov/public/) on October 9, 2024 for information pertaining to the Project and adjoining properties. Records were not available for the Project or adjoining parcels. A copy of the DTSC EnviroStor search results is presented in Appendix C.

4.3.10 United States Environmental Protection Agency

Kleinfelder reviewed the USEPA Superfund Site website for information regarding current and historical site activity locations and groundwater contamination plume boundaries associated with Brownfields properties, Resource Conservation Recovery Act (RCRA) Corrective Action facilities, and Superfund Non-National Priorities List (Non-NPL) sites. No Brownfields properties, RCRA facilities, or Superfund Non-NPL sites were mapped on or adjacent to the Project. Copies of the maps reviewed are provided in Appendix C.

4.3.11 Pipeline and Hazardous Materials Safety Administration, National Pipeline Mapping System

According to the California State Fire Marshal, pipeline information is available at the PHMSA's online NPMS (https://pvnpms.phmsa.dot.gov/PublicViewer/). Kleinfelder researched pipeline information on the NPMS for the Project and vicinity on October 9, 2024. Based on Kleinfelder's review of the NPMS website, no mapped natural gas transmission pipelines or hazardous liquid pipelines are located on Project, or on properties that adjoin the Project. A copy of the NPMS map is included in Appendix C.

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4.4 PHYSICAL SETTING SOURCE(S)

At the time of Kleinfelder's assessment, land use in the immediate Project vicinity appeared to be used for residential, commercial, and transportation purposes. Table 4-1 presents information about the physical setting and regional geology of the Project. This information was obtained from published maps.

Table 4-1
Physical Setting

DATA	GENERAL INFORMATION
USGS TOPOGRAPHIC QUADRANGLE	Based on a review of the United States Geological Survey (USGS) Westmorland East, California 7.5-Minute Series (Topographic) Quadrangle Maps dated 2021, the Project is located at an approximate elevation of 212 feet below mean sea level. The topographic relief is generally flat although slopes gently to west.
SOIL TYPE	The dominant soil composition in the vicinity of the Project is classified as Vint, consisting of Class B – moderately well-drained very fine sandy loam with moderate infiltration rates (EDR, 2024a). It should be noted the Alamo River flows beneath the Project.
OIL AND GAS WELLS	Kleinfelder searched the State of California, Geologic Energy Management Division (CalGEM) online Well Finder Database (https://www.conservation.ca.gov/calgem/Pages/WellFinder.aspx) for oil and gas wells located on the Project and in the Project vicinity. The Project is not depicted within a known oil or gas field, and no oil or gas wells are depicted on the Project or in the vicinity of the Project. The nearest well is approximately 0.66-mile southwest of the Project and is a plugged dry hole, American Petroleum Institute (API) 0402500004, operated by Sardi Oil Co. A copy of the Well Finder search results is provided in Appendix D.

Information about the regional geology is presented in Table 4-2. This information was obtained by Kleinfelder from published data and maps, interviews with public agencies, and/or previous investigations performed by Kleinfelder in the Project vicinity.

Table 4-2
Regional Geology and Hydrogeology

PHYSICAL PARAMETER	INFORMATION/COMMENTS
REGIONAL PHYSIOGRAPHY AND GEOLOGY	The Project is located in the southern portion of the Colorado Desert Geomorphic Province, A low-lying barren desert basin, about 245 feet below sea level. The Colorado Desert Geomorphic Province is a depressed block between active branches of alluvium-covered San Andreas Fault with the southern extension of the Mojave Desert on the east. It is characterized by the ancient beach lines and silt deposits of extinct Lake Cahuilla (California Geological Survey [CGS], 2002).
REGIONAL HYDROGEOLOGY	The Imperial Valley Groundwater Basin is located in the southeastern part of California at the international border with Mexico. The Imperial Valley Groundwater Basin lies within the southern part of the Colorado Desert Hydrologic Region, south of the Salton Sea. The basin is bounded on the east by

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	the Sand Hills and on the west by the impermeable rocks of the Fish Creek and Coyote Mountains. To the north the basin is bounded by the Salton Sea, which is the discharge point for groundwater in the basin (California Department of Water Resources [CDWR], 2003]).
DEPTH TO GROUNDWATER AND DIRECTION OF ANTICIPATED FLOW [1]	Based on review of available groundwater information on the State Water Resources Control Board (SWRCB) GeoTracker™ website (http://geotracker.waterboards.ca.gov/) for facilities located in the Project vicinity, depth to groundwater at the Calipatria Queen Market facility, located at 101 East Main Street approximately 3.3-miles east has ranged between 9.17 to 11.36 feet below ground surface (bgs). Groundwater at the facility has historically been reported to flow predominantly northwest (EnviroApplications, Inc., 2023). Groundwater flow direction at the Project is unknown.
REGIONAL GROUNDWATER QUALITY PROBLEMS	Regional groundwater impacts in the Project vicinity were not found during the research of this ISA.
WATER SUPPLY	The Project is not developed with structures; therefore, water is not supplied.
FLOOD ZONE DESIGNATION	According to the Federal Emergency Management Agency (FEMA) website (https://www.fema.gov/flood-maps) and Flood Insurance Rate Map (FIRM) Panel 06025C1025C, effective September 26, 2008, the Project is located in Zone A, which is defined as those areas located within a special flood hazard without a base flood elevation.
[1] Groundwater flow direction is based on regional information sources. Project-specific conditions may vary due to a variety of factors including geologic anomalies, utilities, nearby pumping wells (if present), and other factors.	

4.5 USER PROVIDED INFORMATION

4.5.1 Environmental Liens and Usage Limitations

Based on the EDR database search, no liens pertaining to the Project are listed in the Federal Superfund Liens List maintained by USEPA, and no known recorded land-use environmental deed restrictions pertaining to the Project listed in the State Liens Database.

4.5.2 Other Information/Documents Provided

Caltrans performed a routine inspection for the Project on December 12, 2023. The inspection document revealed Brandt Road bridge was constructed in 1950, and spans approximately 150-feet long and 24-feet wide, and was constructed of timber. An underwater inspection was conducted on December 8, 2020, although the inspection details were not provided in the Caltrans Inspection Report. The Alamo River flows beneath the Project. The Imperial County Health Department stated the Alamo River is polluted with both biological and chemical wastes. Caltrans has also designated the river as a Class 4 waterway. A Class 4 waterway is defined as "water that is known to be grossly contaminated by biological or chemical contaminants, or any level of radiological contaminates." Workers coming in contact with water must be immunized for hepatitis A virus, hepatitis B virus and tetanus.

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5 HISTORY OF THE PROJECT

The history of the Project was researched to identify obvious uses. Historical land use was researched to the first developed use, or back to 1940, whichever was earlier or readily available. Table 5-1 summarizes the availability of information reviewed during this assessment.

Table 5-1
Historical Information Sources

SOURCE	YEARS REVIEWED	SOURCE / AVAILABILITY
SANBORN FIRE INSURANCE MAPS	Not available	EDR, 2024c
AERIAL PHOTOGRAPHS	1937, 1949, 1953, 1976, 1984, 1992, 1996, 2002, 2009, 2012, 2016, 2020	EDR, 2024d
CITY DIRECTORIES	1968 to 2020 (select years)	EDR, 2024e
HISTORICAL TOPOGRAPHIC MAP REPORT	1943, 1945, 1947, 1956, 1976, 1995, 2012, 2015, 2018	EDR, 2024f
BUILDING DEPARTMENT	Not available	Not available, EDR, 2024g
PREVIOUS ASSESSMENT(S)	Not available	Not available

5.1 SANBORN FIRE INSURANCE MAPS

Sanborn Fire Insurance Maps provide historical land use information for some metropolitan areas and small, established towns. Kleinfelder requested EDR to search its library of Sanborn Fire Insurance Maps for maps of the Project. EDR responded that Sanborn Fire Insurance Maps were not available for the Project (EDR, 2024c). A copy of the Certified Sanborn® Map Report provided by EDR is included in Appendix D.

5.2 AERIAL PHOTOGRAPHS

A review of historical aerial photography may indicate past activities at a property that may not be documented by other means or observed during a reconnaissance visit. The effectiveness of this technique depends on the scale and quality of the photographs and the available coverage. Aerial photographs were obtained from several historical photograph collections through EDR (2024d) and span a period of 83 years. A tabulation of the aerial photographs reviewed by Kleinfelder is presented in Table 5-2. Copies of the aerial photographs provided by EDR are included in Appendix D.

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Table 5-2

Historical Aerial Photographs Reviewed

YEAR	SCALE	SUMMARY
1937	1" = 500'	**Project:** The Project appears developed with Brandt Road and a narrow bridge over the Alamo River in a north to south configuration. The Alamo River is observed flowing below the Project in a general west-to-east direction. A roadway and railroad are apparent crossing the southern portion of the Project. **Surrounding Area:** Agricultural fields are apparent in the surrounding area to the northeast and southwest. Structures and features resembling a working farm are apparent to the southeast. A lateral drain is apparent adjacent to the west. Secondary roadways are noted in the Project vicinity.
1949 1953 1976	1" = 500' 1" = 500' 1" = 500'	**Project:** The Project area north and south of the Alamo River appears similar to the 1937 aerial photograph on the 1949 aerial photograph, although a bridge is not apparent. What appears to be the existing bridge and road alignment are visible by the 1953 photograph. **Surrounding Area:** The surrounding area appears similar to the 1937 aerial photograph except the structures and features to the southeast are no longer present. By 1976, agricultural fields are apparent to the northeast, southeast, and southwest. The property to the west of the northern portion of the Project appears partially flooded.
1984 1992 1996 2002 2006 2012	1" = 500' 1" = 500' 1" = 500'	**Project:** The Project appears similar to the 1976 aerial photograph. The railroad tracks running through the southern portion of the Project are no longer are apparent, and details are difficult to discern. **Surrounding Area:** A residential property is apparent adjacent to the east of the northern portion of the Project. The surrounding properties appear similar to previous aerial photographs.
2016 2020	1" = 500' 1" = 500'	**Project:** The Project appears similar to the 2012 aerial photograph. **Surrounding Area:** The surrounding area appears similar to the 2012 aerial photograph, except the three structures and ground disturbance activities are apparent on the property to the northwest. By 2020, the three structures are no longer present.

Note: Aerial photographs only provide information concerning indications of land use, and no conclusions regarding the release of hazardous substances or petroleum products can be drawn from the review of photographs alone.

5.3 CITY DIRECTORIES

City directories provide information regarding property occupants by address. EDR provided a city directory image report, included in Appendix D, for the period between 1968 and 2020 (EDR, 2024e). The Project is not associated with a street address; therefore, city directory information was not available.

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The adjoining listings were reviewed to assess the potential for types of facilities that represent a potential environmental concern to the Project. Adjacent agricultural related properties were noted to the northwest, southwest, and southeast of the Project and a residential property to the east of the Project.

Listings for properties that adjoin the Project or are located nearby is provided below.

East:

6430 Brandt Road (adjacent)

- 1988 – J A Richards, Mildred Richards
- 1992, 1995, 2000 – James A. Richards
- 2010, 2014 – Fernando H Regalado
- 2020 – Fernando Regalado, Helen Fifield

5.4 HISTORICAL TOPOGRAPHIC MAP REVIEW

Kleinfelder obtained and reviewed historical topographic maps of the Project vicinity from EDR (2024f). The topographic maps reviewed for this assessment are listed in Table 5-3 and copies of the maps are included in Appendix D.

Table 5-3
Historical Topographic Maps Reviewed

YEAR	SCALE	SUMMARY
1943 1945 1947	1:62,500 1:62,500 1:50,000	**Project:** Brandt Road appears developed as a secondary highway in a north to south configuration. Brandt Road bridge, although not labeled, is present extending over the Alamo River. An unlabeled road and a single-track railroad are present in an east-to-west configuration crossing the southern portion of the Project. **Surrounding Area:** The adjacent properties appear generally undeveloped although paved and dirt roads and sparsely scattered small structures are present in the surrounding area. Water canals are depicted to the north and west of the Project.
1956 1976	1:24,000 1:24,000	**Project:** The Project area appears unchanged from the 1947 topographic map. **Surrounding Area:** The surrounding area appears generally unchanged from the 1947 topographic map except multiple lateral drains are labeled to the north and west. The sparsely scattered small structures are no longer depicted in the surrounding area.

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1995	1:24,000	**Project:** The Project appears generally unchanged from the 1976 topographic map, except the single-track railroad is no longer shown crossing the southern portion of the Project. **Surrounding Area:** A small structure is depicted adjacent to the east of the northern portion of the Project and a lateral drain is adjacent to the west. The unlabeled road to the west-southwest has been improved to a paved road.
2012 2015 2018 2021	1:24,000 1:24,000 1:24,000 1:24,000	**Project:** The 2012, 2015, 2018, and 2021 topographic maps depict physical features (e.g., roads and surface water), but does not depict structures. Brandt Road and West Bowles Road are shown, and the Alamo River flows beneath the Project. **Surrounding Area:** No structures are shown in the surrounding area, although the eastern adjacent property is developed. Vail Lateral, Vail One Drain, and Lateral One are shown to the west and north.

5.5 BUILDING DEPARTMENT

The Project is not developed with structures. Therefore, a search of building permit records was not performed.

5.6 PREVIOUS ASSESSMENTS

Previous assessments were not provided for Kleinfelder's review.

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6 VISUAL SURVEY

6.1 METHODOLOGY AND LIMITING CONDITIONS

Mr. Christopher Noland of Kleinfelder performed a site reconnaissance on September 24, 2024, to assess and photograph present Project conditions. The Project location and Project vicinity are shown on Figure 1 and Figure 2, respectively. Color photographs of the Project are presented as Figures 3 through 10. A summary of Project conditions observed from the roadway is provided below.

6.2 RESULTS OF SITE RECONNAISSANCE

The Project consists of the Brandt Road bridge, portions of Brandt Road to the north and south of the bridge, unpaved shoulders, and sparsely vegetated land within the existing ROW. The Brandt Road bridge is currently a two-lane bridge on Brandt Road, passing over the Alamo River. The bridge surface consists of weathered asphalt concrete and pressure-treated wooden railings that are located along the east and west sides of the bridge. Utilities were not observed in the Project vicinity except for electrical power poles that run parallel along the western side of Brandt Road. Automobile tires, wood debris and miscellaneous debris were observed in a depressed area east of the northern portion of the Project.

The Project vicinity is comprised of agricultural land with a single-family residential property to the east of the northern portion of the Project. The Alamo River is located within the Project area and traverses beneath the Brandt Road bridge, in a general east-to-west direction.

Evidence of discolored water, stressed vegetation, USTs, pits, ponds, or lagoons was not observed on the Project during the reconnaissance.

6.3 INTERVIEWS

On August 20, 2024, during the Project kickoff meeting, Mr. Robert Ureña of ICDPW indicated that the Project involved the rural connector route of Brandt Road over the Alamo River. He indicated that it is an existing timber superstructure with 10 spans, about 150-feet long, and was constructed in 1950s. Mr. Ureña also indicated that this area contains polluted waters which are unsafe.

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7 EVALUATION

The following section describes Kleinfelder's findings and presents our recommendations regarding potential hazardous materials or hazardous waste involvement in the proposed Project:

7.1 FINDINGS

Based on the results of the ISA, the following findings are presented:

Federal, State, and local regulatory agencies publish databases, which were reviewed to identify businesses, and properties that handle hazardous materials or hazardous waste, or are the known location of a release of hazardous substances to soil and/or groundwater. In addition, local regulatory agencies were contacted for reasonably ascertainable and practically reviewable information regarding environmental conditions present at facilities in the Project vicinity. Based on our review of these sources, no properties were identified as contributing to potential hazardous waste impacts to the Project.

On September 24, 2024, Kleinfelder performed a reconnaissance of the Project area and vicinity to assess and photograph present Project conditions. A summary of the site reconnaissance findings is presented as follows:

- The Project consists of the Brandt Road bridge, portions of Brandt Road to the north and south of the bridge, unpaved shoulders, and sparsely vegetated land within the existing right-of-way.
- Brandt Road bridge is currently a two-lane bridge on Brandt Road passing over the Alamo River. The bridge surface consists of weathered asphalt concrete and pressure treated wooden railings are located along the east and west sides of the bridge. The potential exists for ACMs and LCP to be present in bridge structures.
- Historical information reviewed for this ISA indicates a railroad track crossed the southern portion of the Project between 1937 and 1995. The surrounding area consisted of agricultural land from at least 1937 to the present-day. The Project vicinity is comprised of agricultural land with a single-family residential property to the east of the northern portion of the Project.
- Utilities were not observed in the Project vicinity except for electrical power poles that run parallel along the western side of Brandt Road. Automobile tires, wood debris and miscellaneous debris were observed in a depressed area east of the northern portion of the Project.

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- The Alamo River is located within the Project area and traverses beneath Brandt Road bridge, in a general east-to-west direction. Caltrans designated the river as a Class 4 waterway, which is defined as "water that is known to be grossly contaminated by biological or chemical contaminants, or any level of radiological contaminates."

7.2 RECOMMENDATIONS

During the preparation of the ISA, the following information that could potentially affect environmental conditions was revealed:

- Elevated concentrations of lead (from use of leaded gasoline) and other metals are sometimes associated with older roadways. Based on a review of historical documentation, Brandt Road has been present since at least 1937. The potential exists for ADL to be encountered during construction activities. Soil sampling for the presence of ADL should be performed in unpaved locations of the Project area prior to construction activities. Should lead be detected in the soil samples, a lead compliance plan should be prepared prior to the start of construction activities.
- Chemicals associated with railroad usage include petroleum products, metals, pesticides, and herbicides. A railroad track was present crossing the southern portion of the Project from 1937 and 1995. The potential exists for chemicals associated with railroads to be present in soils surrounding the Project.
- The Project proposes to replace the Brandt Road Bridge structure (Bridge No. 58C-0165). The potential exists for ACMs and LCP to be present. The ACM survey should be performed in conformance with the USEPA NESHAP 40 CFR Part 61, Subpart M Section 61.145. The LCP survey should be performed in accordance with CDPH guidelines.
- Although not anticipated in other areas of the Project, should impacted soil (as evidenced by staining and/or odors) be encountered during construction activities, the Person in Charge overseeing construction should stop work until a hazardous waste specialist is able to assess the soil for proper handling.
- Since the Alamo River is designated as a Class 4 waterway, contact with water should be avoided if possible. However, should contact with water be required, appropriate personal protective equipment should be used. and workers coming in contact with water must be immunized for hepatitis A virus, hepatitis B virus and tetanus. If dewatering is required, purged water should be contained, sampled, and disposed according to state and federal regulations.

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8 REFERENCES

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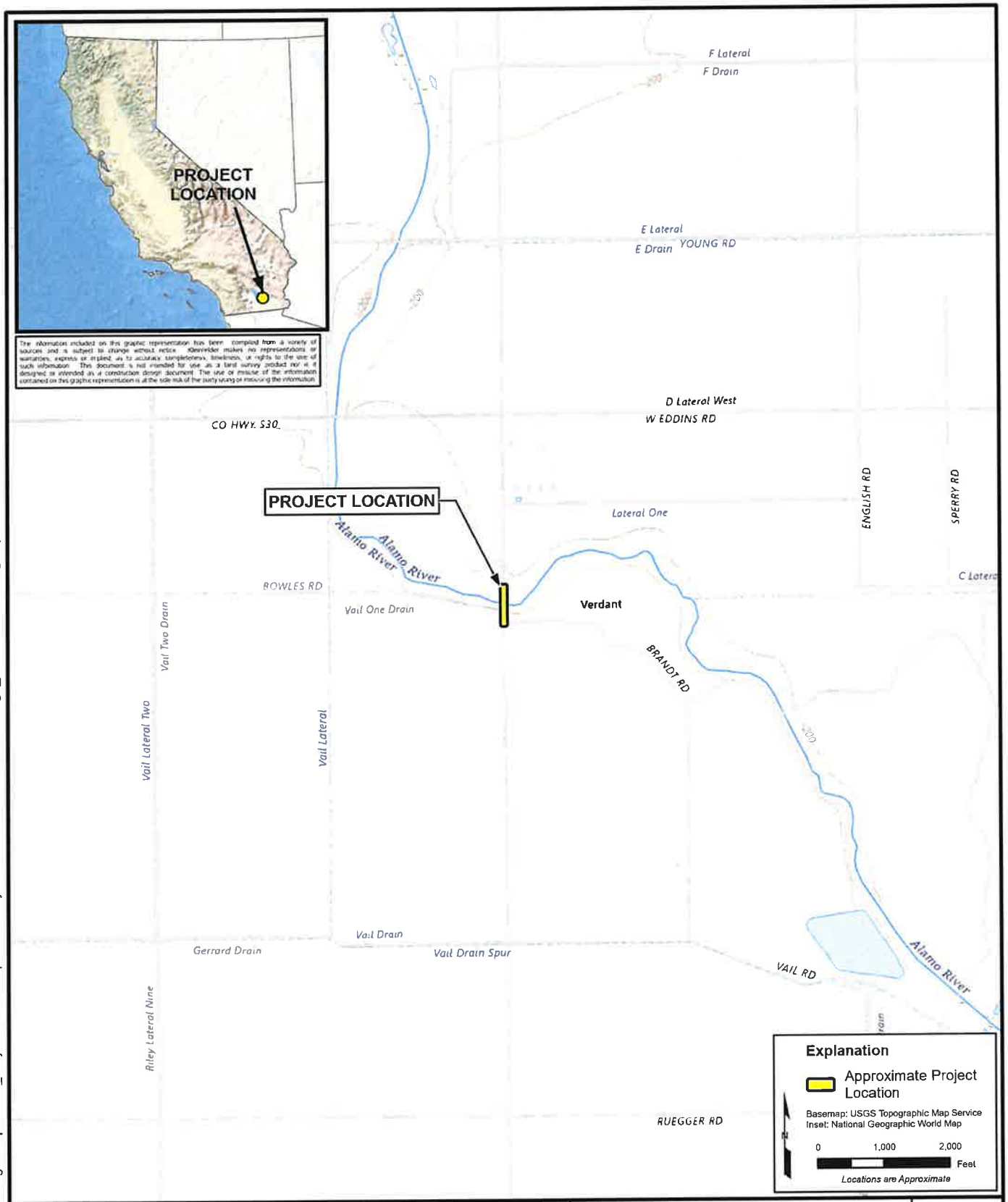
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Additional sources may be referenced separately in the report text.

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FIGURES

PLOTTED: 10/25/2024, KHagan



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PROJECT:	25001840.001A
DRAWN:	OCT 2024
DRAWN BY:	K. HAGAN
CHECKED BY:	S. BIRARDI
FILE NAME:	BrandtRd_F1.pagx

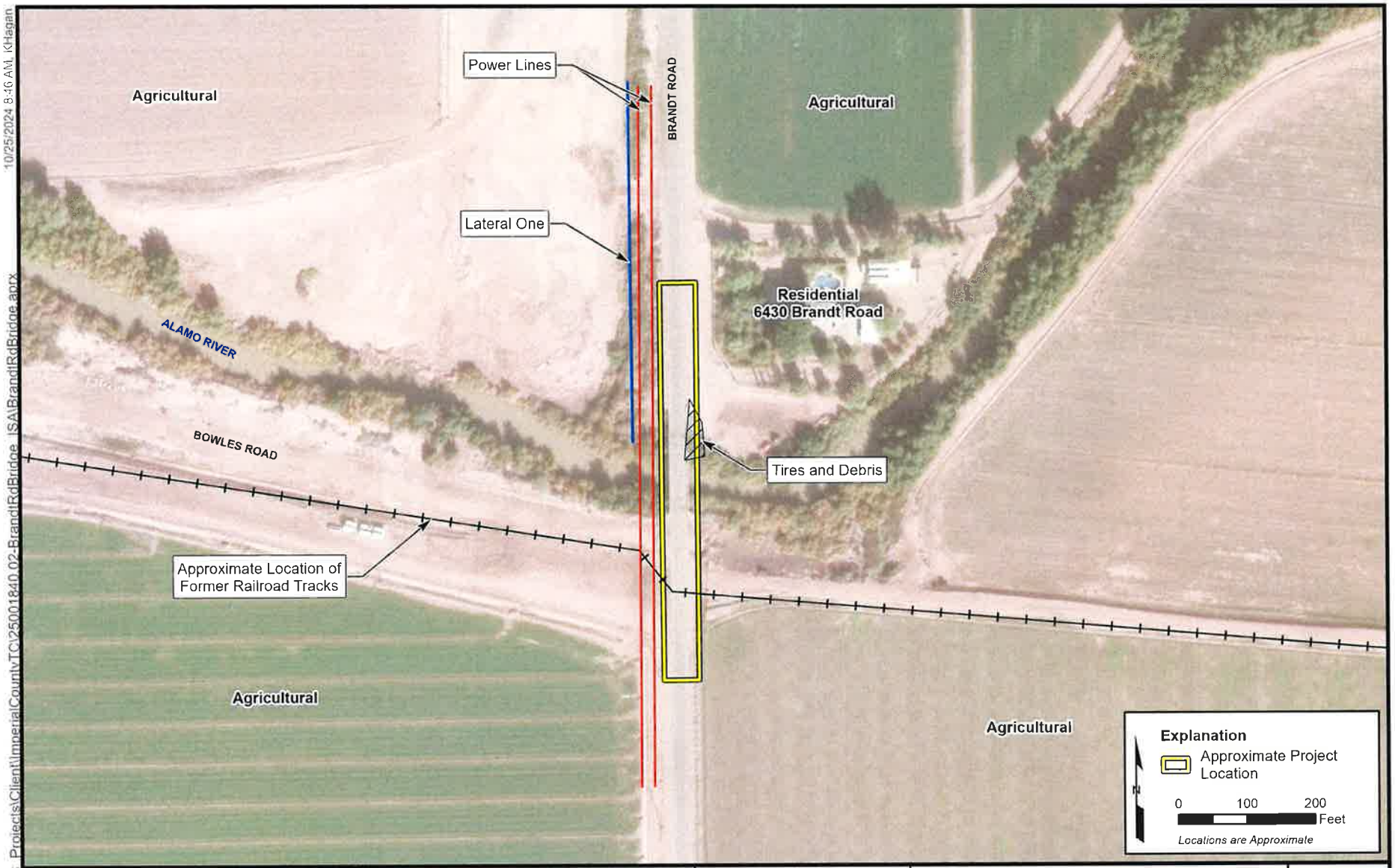
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PROJECT LOCATION MAP

INITIAL SITE ASSESSMENT
BRANDT ROAD BRIDGE
CITY AOF CALIPATRIA
IMPERIAL COUNTY, CALIFORNIA

FIGURE
1

LOS ANGELES, CA \\azrgisstorp03\GIS_Projects\Client\ImperialCountyTC\25001840.02-BrandtRdBridge_ISA\BrandtRdBridge.aprx



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PROJECT:	25001840.001A
DRAWN:	OCT 2024
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FILE NAME:	BrandtRd_F2.pagx

PROJECT VICINITY MAP

INITIAL SITE ASSESSMENT
BRANDT ROAD BRIDGE
CITY AOF CALIPATRIA
IMPERIAL COUNTY, CALIFORNIA

FIGURE
2

10/25/2024 8:46 AM, KHagan
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APPENDIX A
Initial Site Assessment Checklist

Initial Site Assessment (ISA) Checklist

Project Information

District 11 County Imperial County

Route: Brandt Road bridge, portions of Brandt Road to the north and south of the bridge, unpaved shoulders, and sparsely vegetated land within the existing right-of-way (Project).

Description

The Imperial County Public Works Department is proposing to replace the existing Brandt Road bridge with a new bridge structure that meets current design standards. The Project area is shown on Figure 1 and Figure 2 of the ISA report. A Project Description is included in Section 3.1 of the ISA report.

Is the project on the HW Study Minimal-Risk Projects List? Unknown

Project Manager Unknown phone # N/A

Project Engineer Unknown phone # N/A

Project Screening

Attach the Project location map to this checklist to show location of all known and/or potential HW sites identified.

1. Project Features: New R/W? No Excavation? No Railroad Involvement? No
   Structure demolition/modification? Yes
   Subsurface utility relocation? No

2. Project Setting: Brandt Road bridge which crosses over the Alamo River, and portions of Brandt Road to the north and south of the bridge in the City of Calipatria, Imperial County, CA.
   Rural or Urban Rural.
   Current land uses: Existing Brandt Road bridge over Alamo River and associated right-of-way.
   Adjacent land uses: Agricultural and residential properties. (industrial, light industry, commercial, agricultural, residential, etc.)

3. Check federal, State, and local environmental and health regulatory agency records as necessary, to see if any known hazardous waste site is in or near the Project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project. No hazardous waste sites identified.

Initial Site Assessment (ISA) Checklist
(continued)

4. Conduct Field Inspection. Date: September 24, 2023
Use the attached map to locate potential or known HW sites. No known or potential hazardous waste sites identified.

STORAGE STRUCTURES / PIPELINES:

Underground tanks: Not identified
Surface tanks: Not observed
Sumps: Not observed
Ponds: Not identified
Drums: Not observed
Basins: Not observed
Transformers: Not observed
Landfill: Not observed.
Other:

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining: Not observed
Oil sheen: Not observed
Odors: No odors noted
Vegetation damage: Not observed

Other: N/A

HAZARDOUS MATERIALS: (asbestos, lead, etc.)

Buildings No
Spray-on fireproofing N/A
Pipe wrap Unknown
Friable tile N/A
Acoustical plaster Unknown
Serpentine Unknown
Paint White paint on bridge rails
Other Caltrans has designated Alamo River as a Class 4 waterway, defined as "water that is known to be grossly contaminated by biological or chemical contaminants, or any level of radiological contaminates."

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potentially hazardous waste sites. No hazardous waste sites identified.

6. Other comments and/or observations:

- Elevated concentrations of lead (from use of leaded gasoline) and other metals are sometimes associated with older roadways. Based on a review of historical documents for the Site and surrounding area, aerially deposited lead (ADL) has the potential to be encountered during construction activities.

Initial Site Assessment (ISA) Checklist
(continued)

- Soil sampling for the presence of ADL should be performed in unpaved locations of the Project area. Should lead be detected in the soil samples, a lead compliance plan should be prepared prior to the start of construction activities.

- Chemicals associated with railroad usage include petroleum products, metals, pesticides, and herbicides. A railroad track was present crossing the southern portion of the Project from 1937 and 1995. The potential exists for chemicals associated with railroads to be present in soils surrounding the Project.

- Although not anticipated in other areas of the Project, should impacted soil (as evidenced by staining and/or odors) be encountered during construction activities, the Person in Charge overseeing construction should stop work until a hazardous waste specialist is able to assess the soil for proper handling.

- The Alamo River flows beneath the Project. The Imperial County Health Department stated the Alamo River is polluted with both biological and chemical wastes. Caltrans has also designated the river as a Class 4 waterway. A Class 4 waterway is defined as "water that is known to be grossly contaminated by biological or chemical contaminants, or any level of radiological contaminates." Contact with water should be avoided; however, should contact with water be required, appropriate personal protective equipment should be used, and workers coming in contact with water must be immunized for hepatitis A virus, hepatitis B virus and tetanus. If dewatering is required, purged water should be contained, sampled, and disposed according to state and federal regulations.

ISA Conducted by:

Date: June 6, 2025

Stefan Birardi
Project Professional

Reviewed by:

Date: June 6, 2025

Lizanne Simmons
California Professional Geologist No. 7431

Professional Geologist No. 7431

APPENDIX B
Regulatory Agency Database Report

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Brandt Road Bridge
Brandt Road Bridge
Calipatria, CA 92233

Inquiry Number: 7771229.2s
September 23, 2024

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

BRANDT ROAD BRIDGE
CALIPATRIA, CA 92233

COORDINATES

Latitude (North):	33.1180420 - 33° 7' 4.95"
Longitude (West):	115.5626080 - 115° 33' 45.38"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	634104.8
UTM Y (Meters):	3665100.8
Elevation:	212 ft. below sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	50004339 WESTMORLAND EAST, CA
Version Date:	2021
North Map:	50004262 NILAND, CA
Version Date:	2021

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20200524
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
BRANDT ROAD BRIDGE
CALIPATRIA, CA 92233

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	MAR VISTA FARMS, INC	502 W BOWLES RD	AST, CERS HAZ WASTE, CUPA Listings, CERS	Higher	96, 0.018, SW
A2	MAR VISTA FARMS INC	502 W BOWLES RD	HWTS	Higher	96, 0.018, SW
B3	AMC FARMS LLC	6358 BRANDT RD	RCRA NonGen / NLR	Higher	295, 0.056, South
B4	AMC FARMS LLC	6358 BRANDT RD	HWTS	Higher	295, 0.056, South
C5	TOP FLAVOR FARMS, IN	6328 BRANDT RD	CUPA Listings	Higher	664, 0.126, South
C6	FRESH FLAVOR FARMS L	6328 BRANDT RD	HWTS	Higher	664, 0.126, South

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ..... National Priority List
Proposed NPL ..... Proposed National Priority List Sites
NPL LIENS ..... Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ..... National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ..... Federal Facility Site Information listing
SEMS ..... Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ..... Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ..... Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ..... RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ..... RCRA - Large Quantity Generators
RCRA-SQG ..... RCRA - Small Quantity Generators
RCRA-VSQG ..... RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ..... Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE..... State Response Sites

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR..... EnviroStor Database

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF..... Solid Waste Information System

Lists of state and tribal leaking storage tanks

LUST..... Geotracker's Leaking Underground Fuel Tank Report
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
CPS-SLIC..... Statewide SLIC Cases

Lists of state and tribal registered storage tanks

FEMA UST..... Underground Storage Tank Listing
UST..... Active UST Facilities
INDIAN UST..... Underground Storage Tanks on Indian Land

Lists of state and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Cleanup Program Properties

Lists of state and tribal brownfield sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory
DEBRIS REGION 9..... Torres Martinez Reservation Illegal Dump Site Locations

IHS OPEN DUMPS---------- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL---------- Delisted National Clandestine Laboratory Register
HIST Cal-Sites---------- Historical Calsites Database
SCH---------- School Property Evaluation Program
CDL---------- Clandestine Drug Labs
Toxic Pits---------- Toxic Pits Cleanup Act Sites
US CDL---------- National Clandestine Laboratory Register

Local Lists of Registered Storage Tanks

SWEEPS UST---------- SWEEPS UST Listing
HIST UST---------- Hazardous Substance Storage Container Database
CA FID UST---------- Facility Inventory Database
CERS TANKS---------- California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS---------- Environmental Liens Listing
LIENS 2---------- CERCLA Lien Information
DEED---------- Deed Restriction Listing

Records of Emergency Release Reports

HMIRS---------- Hazardous Materials Information Reporting System
CHMIRS---------- California Hazardous Material Incident Report System
LDS---------- Land Disposal Sites Listing
MCS---------- Military Cleanup Sites Listing
SPILLS 90---------- SPILLS 90 data from FirstSearch

Other Ascertainable Records

FUDS---------- Formerly Used Defense Sites
DOD---------- Department of Defense Sites
SCRD DRYCLEANERS---------- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR---------- Financial Assurance Information
EPA WATCH LIST---------- EPA WATCH LIST
2020 COR ACTION---------- 2020 Corrective Action Program List
TSCA---------- Toxic Substances Control Act
TRIS---------- Toxic Chemical Release Inventory System
SSTS---------- Section 7 Tracking Systems
ROD---------- Records Of Decision
RMP---------- Risk Management Plans
RAATS---------- RCRA Administrative Action Tracking System
PRP---------- Potentially Responsible Parties
PADS---------- PCB Activity Database System
ICIS---------- Integrated Compliance Information System
FTTS---------- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS---------- Material Licensing Tracking System
COAL ASH DOE---------- Steam-Electric Plant Operation Data
COAL ASH EPA---------- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER---------- PCB Transformer Registration Database

EXECUTIVE SUMMARY

RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
MINES MRDS	Mineral Resources Data System
FINDS	Facility Index System/Facility Registry System
UXO	Unexploded Ordnance Sites
ECHO	Enforcement & Compliance History Information
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
PFAS NPL	Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES	Federal Sites PFAS Information
PFAS TRIS	List of PFAS Added to the TRI
PFAS TSCA	PFAS Manufacture and Imports Information
PFAS RCRA MANIFEST	PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR	PFAS Contamination Site Location Listing
PFAS WQP	Ambient Environmental Sampling for PFAS
PFAS NPDES	Clean Water Act Discharge Monitoring Information
PFAS PROJECT	NORTHEASTERN UNIVERSITY PFAS PROJECT
PFAS ECHO	Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAIN	Facilities in Industries that May Be Handling PFAS Listing
PFAS PT 139 AIRPORT	All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC	Aqueous Foam Related Incidents Listing
BIOSOLIDS	ICIS-NPDES Biosolids Facility Data
UST FINDER RELEASE	UST Finder Releases Database
UST FINDER	UST Finder Database
E MANIFEST	Hazardous Waste Electronic Manifest System
PFAS	PFAS Investigation Site Location Listing
AQUEOUS FOAM	Former Fire Training Facility Assessments Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
CHROME PLATING	Chrome Plating Facilities Listing
Cortese	"Cortese" Hazardous Waste & Substances Sites List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	Inspection, Compliance and Enforcement
HIST CORTESE	Hazardous Waste & Substance Site List
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
HAZNET	Facility and Manifest Data
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
NPDES	NPDES Permits Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
HAZMAT	Hazardous Material Facilities

EXECUTIVE SUMMARY

UIC ..... UIC Listing
UIC GEO ..... UIC GEO (GEOTRACKER)
WASTEWATER PITS ..... Oil Wastewater Pits Listing
WDS ..... Waste Discharge System
WIP ..... Well Investigation Program Case List
MILITARY PRIV SITES ..... MILITARY PRIV SITES (GEOTRACKER)
PROJECT ..... PROJECT (GEOTRACKER)
WDR ..... Waste Discharge Requirements Listing
CIWQS ..... California Integrated Water Quality System
CERS ..... CERS
NON-CASE INFO ..... NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS ..... OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS ..... PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT ..... SAMPLING POINT (GEOTRACKER)
WELL STIM PROJ ..... Well Stimulation Project (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ..... EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ..... EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ..... EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ..... Recovered Government Archive Solid Waste Facilities List
RGA LUST ..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Lists of state and tribal registered storage tanks

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there is 1 AST site within

approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAR VISTA FARMS, INC	***502 W BOWLES RD***	***SW 0 - 1/8 (0.018 mi.)***	***A1***	***9***
Database: AST, Date of Government Version: 07/06/2016				

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

CERS HAZ WASTE: List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

A review of the CERS HAZ WASTE list, as provided by EDR, and dated 07/10/2024 has revealed that there is 1 CERS HAZ WASTE site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAR VISTA FARMS, INC	***502 W BOWLES RD***	***SW 0 - 1/8 (0.018 mi.)***	***A1***	***9***

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 06/03/2024 has revealed that there is 1 RCRA NonGen / NLR site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AMC FARMS LLC EPA ID:: CAL000418385	6358 BRANDT RD	S 0 - 1/8 (0.056 mi.)	B3	14

CUPA Listings: A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

A review of the CUPA Listings list, as provided by EDR, has revealed that there are 2 CUPA Listings sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAR VISTA FARMS, INC	***502 W BOWLES RD***	***SW 0 - 1/8 (0.018 mi.)***	***A1***	***9***
Database: CUPA IMPERIAL, Date of Government Version: 04/15/2024				
TOP FLAVOR FARMS, IN	6328 BRANDT RD	S 1/8 - 1/4 (0.126 mi.)	C5	17
Database: CUPA IMPERIAL, Date of Government Version: 04/15/2024				

EXECUTIVE SUMMARY

HWTS: DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

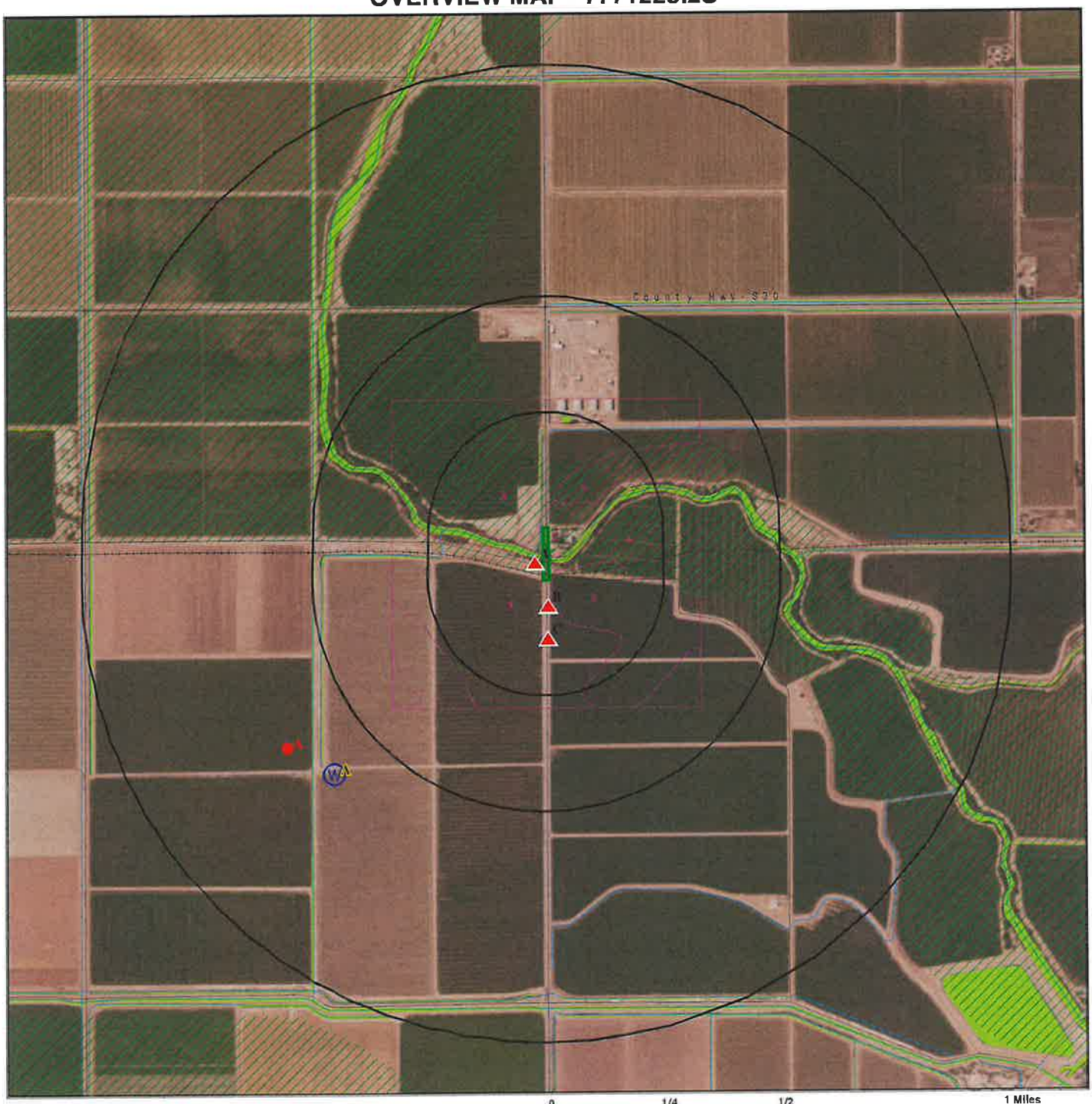
A review of the HWTS list, as provided by EDR, and dated 07/19/2024 has revealed that there are 3 HWTS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MAR VISTA FARMS INC	502 W BOWLES RD	SW 0 - 1/8 (0.018 mi.)	A2	13
AMC FARMS LLC	6358 BRANDT RD	S 0 - 1/8 (0.056 mi.)	B4	16
FRESH FLAVOR FARMS L	6328 BRANDT RD	S 1/8 - 1/4 (0.126 mi.)	C6	18

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 7771229.2S



0 1/4 1/2 1 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Brandt Road Bridge ADDRESS: Brandt Road Bridge Calipatria CA 92233 LAT/LONG: 33.118042 / 115.562608	CLIENT: Kleinfelder, Inc. CONTACT: Stefan Birardi INQUIRY #: 7771229.2s DATE: September 23, 2024 1:06 pm

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DETAIL MAP - 7771229.2S



0 1/16 1/8 1/4 Miles

- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Brandt Road Bridge ADDRESS: Brandt Road Bridge Calipatria CA 92233 LAT/LONG: 33.118042 / 115.562608	CLIENT: Kleinfelder, Inc. CONTACT: Stefan Birardi INQUIRY #: 7771229.2s DATE: September 23, 2024 1:08 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal (Superfund) equivalent sites								
RESPONSE	1.000		0	0	0	0	NR	0
Lists of state- and tribal hazardous waste facilities								
ENVIROSTOR	1.000		0	0	0	0	NR	0
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Lists of state and tribal leaking storage tanks								
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		1	0	NR	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	TP		NR	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		1	0	NR	NR	NR	1
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250		0	0	NR	NR	NR	0
HIST UST	0.250		0	0	NR	NR	NR	0
CA FID UST	0.250		0	0	NR	NR	NR	0
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
CHMIRS	TP		NR	NR	NR	NR	NR	0
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		1	0	NR	NR	NR	1
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS PROJECT	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAIN	0.250		0	0	NR	NR	NR	0
PFAS PT 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	TP		NR	NR	NR	NR	NR	0
UST FINDER RELEASE	0.500		0	0	0	NR	NR	0
UST FINDER	0.250		0	0	NR	NR	NR	0
E MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
CHROME PLATING	0.500		0	0	0	NR	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		1	1	NR	NR	NR	2
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP		NR	NR	NR	NR	NR	0
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500		0	0	0	NR	NR	0
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
HWTS	0.250		2	1	NR	NR	NR	3
HAZNET	TP		NR	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
HAZMAT	0.250		0	0	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UIC GEO	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP		NR	NR	NR	NR	NR	0
WIP	0.250		0	0	NR	NR	NR	0
MILITARY PRIV SITES	TP		NR	NR	NR	NR	NR	0
PROJECT	TP		NR	NR	NR	NR	NR	0
WDR	TP		NR	NR	NR	NR	NR	0
CIWQS	TP		NR	NR	NR	NR	NR	0
CERS	TP		NR	NR	NR	NR	NR	0
NON-CASE INFO	TP		NR	NR	NR	NR	NR	0
OTHER OIL GAS	TP		NR	NR	NR	NR	NR	0
PROD WATER PONDS	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SAMPLING POINT	TP		NR	NR	NR	NR	NR	0
WELL STIM PROJ	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	6	2	0	0	0	8

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
SW
< 1/8
0.018 mi.
96 ft.

MAR VISTA FARMS, INC.
502 W BOWLES RD
CALIPATRIA, CA 92233

Site 1 of 2 in cluster A

AST
CERS HAZ WASTE
CUPA Listings
CERS

S111785505
N/A

Relative:
Higher

Actual:
-208 ft.

AST:

Name:	MAR VISTA FARMS, INC.
Address:	502 W BOWLES RD
City/Zip:	CALIPATRIA,92233
Certified Unified Program Agencies:	Not reported
Owner:	Mar Vista Farms, Inc.
Total Gallons:	Not reported
CERSID:	10127473
Facility ID:	13-000-0576
Business Name:	Mar Vista Farms, Inc.
Phone:	(760)996-5342
Fax:	(760)344-0086
Mailing Address:	P. O. Box 974
Mailing Address City:	Brawley
Mailing Address State:	CA
Mailing Address Zip Code:	92227
Operator Name:	Michael B. Cox
Operator Phone:	(760)996-5342
Owner Phone:	(760)996-5342
Owner Mail Address:	P.O. Box 974
Owner State:	CA
Owner Zip Code:	92227
Owner Country:	United States
Property Owner Name:	Mar Vista Farms, Inc
Property Owner Phone:	760 996-5342
Property Owner Mailing Address:	P. O. Box 974
Property Owner City:	Brawley
Property Owner Stat :	CA
Property Owner Zip Code:	92227
Property Owner Country:	United States
EPAID:	CAL000309620

CERS HAZ WASTE:

Name:	MAR VISTA FARMS, INC.
Address:	502 W BOWLES RD
City,State,Zip:	CALIPATRIA, CA 92233
Site ID:	46407
CERS ID:	10127473
CERS Description:	Hazardous Waste Generator

CUPA IMPERIAL:

Facility ID:	FA0000576
Name:	MAR VISTA FARMS, INC.
Address:	502 W BOWLES RD
City,State,Zip:	CALIPATRIA, CA 92233

CUPA IMPERIAL:

Facility ID:	FA0000576
Name:	MAR VISTA FARMS, INC.
Address:	502 W BOWLES RD
Address 2:	3808 HIGHWAY 86
City,State,Zip:	CA
City 2:	BRAWLEY

MAR VISTA FARMS, INC. (Continued) **S111785505**

Zip 2:	92227
SIC Code:	191
Facility Status:	Active
Facility Telephone:	760-996-5342
Program Element/Description:	4452 - HAZ WASTE GENERATOR < 1TON
Record ID:	PR0001794
Care Of:	Not reported
Care Of 1:	Not reported
New Owner ID:	OW0000496
Owner Name:	MAR VISTA FARMS, INC.
Owner Address1:	P.O. BOX 974
Owner Address 2:	P.O. BOX 974
Owner City,State,Zip:	Not reported
Owner City 2:	BRAWLEY
Owner Zip 2:	92227
Owner DBA:	Not reported
Home Phone:	Not Specified
Work/Business Phone:	760-996-5342
Employee ID and Name:	Not reported

CERS:

Name:	MAR VISTA FARMS, INC.
Address:	502 W BOWLES RD
City,State,Zip:	CALIPATRIA, CA 92233
Site ID:	46407
CERS ID:	10127473
CERS Description:	Chemical Storage Facilities

Violations:

Site ID:	46407
Site Name:	Mar Vista Farms, Inc.
Violation Date:	04-15-2016
Citation:	HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description:	Business Plan Program - Release/Leaks/Spills - General
Violation Notes:	Returned to compliance on 01/12/2017. 19CCR 2731(c) Minimal spills in storage area. All spills promptly addressed to prevent discharge to air soil or surface water.
Violation Division:	Imperial CUPA - DTSC
Violation Program:	HMRRP
Violation Source:	CERS,
Site ID:	46407
Site Name:	Mar Vista Farms, Inc.
Violation Date:	04-15-2016
Citation:	HSC 6.95 Multiple - California Health and Safety Code, Chapter 6.95, Section(s) Multiple
Violation Description:	Business Plan Program - Operations/Maintenance - General
Violation Notes:	Returned to compliance on 01/12/2017. 22CCR 66261.7 Containers, tanks (fixed or portable) and totes are disposed of properly when empty.
Violation Division:	Imperial CUPA - DTSC
Violation Program:	HMRRP
Violation Source:	CERS,

Evaluation:

Eval General Type:	Compliance Evaluation Inspection

MAR VISTA FARMS, INC. (Continued) **S111785505**

Eval Date:	04-15-2016
Violations Found:	No
Eval Type:	Routine done by local agency
Eval Notes:	INSPECTOR A. ZHAN. NO VIOLATIONS
Eval Division:	Imperial CUPA - DTSC
Eval Program:	HW
Eval Source:	CERS,
Eval General Type:	Compliance Evaluation Inspection
Eval Date:	04-15-2016
Violations Found:	Yes
Eval Type:	Routine done by local agency
Eval Notes:	INPSECTOR A. ZHAN
Eval Division:	Imperial CUPA - DTSC
Eval Program:	HMRRP
Eval Source:	CERS,

Coordinates:

Site ID:	46407
Facility Name:	Mar Vista Farms, Inc.
Env Int Type Code:	HWG
Program ID:	10127473
Coord Name:	Not reported
Ref Point Type Desc:	Unknown,
Latitude:	33.118515
Longitude:	-115.586258

Affiliation:

Affiliation Type Desc:	Operator
Entity Name:	Michael B. Cox
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	(760) 996-5342,
Affiliation Type Desc:	Environmental Contact
Entity Name:	Michael B. Cox
Entity Title:	Not reported
Affiliation Address:	P.O.BOX 974
Affiliation City:	Brawley
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92227
Affiliation Phone:	,
Affiliation Type Desc:	Legal Owner
Entity Name:	Mar Vista Farms, Inc.
Entity Title:	Not reported
Affiliation Address:	P.O. Box 974
Affiliation City:	Brawley
Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92227

MAR VISTA FARMS, INC. (Continued) **S111785505**

Affiliation Phone:	(760) 996-5342,
Affiliation Type Desc:	CUPA District
Entity Name:	Imperial CUPA - DTSC
Entity Title:	Not reported
Affiliation Address:	627 Wake Avenue
Affiliation City:	El Centro
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92243
Affiliation Phone:	(760) 352-0381,
Affiliation Type Desc:	Document Preparer
Entity Name:	Michael B. Cox
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Facility Mailing Address
Entity Name:	Mailing Address
Entity Title:	Not reported
Affiliation Address:	P. O. Box 974
Affiliation City:	Brawley
Affiliation State:	CA
Affiliation Country:	Not reported
Affiliation Zip:	92227
Affiliation Phone:	,
Affiliation Type Desc:	Parent Corporation
Entity Name:	Mar Vista Farms, Inc.
Entity Title:	Not reported
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Identification Signer
Entity Name:	Michael B. Cox
Entity Title:	President
Affiliation Address:	Not reported
Affiliation City:	Not reported
Affiliation State:	Not reported
Affiliation Country:	Not reported
Affiliation Zip:	Not reported
Affiliation Phone:	,
Affiliation Type Desc:	Property Owner
Entity Name:	Mar Vista Farms, Inc
Entity Title:	Not reported
Affiliation Address:	P. O. Box 974
Affiliation City:	Brawley

MAR VISTA FARMS, INC. (Continued) **S111785505**

Affiliation State:	CA
Affiliation Country:	United States
Affiliation Zip:	92227
Affiliation Phone:	(760) 996-5342,

A2
SW
< 1/8
0.018 mi.
96 ft.

Relative: Higher

Actual: -208 ft.

MAR VISTA FARMS INC
502 W BOWLES RD
CALIPATRIA, CA 92233

HWTS **S124913174**
N/A

Site 2 of 2 in cluster A

HWTS:

Name:	MAR VISTA FARMS INC
Address:	502 W BOWLES RD
Address 2:	Not reported
City,State,Zip:	CALIPATRIA, CA 92233
EPA ID:	CAL000422561
Inactive Date:	06/30/2017
Create Date:	11/23/2016
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 974
Mailing Address 2:	Not reported
Mailing City,State,Zip:	BRAWLEY, CA 92227
Owner Name:	MAR VISTA FARMS INC
Owner Address:	PO BOX 974
Owner Address 2:	Not reported
Owner City,State,Zip:	BRAWLEY, CA 92227
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	MICHAEL COX
Contact Address:	249 ANDRITA PL
Contact Address 2:	Not reported
City,State,Zip:	BRAWLEY, CA 92227
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Inactive
Facility Type:	PERMANENT
Category:	STATE
Latitude:	33.11853841
Longitude:	-115.58630643

NAICS:

EPA ID:	CAL000422561
Create Date:	2016-11-23 14:28:07.257
NAICS Code:	111991
NAICS Description:	Sugar Beet Farming
Issued EPA ID Date:	2016-11-23 14:28:07.20000
Inactive Date:	2017-06-30 00:00:00
Facility Name:	MAR VISTA FARMS INC
Facility Address:	502 W BOWLES RD
Facility Address 2:	Not reported
Facility City:	CALIPATRIA
Facility County:	Not reported
Facility State:	CA
Facility Zip:	92233

B3 **AMC FARMS LLC** **RCRA NonGen / NLR** **1024855590**
South **6358 BRANDT RD** **CAL000418385**
< 1/8 **CALIPATRIA, CA 92233**
0.056 mi.
295 ft. **Site 1 of 2 in cluster B**

Relative:
Higher

Actual:
-191 ft.

RCRA Listings:

Date Form Received by Agency:	20160624
Handler Name:	Amc Farms Llc
Handler Address:	6358 Brandt Rd
Handler City,State,Zip:	CALIPATRIA, CA 92233
EPA ID:	CAL000418385
Contact Name:	KJ WYCUFF
Contact Address:	P.O. BOX 177
Contact City,State,Zip:	BRAWLEY, CA 92227
Contact Telephone:	760-790-7682
Contact Fax:	760-502-2002
Contact Email:	AMCFARMS7@GMAIL.COM
Contact Title:	Not reported
EPA Region:	09
Land Type:	Not reported
Federal Waste Generator Description:	Not a generator, verified
Non-Notifier:	Not reported
Biennial Report Cycle:	Not reported
Accessibility:	Not reported
Active Site Indicator:	Handler Activities
State District Owner:	Not reported
State District:	Not reported
Mailing Address:	P.O. BOX 177
Mailing City,State,Zip:	BRAWLEY, CA 92227
Owner Name:	Andrew Colace
Owner Type:	Other
Operator Name:	Kj Wycuff
Operator Type:	Other
Short-Term Generator Activity:	No
Importer Activity:	No
Mixed Waste Generator:	No
Transporter Activity:	No
Transfer Facility Activity:	No
Recycler Activity with Storage:	No
Small Quantity On-Site Burner Exemption:	No
Smelting Melting and Refining Furnace Exemption:	No
Underground Injection Control:	No
Off-Site Waste Receipt:	No
Universal Waste Indicator:	Yes
Universal Waste Destination Facility:	Yes
Federal Universal Waste:	No
Active Site State-Reg Handler:	---
Federal Facility Indicator:	Not reported
Hazardous Secondary Material Indicator:	N
Sub-Part K Indicator:	Not reported
2018 GPRA Permit Baseline:	Not on the Baseline
2018 GPRA Renewals Baseline:	Not on the Baseline
202 GPRA Corrective Action Baseline:	No
Subject to Corrective Action Universe:	No
Non-TSDFs Where RCRA CA has Been Imposed Universe:	No
Corrective Action Priority Ranking:	No NCAPS ranking
Environmental Control Indicator:	No
Institutional Control Indicator:	No

AMC FARMS LLC (Continued) **1024855590**

Human Exposure Controls Indicator:	N/A
Groundwater Controls Indicator:	N/A
Significant Non-Complier Universe:	No
Unaddressed Significant Non-Complier Universe:	No
Addressed Significant Non-Complier Universe:	No
Significant Non-Complier With a Compliance Schedule Universe:	No
Financial Assurance Required:	Not reported
Handler Date of Last Change:	20180906
Recognized Trader-Importer:	No
Recognized Trader-Exporter:	No
Importer of Spent Lead Acid Batteries:	No
Exporter of Spent Lead Acid Batteries:	No
Recycler Activity Without Storage:	No
Manifest Broker:	No
Sub-Part P Indicator:	No

Handler - Owner Operator:

Owner/Operator Indicator:	Owner
Owner/Operator Name: ANDREW COLACE	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	1193 LA VALENCIA CT
Owner/Operator City,State,Zip:	BRAWLEY, CA 92227-7749
Owner/Operator Telephone:	760-427-3803
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Owner/Operator Indicator:	Operator
Owner/Operator Name: KJ WYCUFF	
Legal Status:	Other
Date Became Current:	Not reported
Date Ended Current:	Not reported
Owner/Operator Address:	P.O. BOX 177
Owner/Operator City,State,Zip:	BRAWLEY, CA 92227
Owner/Operator Telephone:	760-790-7682
Owner/Operator Telephone Ext:	Not reported
Owner/Operator Fax:	Not reported
Owner/Operator Email:	Not reported

Historic Generators:

Receive Date:	20160624
Handler Name: AMC FARMS LLC	
Federal Waste Generator Description:	Not a generator, verified
State District Owner:	Not reported
Large Quantity Handler of Universal Waste:	No
Recognized Trader Importer:	No
Recognized Trader Exporter:	No
Spent Lead Acid Battery Importer:	No
Spent Lead Acid Battery Exporter:	No
Current Record:	Yes
Non Storage Recycler Activity:	Not reported
Electronic Manifest Broker:	Not reported

AMC FARMS LLC (Continued) **1024855590**

List of NAICS Codes and Descriptions:
NAICS Code: 92614
NAICS Description: REGULATION OF AGRICULTURAL MARKETING AND COMMODITIES

Facility Has Received Notices of Violations:
Violations: No Violations Found

Evaluation Action Summary:
Evaluations: No Evaluations Found

B4
South
< 1/8
0.056 mi.
295 ft.

AMC FARMS LLC **HWTS S124910816**
6358 BRANDT RD **N/A**
CALIPATRIA, CA 92233

Site 2 of 2 in cluster B

Relative: Higher

Actual: -191 ft.

HWTS:

Name:	AMC FARMS LLC
Address:	6358 BRANDT RD
Address 2:	Not reported
City,State,Zip:	CALIPATRIA, CA 92233
EPA ID:	CAL000418385
Inactive Date:	06/30/2020
Create Date:	06/24/2016
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	P.O. BOX 177
Mailing Address 2:	Not reported
Mailing City,State,Zip:	BRAWLEY, CA 92227
Owner Name:	ANDREW COLACE
Owner Address:	424 MENGER SPRINGS
Owner Address 2:	Not reported
Owner City,State,Zip:	BEORNE, TX 760080000
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	KJ WYCUFF
Contact Address:	P.O. BOX 177
Contact Address 2:	Not reported
City,State,Zip:	BRAWLEY, CA 92227
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Inactive
Facility Type:	PERMANENT
Category:	STATE
Latitude:	-90
Longitude:	180

NAICS:

EPA ID:	CAL000418385
Create Date:	2016-06-24 08:28:56.520
NAICS Code:	92614
NAICS Description:	Regulation of Agricultural Marketing and Commodities
Issued EPA ID Date:	2016-06-24 08:28:56.50300
Inactive Date:	2020-06-30 00:00:00
Facility Name:	AMC FARMS LLC
Facility Address:	6358 BRANDT RD

AMC FARMS LLC (Continued) **S124910816**

Facility Address 2:	Not reported
Facility City:	CALIPATRIA
Facility County:	Not reported
Facility State:	CA
Facility Zip:	92233

C5 **TOP FLAVOR FARMS, INC. BRAWLEY** **CUPA Listings** **S111785477**
South **6328 BRANDT RD** **N/A**
1/8-1/4 **, CA**
0.126 mi.
664 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
-191 ft.

CUPA IMPERIAL:

Facility ID:	FA0000548
Name:	TOP FLAVOR FARMS, INC. BRAWLEY
Address:	6328 BRANDT RD
City,State,Zip:	CA

CUPA IMPERIAL:

Facility ID:	FA0000548
Name:	TOP FLAVOR FARMS, INC. BRAWLEY
Address:	6328 BRANDT RD
Address 2:	6328 BRANDT RD
City,State,Zip:	CA
City 2:	CALIPATRIA
Zip 2:	92233
SIC Code:	722
Facility Status:	Active
Facility Telephone:	928-341-0873
Program Element/Description:	4250 - HAZARDOUS MATERIALS BUSINESS PLAN
Record ID:	PR0001717
Care Of:	Not reported
Care Of 1:	Not reported
New Owner ID:	OW0000474
Owner Name:	TOP FLAVOR FARMS, INC.
Owner Address1:	P.O. BOX 2855
Owner Address 2:	P.O. BOX 2855
Owner City,State,Zip:	Not reported
Owner City 2:	YUMA
Owner Zip 2:	85366
Owner DBA:	Not reported
Home Phone:	Not Specified
Work/Business Phone:	928-941-1387
Employee ID and Name:	Not reported

C6 **FRESH FLAVOR FARMS LLC** **HWTS** **S124859873**
South **6328 BRANDT RD** **N/A**
1/8-1/4 **CALIPATRIA, CA 92233**
0.126 mi.
664 ft. **Site 2 of 2 in cluster C**

Relative:
Higher

Actual:
-191 ft.

HWTS:

Name:	FRESH FLAVOR FARMS LLC
Address:	6328 BRANDT RD
Address 2:	Not reported
City,State,Zip:	CALIPATRIA, CA 92233
EPA ID:	CAL000305950
Inactive Date:	06/30/2013
Create Date:	04/25/2006
Last Act Date:	Not reported
Mailing Name:	Not reported
Mailing Address:	PO BOX 2784
Mailing Address 2:	Not reported
Mailing City,State,Zip:	YUMA, AZ 853662855
Owner Name:	FRESH FLAVOR FARMS LLC
Owner Address:	PO BOX 2784
Owner Address 2:	Not reported
Owner City,State,Zip:	YUMA, AZ 853662855
Owner Phone:	Not reported
Owner Fax:	Not reported
Contact Name:	REBECCA STANLEY
Contact Address:	1750 E 20TH ST
Contact Address 2:	Not reported
City,State,Zip:	YUMA, AZ 853650000
Contact Phone:	Not reported
Contact Fax:	Not reported
Facility Status:	Inactive
Facility Type:	PERMANENT
Category:	STATE
Latitude:	33.115919
Longitude:	-115.562576

NAICS:

EPA ID:	CAL000305950
Create Date:	2006-04-25 13:46:51.417
NAICS Code:	111998
NAICS Description:	All Other Miscellaneous Crop Farming
Issued EPA ID Date:	2006-04-25 13:46:51.38700
Inactive Date:	2013-06-30 00:00:00
Facility Name:	FRESH FLAVOR FARMS LLC
Facility Address:	6328 BRANDT RD
Facility Address 2:	Not reported
Facility City:	CALIPATRIA
Facility County:	Not reported
Facility State:	CA
Facility Zip:	92233

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: EPA
Telephone: N/A
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 06/07/2024
Date Data Arrived at EDR: 06/25/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 06/25/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 07/24/2024
Date Data Arrived at EDR: 08/01/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 07/24/2024
Date Data Arrived at EDR: 08/01/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 27

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/14/2024
Date Data Arrived at EDR: 02/16/2024
Date Made Active in Reports: 04/04/2024
Number of Days to Update: 48

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 07/31/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 07/24/2024
Date Data Arrived at EDR: 08/08/2024
Date Made Active in Reports: 08/15/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 07/24/2024
Date Data Arrived at EDR: 08/08/2024
Date Made Active in Reports: 08/15/2024
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 06/11/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 79

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

Lists of state- and tribal (Superfund) equivalent sites

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/22/2024
Date Data Arrived at EDR: 04/23/2024
Date Made Active in Reports: 07/17/2024
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/22/2024
Date Data Arrived at EDR: 04/23/2024
Date Made Active in Reports: 07/17/2024
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/06/2024
Date Data Arrived at EDR: 05/07/2024
Date Made Active in Reports: 07/30/2024
Number of Days to Update: 84

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 08/06/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Quarterly

Lists of state and tribal leaking storage tanks

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List
Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

LUST REG 2: Fuel Leak List
Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/11/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/07/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: No Update Planned

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: No Update Planned

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 03/15/2024
Date Data Arrived at EDR: 03/19/2024
Date Made Active in Reports: 06/17/2024
Number of Days to Update: 90

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 08/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 02/13/2024
Date Data Arrived at EDR: 03/05/2024
Date Made Active in Reports: 06/03/2024
Number of Days to Update: 90

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 09/04/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 2

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/11/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/14/2024
Date Data Arrived at EDR: 05/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 90

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/22/2024
Date Data Arrived at EDR: 04/23/2024
Date Made Active in Reports: 07/17/2024
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 06/17/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/10/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 06/10/2024
Date Data Arrived at EDR: 06/11/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 09/11/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 07/17/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 04/04/2024
Date Data Arrived at EDR: 04/05/2024
Date Made Active in Reports: 04/15/2024
Number of Days to Update: 10

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 07/31/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 07/22/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register
A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 05/20/2024
Date Data Arrived at EDR: 05/21/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 79

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/19/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database
The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program
This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/22/2024
Date Data Arrived at EDR: 04/23/2024
Date Made Active in Reports: 07/17/2024
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 07/22/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs
A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 03/21/2024
Date Made Active in Reports: 06/12/2024
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites
Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

CERS HAZ WASTE: California Environmental Reporting System Hazardous Waste
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 07/10/2024
Date Data Arrived at EDR: 07/10/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 2

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 05/20/2024
Date Data Arrived at EDR: 05/21/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 79

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 08/19/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 04/29/2024
Date Data Arrived at EDR: 04/30/2024
Date Made Active in Reports: 07/23/2024
Number of Days to Update: 84

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 07/10/2024
Date Data Arrived at EDR: 07/10/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 2

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 05/31/2024
Date Data Arrived at EDR: 06/21/2024
Date Made Active in Reports: 09/11/2024
Number of Days to Update: 82

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 05/28/2024
Date Data Arrived at EDR: 05/29/2024
Date Made Active in Reports: 08/20/2024
Number of Days to Update: 83

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/14/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 06/24/2024
Number of Days to Update: 7

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 02/01/2024
Date Data Arrived at EDR: 04/16/2024
Date Made Active in Reports: 07/11/2024
Number of Days to Update: 86

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 2

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 06/20/2024
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 86

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 08/12/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 07/11/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 07/02/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 08/05/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 06/10/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA Watch List

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 08/01/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 09/12/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/13/2023
Date Made Active in Reports: 02/07/2024
Number of Days to Update: 86

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 08/15/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 07/11/2024
Date Data Arrived at EDR: 07/11/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 1

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 07/11/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/01/2024
Date Data Arrived at EDR: 04/17/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 07/11/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 09/19/2023
Date Data Arrived at EDR: 10/03/2023
Date Made Active in Reports: 10/19/2023
Number of Days to Update: 16

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2023
Date Data Arrived at EDR: 04/04/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 66

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 07/02/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 06/06/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 89

Source: Nuclear Regulatory Commission
Telephone: 301-415-0717
Last EDR Contact: 07/11/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 11/27/2023
Date Made Active in Reports: 02/22/2024
Number of Days to Update: 87

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 08/27/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 08/01/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 07/23/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2024
Date Data Arrived at EDR: 04/19/2024
Date Made Active in Reports: 06/26/2024
Number of Days to Update: 68

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 03/20/2023
Number of Days to Update: 11

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations
This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 07/02/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program
DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites
Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 05/08/2024
Date Data Arrived at EDR: 08/14/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 14

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 08/27/2024
Date Data Arrived at EDR: 09/03/2024
Date Made Active in Reports: 09/19/2024
Number of Days to Update: 16

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 09/03/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites
A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 04/01/2024
Date Data Arrived at EDR: 04/04/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 99

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 07/02/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Quarterly

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/06/2024
Date Data Arrived at EDR: 08/14/2024
Date Made Active in Reports: 08/15/2024
Number of Days to Update: 1

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 08/14/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 05/22/2024
Date Made Active in Reports: 08/15/2024
Number of Days to Update: 85

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 06/13/2024
Date Data Arrived at EDR: 06/14/2024
Date Made Active in Reports: 09/04/2024
Number of Days to Update: 82

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 08/23/2022
Date Data Arrived at EDR: 11/22/2022
Date Made Active in Reports: 02/28/2023
Number of Days to Update: 98

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 08/13/2024
Date Data Arrived at EDR: 08/20/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 8

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 09/06/2023
Date Data Arrived at EDR: 09/13/2023
Date Made Active in Reports: 12/11/2023
Number of Days to Update: 89

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 07/08/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 06/23/2024
Date Data Arrived at EDR: 06/28/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/28/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 86

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 06/24/2020
Date Data Arrived at EDR: 03/17/2021
Date Made Active in Reports: 11/08/2022
Number of Days to Update: 601

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS PROJECT: NORTHEASTERN UNIVERSITY PFAS PROJECT

The PFAS Contamination Site Tracker records qualitative and quantitative data from each site in a chart, specifically examining discovery, contamination levels, government response, litigation, health impacts, media coverage, and community characteristics. All data presented in the chart were extracted from government websites, such as state health departments or the Environmental Protection Agency, and news articles.

Date of Government Version: 05/19/2023
Date Data Arrived at EDR: 04/05/2024
Date Made Active in Reports: 06/06/2024
Number of Days to Update: 62

Source: Social Science Environmental Health Research Institute
Telephone: N/A
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS ECHO FIRE TRAIN: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PFAS PT 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 07/01/2024
Date Data Arrived at EDR: 07/01/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 11

Source: Environmental Protection Agency
Telephone: 202-267-2675
Last EDR Contact: 07/01/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 06/27/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/10/2017
Number of Days to Update: 63

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 06/27/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: No Update Planned

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data

The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 04/14/2024
Date Data Arrived at EDR: 04/16/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-564-4700
Last EDR Contact: 07/16/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

UST FINDER RELEASE: UST Finder Releases Database

US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/31/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 79

Source: Environmental Protecton Agency
Telephone: 202-564-0394
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Semi-Annually

UST FINDER: UST Finder Database

EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-564-0394
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

E MANIFEST: Hazardous Waste Electronic Manifest System

EPA established a national system for tracking hazardous waste shipments electronically. This system, known as ?e-Manifest,? will modernize the nation?s cradle-to-grave hazardous waste tracking process while saving valuable time, resources, and dollars for industry and states.

Date of Government Version: 07/24/2023
Date Data Arrived at EDR: 04/18/2024
Date Made Active in Reports: 06/06/2024
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 833-501-6826
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

PFAS: PFAS Contamination Site Location Listing

A listing of PFAS sites included in the Envirostor and GeoTracker databases. Locations of potential sources of per - and polyfluoroalkyl substances (PFAS). This does not mean that PFAS has been produced, used, or discharged at these sites.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 09/03/2024
Number of Days to Update: 6

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

AQUEOUS FOAM: Former Fire Training Facility Assessments Listing

Airports shown on this list are those believed to use Aqueous Film Forming Foam (AFFF), and certified by the Federal Aviation Administration (FAA) under Title 14, Code of Federal Regulations (CFR), Part 139 (14 CFR Part 139). This list was created by SWRCB using information available from the FAA. Location points shown are from the latitude and longitude listed on the FAA airport master record.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/04/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CHROME PLATING: Chrome Plating Facilities Listing

This listing represents chrome plating facilities the California State Water Resources Control Board staff identified as possibly being a source of Per- and polyfluoroalkyl substance (PFAS) contamination. Sites and locations were identified by staff with the Division of Water Quality in the California State Water Board. Data was collected from the CA Air Resources Board 2013 and 2018 - Cr VI emission survey, CA Emission Inventory, CA HAZ Waste discharge database and by reviewing storm water permits. Former chrome plating sites are also included that are open site investigation or remediation cases with the Regional Water Quality Control Boards and the Department of Toxic Substances Control.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/04/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-341-5455
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 06/17/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/10/2024
Number of Days to Update: 85

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

CUPA LIV-PLE: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 02/14/2024
Date Data Arrived at EDR: 02/21/2024
Date Made Active in Reports: 05/08/2024
Number of Days to Update: 77

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEAN SACRAMENTO: Sacramento Metropolitan Air Quality Management DistrictDrycleaner Facility Listing
A listing of drycleaner facility locations, for the Sacramento Metropolitan Air Quality Management District.

Date of Government Version: 01/03/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: Sacramento Metropolitan Air Quality Management District
Telephone: 916-874-3958
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN YOLO-SOLANO: Yolo-Solano Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Yolo-Solano Air Quality Management District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/05/2024
Date Made Active in Reports: 03/20/2024
Number of Days to Update: 75

Source: Yolo-Solano Air Quality Management District
Telephone: 530-757-3650
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN IMPERIAL: Imperial County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Imperial County Air Pollution Control District

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79

Source: Imperial County Air Pollution Control District
Telephone: 442-265-1800
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN EAST KERN: Eastern Kern Air Pollution Control District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Eastern Kern Air Pollution Control District.

Date of Government Version: 01/12/2023
Date Data Arrived at EDR: 04/26/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 79

Source: Eastern Kern Air Pollution Control District
Telephone: 661-862-9684
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MENDOCINO: Mendocino County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Mendocino County Air Quality Management District.

Date of Government Version: 02/26/2024
Date Data Arrived at EDR: 02/28/2024
Date Made Active in Reports: 05/15/2024
Number of Days to Update: 77

Source: Mendocino County Air Quality Management District
Telephone: 707-463-4354
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN AVAQMD: Antelope Valley Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 02/26/2024
Date Data Arrived at EDR: 02/27/2024
Date Made Active in Reports: 05/15/2024
Number of Days to Update: 78

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Varies

DRYCLEAN LAKE: Lake County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Lake County Air Quality Management District,

Date of Government Version: 02/15/2024
Date Data Arrived at EDR: 02/16/2024
Date Made Active in Reports: 05/02/2024
Number of Days to Update: 76

Source: Lake County Air Quality Management District
Telephone: 707-263-7000
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN GRANT: Grant Recipients List

Assembly Bill 998 (AB 998) established the Non-Toxic Dry Cleaning Incentive Program to provide financial assistance to the dry cleaning industry to switch from systems using perchloroethylene (Perc), an identified toxic air contaminant and potential human carcinogen, to non-toxic and non-smog forming alternatives.

Date of Government Version: 12/31/2021
Date Data Arrived at EDR: 01/26/2024
Date Made Active in Reports: 04/16/2024
Number of Days to Update: 81

Source: California Air Resources Board
Telephone: 916-323-0006
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 04/02/2024
Date Data Arrived at EDR: 04/05/2024
Date Made Active in Reports: 04/15/2024
Number of Days to Update: 10

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Annually

DRYCLEAN SAN DIEGO: San Diego County Air Pollution Control District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the San Diego County Air Pollution Control District.

Date of Government Version: 03/19/2024
Date Data Arrived at EDR: 03/21/2024
Date Made Active in Reports: 04/12/2024
Number of Days to Update: 22

Source: San Diego County Air Pollution Control District
Telephone: 858-586-2616
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN FEATHER RVR: Feather River Air Quality Management District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Feather River Air Quality Management District.

Date of Government Version: 03/08/2023
Date Data Arrived at EDR: 03/09/2023
Date Made Active in Reports: 06/05/2023
Number of Days to Update: 88

Source: Feather River Air Quality Management District
Telephone: 530-634-7659
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN BUTTE: Butte County Air Quality Management DistrictDrycleaner Facility Listing

Butte County Air Quality Management DistrictDrycleaner Facility Listing.

Date of Government Version: 04/25/2023
Date Data Arrived at EDR: 10/18/2023
Date Made Active in Reports: 01/16/2024
Number of Days to Update: 90

Source: Butte County Air Quality Management District
Telephone: 530-332-9400
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MOJAVE: Mojave Desert Air Quality Management District Drycleaner Facility Listing

A listing of drycleaner facility locations, for the Mojave Desert Air Quality Management District.

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 04/17/2024
Date Made Active in Reports: 04/24/2024
Number of Days to Update: 7

Source: Mojave Desert Air Quality Management District
Telephone: 760-245-1661
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN MONTERY BAY: Monterey Bay Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Monterey Bay Air Quality Management District.

Date of Government Version: 01/03/2024
Date Data Arrived at EDR: 01/05/2024
Date Made Active in Reports: 03/20/2024
Number of Days to Update: 75

Source: Monterey Bay Air Quality Management District
Telephone: 831-647-9411
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SAN LUIS OB: San Luis Obispo County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Luis Obispo County Air Pollution Control District.

Date of Government Version: 01/03/2024
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/20/2024
Number of Days to Update: 76

Source: San Luis Obispo County Air Pollution Control District
Telephone: 805-781-5756
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SHASTA: Shasta County Air Quality Management District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Shasta County Air Quality Management District.

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/14/2023
Number of Days to Update: 78

Source: Shasta County Air Quality Management District
Telephone: 530-225-5674
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN N SONOMA: Norther Sonoma County County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Northern Sonoma County Air Pollution Control District.,

Date of Government Version: 01/05/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: Santa Barbara County Air Pollution Control District
Telephone: 707-433-5911
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN GLENN: Glenn County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Glenn County Air Pollution Control District.

Date of Government Version: 01/08/2024
Date Data Arrived at EDR: 01/10/2024
Date Made Active in Reports: 03/27/2024
Number of Days to Update: 77

Source: Glenn County Air Pollution Control District
Telephone: 530-934-6500
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN TEHAMA: Tehama County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Tehama County Air Pollution Control District.

Date of Government Version: 04/24/2019
Date Data Arrived at EDR: 04/24/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1468

Source: Tehama County Air Pollution Control District
Telephone: 530-527-3717
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN VENTURA: Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Ventura County Air Pollution Control District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/16/2024
Date Made Active in Reports: 02/08/2024
Number of Days to Update: 23

Source: Ventura County Air Pollution Control District
Telephone: 805-645-1421
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEAN SANTA BARB: Santa Barbara County Air Pollution Control District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Santa Barbara County Air Pollution Control District.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 04/17/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1475

Source: Santa Barbara County Air Pollution Control District
Telephone: 805-961-8867
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN N SIERRA: Northern Sierra Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Northern Sierra Air Quality Management District,

Date of Government Version: 05/07/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1455

Source: Northern Sierra Air Quality Management District
Telephone: 530-274-9350
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: South Coast Air Quality Management District Drycleaner Listing
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 05/21/2024
Date Data Arrived at EDR: 05/23/2024
Date Made Active in Reports: 08/19/2024
Number of Days to Update: 88

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

DRYCLEAN AMADOR: Amador Air District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Amador Air Quality Management District

Date of Government Version: 04/26/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 77

Source: Amador Air Quality Management District
Telephone: 209-257-0112
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN N COAST: North Coast Unified Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the North Coast Unified Air Quality Management District.

Date of Government Version: 11/30/2016
Date Data Arrived at EDR: 04/19/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1473

Source: North Coast Unified Air Quality Management District
Telephone: 707-443-3093
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN CALAVERAS: Calaveras County Environmental Management Agency Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Calaveras County Environmental Management Agency.

Date of Government Version: 06/17/2019
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1412

Source: Calaveras County Environmental Management Agency
Telephone: 209-754-6399
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Varies

DRYCLEAN BAY AREA: Bay Area Air Quality Management District Drycleaner Facility Listing
Bay Area Air Quality Management District Drycleaner Facility Listing.

Date of Government Version: 02/20/2019
Date Data Arrived at EDR: 05/30/2019
Date Made Active in Reports: 05/01/2023
Number of Days to Update: 1432

Source: Bay Area Air Quality Management District
Telephone: 415-516-1916
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DRYCLEAN SAN JOAQUIN: San Joaquin Valley Air Pollution Control District District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the San Joaquin Valley Air Pollution Control District.

Date of Government Version: 01/04/2024
Date Data Arrived at EDR: 01/04/2024
Date Made Active in Reports: 03/21/2024
Number of Days to Update: 77

Source: San Joaquin Valley Air Pollution Control District
Telephone: 559-230-6001
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

DRYCLEAN PLACER: Placer County Air Quality Management District Drycleaner Facility Listing
A listing of drycleaner facility locations, for the Placer County Air Quality Management District.

Date of Government Version: 05/15/2023
Date Data Arrived at EDR: 05/17/2023
Date Made Active in Reports: 08/14/2023
Number of Days to Update: 89

Source: Placer County Air Quality Management District
Telephone: 530-745-2335
Last EDR Contact: 08/21/2024
Next Scheduled EDR Contact: 09/11/2023
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 06/11/2024
Date Made Active in Reports: 09/03/2024
Number of Days to Update: 84

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 09/11/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 04/16/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 87

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 07/16/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

FIN ASSURANCE 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/12/2024
Date Data Arrived at EDR: 04/12/2024
Date Made Active in Reports: 07/09/2024
Number of Days to Update: 88

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

FIN ASSURANCE 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 08/07/2024
Date Data Arrived at EDR: 08/14/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 14

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 07/31/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Varies

ICE: Inspection, Compliance and Enforcement
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/07/2024
Number of Days to Update: 85

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 08/12/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing

Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/07/2024
Number of Days to Update: 85

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 08/12/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database

A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/02/2024
Date Data Arrived at EDR: 04/04/2024
Date Made Active in Reports: 06/26/2024
Number of Days to Update: 83

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 07/02/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Quarterly

HWTS: Hazardous Waste Tracking System

DTSC maintains the Hazardous Waste Tracking System that stores ID number information since the early 1980s and manifest data since 1993. The system collects both manifest copies from the generator and destination facility.

Date of Government Version: 07/19/2024
Date Data Arrived at EDR: 07/30/2024
Date Made Active in Reports: 08/28/2024
Number of Days to Update: 29

Source: Department of Toxic Substances Control
Telephone: 916-324-2444
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 04/04/2024
Date Made Active in Reports: 06/26/2024
Number of Days to Update: 83

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 07/02/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/04/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 86

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 09/04/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 05/22/2024
Date Data Arrived at EDR: 05/29/2024
Date Made Active in Reports: 08/20/2024
Number of Days to Update: 83

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 05/06/2024
Date Data Arrived at EDR: 05/07/2024
Date Made Active in Reports: 07/31/2024
Number of Days to Update: 85

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 08/06/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 05/28/2024
Date Data Arrived at EDR: 05/29/2024
Date Made Active in Reports: 08/20/2024
Number of Days to Update: 83

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 2

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 06/06/2024
Date Data Arrived at EDR: 06/07/2024
Date Made Active in Reports: 09/03/2024
Number of Days to Update: 88

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SAN JOSE HAZMAT: Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/03/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 01/26/2021
Number of Days to Update: 82

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 07/23/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Annually

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 09/02/2024
Date Data Arrived at EDR: 09/04/2024
Date Made Active in Reports: 09/05/2024
Number of Days to Update: 1

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 09/04/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

UIC GEO: Underground Injection Control Sites (GEOTRACKER)
Underground control injection sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 02/11/2021
Date Data Arrived at EDR: 07/01/2021
Date Made Active in Reports: 09/29/2021
Number of Days to Update: 90

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 07/03/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: No Update Planned

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: No Update Planned

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

PROJECT: Project Sites (GEOTRACKER)
Projects sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

WDR: Waste Discharge Requirements Listing
In general, the Waste Discharge Requirements (WDRs) Program (sometimes also referred to as the "Non Chapter 15 (Non 15) Program") regulates point discharges that are exempt pursuant to Subsection 20090 of Title 27 and not subject to the Federal Water Pollution Control Act. Exemptions from Title 27 may be granted for nine categories of discharges (e.g., sewage, wastewater, etc.) that meet, and continue to meet, the preconditions listed for each specific exemption. The scope of the WDRs Program also includes the discharge of wastes classified as inert, pursuant to section 20230 of Title 27.

Date of Government Version: 06/03/2024
Date Data Arrived at EDR: 06/04/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 87

Source: State Water Resources Control Board
Telephone: 916-341-5810
Last EDR Contact: 09/04/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

CIWQS: California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 08/20/2024
Date Data Arrived at EDR: 08/20/2024
Date Made Active in Reports: 08/22/2024
Number of Days to Update: 2

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 07/10/2024
Date Data Arrived at EDR: 07/10/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 2

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

NON-CASE INFO: Non-Case Information Sites (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

OTHER OIL GAS: Other Oil & Gas Projects Sites (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

PROD WATER PONDS: Produced Water Ponds Sites (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

SAMPLING POINT: Sampling Point ? Public Sites (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

WELL STIM PROJ: Well Stimulation Project (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 08/28/2024
Date Data Arrived at EDR: 08/28/2024
Date Made Active in Reports: 08/29/2024
Number of Days to Update: 1

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations
EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

CS ALAMEDA: Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2019
Date Data Arrived at EDR: 01/11/2019
Date Made Active in Reports: 03/05/2019
Number of Days to Update: 53

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST ALAMEDA: Underground Tanks
Underground storage tank sites located in Alameda county.

Date of Government Version: 12/26/2023
Date Data Arrived at EDR: 12/26/2023
Date Made Active in Reports: 03/19/2024
Number of Days to Update: 84

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA AMADOR: CUPA Facility List
Cupa Facility List

Date of Government Version: 04/27/2023
Date Data Arrived at EDR: 04/27/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 77

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 07/23/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA BUTTE: CUPA Facility Listing
Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA CALVERAS: CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 03/01/2024
Date Data Arrived at EDR: 03/19/2024
Date Made Active in Reports: 06/11/2024
Number of Days to Update: 84

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA COLUSA: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/06/2020
Date Data Arrived at EDR: 04/23/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 78

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 07/23/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SL CONTRA COSTA: Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 04/11/2024
Date Data Arrived at EDR: 04/23/2024
Date Made Active in Reports: 07/17/2024
Number of Days to Update: 85

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA DEL NORTE: CUPA Facility List
Cupa Facility list

Date of Government Version: 02/05/2024
Date Data Arrived at EDR: 02/08/2024
Date Made Active in Reports: 04/26/2024
Number of Days to Update: 78

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA EL DORADO: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/08/2022
Date Data Arrived at EDR: 08/09/2022
Date Made Active in Reports: 09/01/2022
Number of Days to Update: 23

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 07/17/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA FRESNO: CUPA Resources List
Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 06/28/2021
Date Data Arrived at EDR: 12/21/2021
Date Made Active in Reports: 03/03/2022
Number of Days to Update: 72

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/27/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA GLENN: CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: No Update Planned

HUMBOLDT COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA HUMBOLDT: CUPA Facility List
CUPA facility list.

Date of Government Version: 08/12/2021
Date Data Arrived at EDR: 08/12/2021
Date Made Active in Reports: 11/08/2021
Number of Days to Update: 88

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA IMPERIAL: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 04/17/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 86

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

INYO COUNTY:

CUPA INYO: CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

KERN COUNTY:

CUPA KERN: CUPA Facility List
A listing of sites included in the Kern County Hazardous Material Business Plan.

Date of Government Version: 05/23/2024
Date Data Arrived at EDR: 06/11/2024
Date Made Active in Reports: 06/17/2024
Number of Days to Update: 6

Source: Kern County Public Health
Telephone: 661-321-3000
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

UST KERN: Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 04/25/2024
Date Data Arrived at EDR: 05/01/2024
Date Made Active in Reports: 05/08/2024
Number of Days to Update: 7

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA KINGS: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 12/03/2020
Date Data Arrived at EDR: 01/26/2021
Date Made Active in Reports: 04/14/2021
Number of Days to Update: 78

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

LAKE COUNTY:

CUPA LAKE: CUPA Facility List
Cupa facility list

Date of Government Version: 07/26/2024
Date Data Arrived at EDR: 07/29/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 10

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 07/08/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA LASSEN: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/09/2020
Number of Days to Update: 80

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

LOS ANGELES COUNTY:

AOCONCERN: Key Areas of Concerns in Los Angeles County
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office. Date of Government Version: 3/30/2009 Exide Site area is a cleanup plan of lead-impacted soil surrounding the former Exide Facility as designated by the DTSC. Date of Government Version: 7/17/2017

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: N/A
Telephone: N/A
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: No Update Planned

HMS LOS ANGELES: HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 07/02/2024
Date Data Arrived at EDR: 07/08/2024
Date Made Active in Reports: 07/10/2024
Number of Days to Update: 2

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Semi-Annually

LF LOS ANGELES: List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/08/2024
Date Data Arrived at EDR: 04/09/2024
Date Made Active in Reports: 07/08/2024
Number of Days to Update: 90

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 07/09/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LF LOS ANGELES CITY: City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 12/31/2022
Date Data Arrived at EDR: 01/12/2023
Date Made Active in Reports: 03/29/2023
Number of Days to Update: 76

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 07/03/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

LOS ANGELES AST: Active & Inactive AST Inventory
A listing of active & inactive above ground petroleum storage tank site locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2019
Date Data Arrived at EDR: 06/25/2019
Date Made Active in Reports: 08/22/2019
Number of Days to Update: 58

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

LOS ANGELES CO LF METHANE: Methane Producing Landfills
This data was created on April 30, 2012 to represent known disposal sites in Los Angeles County that may produce and emanate methane gas. The shapefile contains disposal sites within Los Angeles County that once accepted degradable refuse material. Information used to create this data was extracted from a landfill survey performed by County Engineers (Major Waste System Map, 1973) as well as historical records from CalRecycle, Regional Water Quality Control Board, and Los Angeles County Department of Public Health

Date of Government Version: 04/13/2023
Date Data Arrived at EDR: 07/13/2023
Date Made Active in Reports: 09/27/2023
Number of Days to Update: 76

Source: Los Angeles County Department of Public Works
Telephone: 626-458-6973
Last EDR Contact: 07/09/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: No Update Planned

LOS ANGELES HM: Active & Inactive Hazardous Materials Inventory
A listing of active & inactive hazardous materials facility locations, located in the City of Los Angeles.

Date of Government Version: 06/01/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/10/2024
Number of Days to Update: 85

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

LOS ANGELES UST: Active & Inactive UST Inventory
A listing of active & inactive underground storage tank site locations and underground storage tank historical sites, located in the City of Los Angeles.

Date of Government Version: 06/01/2024
Date Data Arrived at EDR: 06/17/2024
Date Made Active in Reports: 09/10/2024
Number of Days to Update: 85

Source: Los Angeles Fire Department
Telephone: 213-978-3800
Last EDR Contact: 09/17/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

SITE MIT LOS ANGELES: Site Mitigation LA County List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 07/11/2023
Date Data Arrived at EDR: 10/17/2023
Date Made Active in Reports: 01/09/2024
Number of Days to Update: 84

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 07/16/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Annually

UST EL SEGUNDO: City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 07/03/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: No Update Planned

UST LONG BEACH: City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 04/22/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/27/2019
Number of Days to Update: 65

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

UST TORRANCE: City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 04/16/2024
Date Data Arrived at EDR: 04/17/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 86

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 07/12/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA MADERA: CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 08/12/2020
Date Made Active in Reports: 10/23/2020
Number of Days to Update: 72

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

MARIN COUNTY:

UST MARIN: Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 09/26/2018
Date Data Arrived at EDR: 10/04/2018
Date Made Active in Reports: 11/02/2018
Number of Days to Update: 29

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Semi-Annually

MENDOCINO COUNTY:

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 09/22/2021
Date Data Arrived at EDR: 11/18/2021
Date Made Active in Reports: 11/22/2021
Number of Days to Update: 4

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Annually

MERCED COUNTY:

CUPA MERCED: CUPA Facility List
CUPA facility list.

Date of Government Version: 11/15/2023
Date Data Arrived at EDR: 11/20/2023
Date Made Active in Reports: 02/15/2024
Number of Days to Update: 87

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 07/17/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

MONO COUNTY:

CUPA MONO: CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2021
Date Data Arrived at EDR: 03/02/2021
Date Made Active in Reports: 05/19/2021
Number of Days to Update: 78

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA MONTEREY: CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 10/04/2021
Date Data Arrived at EDR: 10/06/2021
Date Made Active in Reports: 12/29/2021
Number of Days to Update: 84

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Varies

NAPA COUNTY:

LUST NAPA: Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: No Update Planned

UST NAPA: Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 09/05/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 10/31/2019
Number of Days to Update: 52

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA NEVADA: CUPA Facility List
CUPA facility list.

Date of Government Version: 04/23/2024
Date Data Arrived at EDR: 04/25/2024
Date Made Active in Reports: 06/26/2024
Number of Days to Update: 62

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

ORANGE COUNTY:

IND_SITE ORANGE: List of Industrial Site Cleanups Orange County
Petroleum and non-petroleum spills.

Date of Government Version: 02/02/2024
Date Data Arrived at EDR: 03/13/2024
Date Made Active in Reports: 06/04/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/30/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Annually

LUST ORANGE: List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 02/22/2024
Date Data Arrived at EDR: 03/13/2024
Date Made Active in Reports: 06/04/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/30/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Quarterly

UST ORANGE: List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/22/2024
Date Data Arrived at EDR: 03/13/2024
Date Made Active in Reports: 06/04/2024
Number of Days to Update: 83

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 07/30/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Quarterly

PLACER COUNTY:

MS PLACER: Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 05/22/2024
Date Data Arrived at EDR: 05/23/2024
Date Made Active in Reports: 08/19/2024
Number of Days to Update: 88

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA PLUMAS: CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 06/26/2019
Number of Days to Update: 64

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

RIVERSIDE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

LUST RIVERSIDE: Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 06/11/2024
Date Data Arrived at EDR: 06/12/2024
Date Made Active in Reports: 06/27/2024
Number of Days to Update: 15

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Quarterly

UST RIVERSIDE: Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 06/11/2024
Date Data Arrived at EDR: 06/12/2024
Date Made Active in Reports: 06/27/2024
Number of Days to Update: 15

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

CS SACRAMENTO: Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/21/2022
Date Made Active in Reports: 03/16/2023
Number of Days to Update: 85

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 06/24/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Quarterly

ML SACRAMENTO: Master Hazardous Materials Facility List
Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/07/2022
Date Data Arrived at EDR: 12/09/2022
Date Made Active in Reports: 03/01/2023
Number of Days to Update: 82

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 06/24/2024
Next Scheduled EDR Contact: 10/07/2024
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA SAN BENITO: CUPA Facility List
Cupa facility list

Date of Government Version: 07/31/2024
Date Data Arrived at EDR: 08/01/2024
Date Made Active in Reports: 08/07/2024
Number of Days to Update: 6

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

PERMITS SAN BERNARDINO: Hazardous Material Permits
This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 08/13/2024
Date Data Arrived at EDR: 08/14/2024
Date Made Active in Reports: 08/20/2024
Number of Days to Update: 6

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

HMMD SAN DIEGO: Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 05/16/2024
Date Data Arrived at EDR: 05/22/2024
Date Made Active in Reports: 05/24/2024
Number of Days to Update: 2

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 08/22/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Quarterly

LF SAN DIEGO: Solid Waste Facilities

San Diego County Solid Waste Facilities.

Date of Government Version: 10/01/2023
Date Data Arrived at EDR: 01/31/2024
Date Made Active in Reports: 04/17/2024
Number of Days to Update: 77

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

SAN DIEGO CO LOP: Local Oversight Program Listing

A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 07/22/2021
Date Data Arrived at EDR: 10/19/2021
Date Made Active in Reports: 01/13/2022
Number of Days to Update: 86

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

SAN DIEGO CO SAM: Environmental Case Listing

The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

CUPA SAN FRANCISCO CO: CUPA Facility Listing

Cupa facilities

Date of Government Version: 04/29/2024
Date Data Arrived at EDR: 04/30/2024
Date Made Active in Reports: 07/23/2024
Number of Days to Update: 84

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

LUST SAN FRANCISCO: Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 07/23/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: No Update Planned

UST SAN FRANCISCO: Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 04/29/2024
Date Data Arrived at EDR: 04/30/2024
Date Made Active in Reports: 07/23/2024
Number of Days to Update: 84

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Quarterly

SAN FRANCISO COUNTY:

SAN FRANCISCO MAHER: Maher Ordinance Property Listing
a listing of properties that fall within a Maher Ordinance, for all of San Francisco

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 04/16/2024
Date Made Active in Reports: 07/15/2024
Number of Days to Update: 90

Source: San Francisco Planning
Telephone: 628-652-7483
Last EDR Contact: 07/16/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

SAN JOAQUIN COUNTY:

UST SAN JOAQUIN: San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 06/22/2018
Date Data Arrived at EDR: 06/26/2018
Date Made Active in Reports: 07/11/2018
Number of Days to Update: 15

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/23/2024
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA SAN LUIS OBISPO: CUPA Facility List
Cupa Facility List.

Date of Government Version: 05/13/2024
Date Data Arrived at EDR: 05/14/2024
Date Made Active in Reports: 08/08/2024
Number of Days to Update: 86

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

SAN MATEO COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

BI SAN MATEO: Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 02/20/2020
Date Data Arrived at EDR: 02/20/2020
Date Made Active in Reports: 04/24/2020
Number of Days to Update: 64

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 09/05/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Annually

LUST SAN MATEO: Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 05/29/2019
Number of Days to Update: 61

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 08/27/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA SANTA BARBARA: CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: No Update Planned

SANTA CLARA COUNTY:

CUPA SANTA CLARA: Cupa Facility List
Cupa facility list

Date of Government Version: 05/16/2024
Date Data Arrived at EDR: 05/16/2024
Date Made Active in Reports: 08/07/2024
Number of Days to Update: 83

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

HIST LUST SANTA CLARA: HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LUST SANTA CLARA: LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 08/13/2024
Next Scheduled EDR Contact: 12/02/2024
Data Release Frequency: No Update Planned

SANTA CRUZ COUNTY:

CUPA SANTA CRUZ: CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

SITE MIT SANTA CRUZ: Site Mitigation Santa Cruz County List
Sites may become contaminated with toxic chemicals through illegal dumping or disposal, from leaking underground storage tanks, or through industrial or commercial activities.The goal of the site mitigation program is to protect the public health and the environment while facilitating completion of contaminated site clean-up projects in a timely manner.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 06/23/2023
Date Made Active in Reports: 07/13/2023
Number of Days to Update: 20

Source: Santa Cruz Environmental Health Services
Telephone: 831-454-2761
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA SHASTA: CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 08/07/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Varies

SOLANO COUNTY:

LUST SOLANO: Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 06/04/2019
Date Data Arrived at EDR: 06/06/2019
Date Made Active in Reports: 08/13/2019
Number of Days to Update: 68

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Quarterly

UST SOLANO: Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 09/15/2021
Date Data Arrived at EDR: 09/16/2021
Date Made Active in Reports: 12/09/2021
Number of Days to Update: 84

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Quarterly

SONOMA COUNTY:

CUPA SONOMA: Cupa Facility List
Cupa Facility list

Date of Government Version: 07/02/2021
Date Data Arrived at EDR: 07/06/2021
Date Made Active in Reports: 07/14/2021
Number of Days to Update: 8

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Varies

LUST SONOMA: Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 06/30/2021
Date Data Arrived at EDR: 06/30/2021
Date Made Active in Reports: 09/24/2021
Number of Days to Update: 86

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 09/10/2024
Next Scheduled EDR Contact: 12/30/2024
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA STANISLAUS: CUPA Facility List
Cupa facility list

Date of Government Version: 02/08/2022
Date Data Arrived at EDR: 02/10/2022
Date Made Active in Reports: 05/04/2022
Number of Days to Update: 83

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 07/03/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Varies

SUTTER COUNTY:

UST SUTTER: Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 04/12/2024
Date Data Arrived at EDR: 06/05/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 86

Source: Sutter County Environmental Health Services
Telephone: 530-822-7500
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 12/09/2024
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA TEHAMA: CUPA Facility List
Cupa facilities

Date of Government Version: 12/05/2023
Date Data Arrived at EDR: 02/01/2024
Date Made Active in Reports: 02/28/2024
Number of Days to Update: 27

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 08/20/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA TRINITY: CUPA Facility List
Cupa facility list

Date of Government Version: 04/15/2024
Date Data Arrived at EDR: 04/17/2024
Date Made Active in Reports: 07/12/2024
Number of Days to Update: 86

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

TULARE COUNTY:

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CUPA TULARE: CUPA Facility List
Cupa program facilities

Date of Government Version: 10/07/2022
Date Data Arrived at EDR: 10/07/2022
Date Made Active in Reports: 12/21/2022
Number of Days to Update: 75

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 07/24/2024
Next Scheduled EDR Contact: 11/11/2024
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA TUOLUMNE: CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 07/10/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Varies

VENTURA COUNTY:

BWT VENTURA: Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 07/02/2024
Date Data Arrived at EDR: 07/17/2024
Date Made Active in Reports: 07/23/2024
Number of Days to Update: 6

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/15/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Quarterly

LF VENTURA: Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: No Update Planned

LUST VENTURA: Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 07/31/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: No Update Planned

MED WASTE VENTURA: Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 07/02/2024
Date Data Arrived at EDR: 07/18/2024
Date Made Active in Reports: 07/23/2024
Number of Days to Update: 5

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 07/15/2024
Next Scheduled EDR Contact: 10/28/2024
Data Release Frequency: Quarterly

UST VENTURA: Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 05/28/2024
Date Data Arrived at EDR: 06/04/2024
Date Made Active in Reports: 08/30/2024
Number of Days to Update: 87

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 09/04/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Quarterly

YOLO COUNTY:

UST YOLO: Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 03/22/2024
Date Data Arrived at EDR: 04/04/2024
Date Made Active in Reports: 06/27/2024
Number of Days to Update: 84

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 09/18/2024
Next Scheduled EDR Contact: 01/06/2025
Data Release Frequency: Annually

YUBA COUNTY:

CUPA YUBA: CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 04/19/2024
Date Data Arrived at EDR: 04/23/2024
Date Made Active in Reports: 07/15/2024
Number of Days to Update: 83

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 07/18/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 05/05/2024
Date Data Arrived at EDR: 05/07/2024
Date Made Active in Reports: 08/01/2024
Number of Days to Update: 86

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 08/06/2024
Next Scheduled EDR Contact: 11/18/2024
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 06/26/2024
Next Scheduled EDR Contact: 10/14/2024
Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 07/25/2024
Next Scheduled EDR Contact: 11/04/2024
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 07/03/2024
Next Scheduled EDR Contact: 10/21/2024
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 11/30/2021
Date Made Active in Reports: 02/18/2022
Number of Days to Update: 80

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 08/08/2024
Next Scheduled EDR Contact: 11/26/2024
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 08/28/2024
Next Scheduled EDR Contact: 12/16/2024
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.
Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

BRANDT ROAD BRIDGE
BRANDT ROAD BRIDGE
CALIPATRIA, CA 92233

TARGET PROPERTY COORDINATES

Latitude (North):	33.118042 - 33° 7' 4.95"
Longitude (West):	115.562608 - 115° 33' 45.39"
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	634104.8
UTM Y (Meters):	3665100.8
Elevation:	212 ft. below sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	50004339 WESTMORLAND EAST, CA
Version Date:	2021
North Map:	50004262 NILAND, CA
Version Date:	2021

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

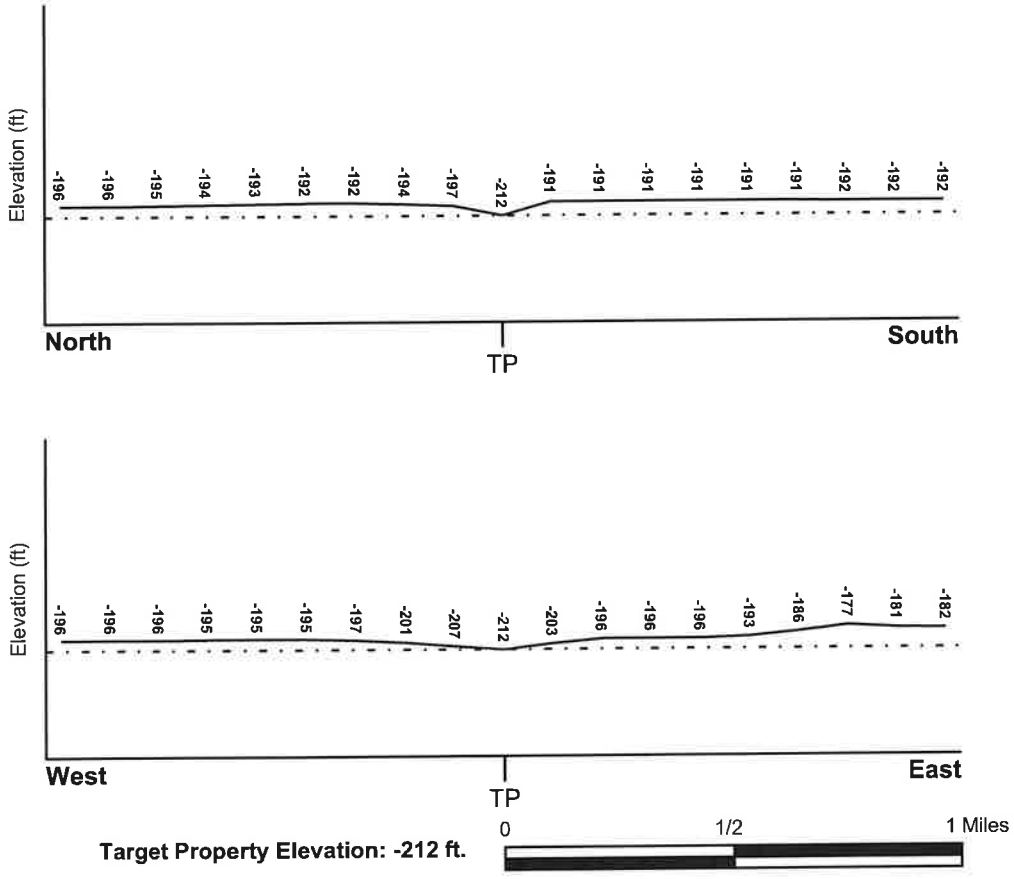
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General West

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06025C1025C	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06025C0725C	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
WESTMORLAND	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site-specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

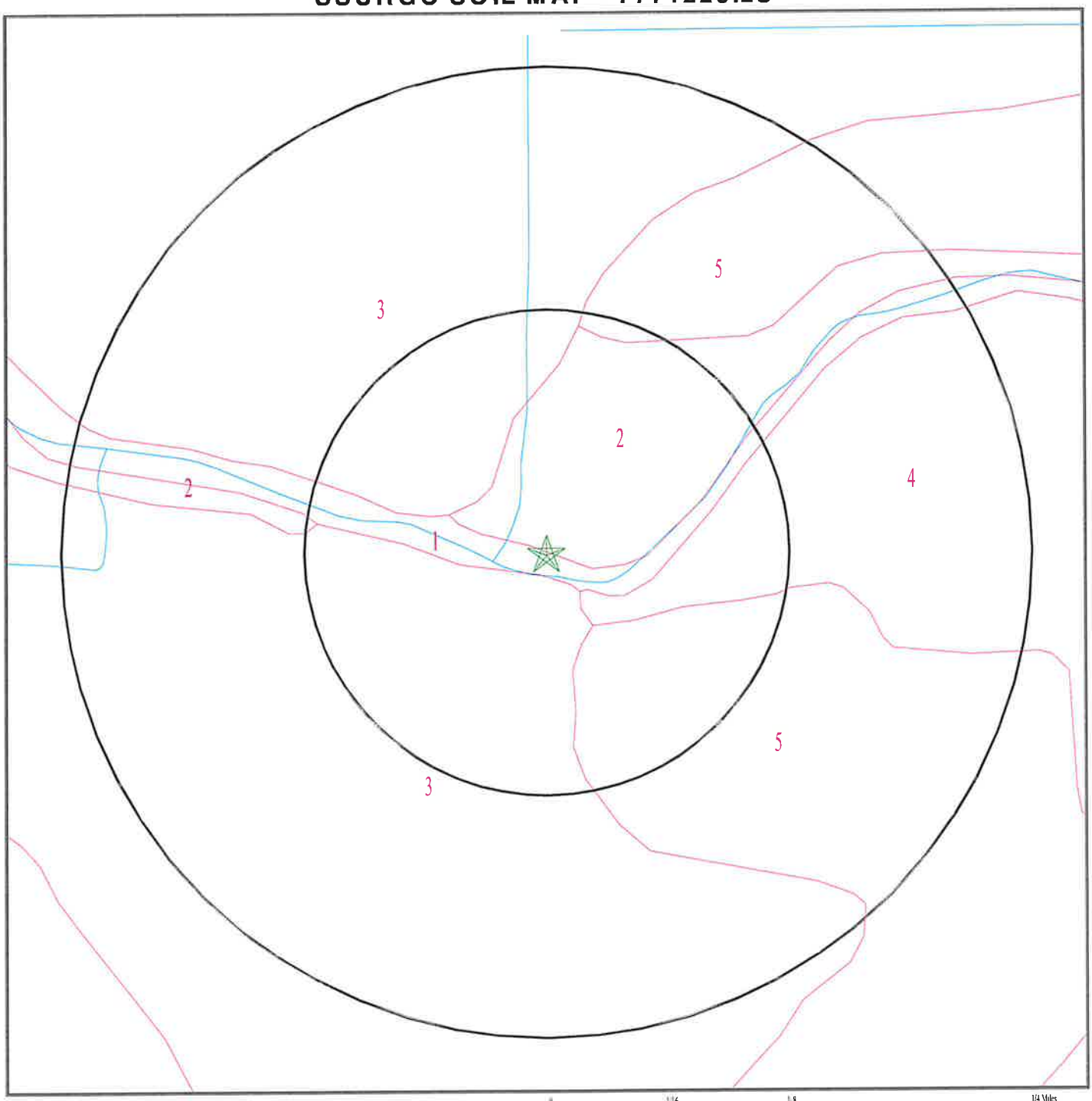
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 7771229.2s



★ Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Brandt Road Bridge	CLIENT:	Kleinfelder, Inc.
ADDRESS:	Brandt Road Bridge Calipatria CA 92233	CONTACT:	Stefan Birardi
		INQUIRY #:	7771229.2s
LAT/LONG:	33.118042 / 115.562608	DATE:	September 23, 2024 1:09 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name:	Water
Soil Surface Texture:	
Hydrologic Group:	Not reported
Soil Drainage Class:	
Hydric Status: Not hydric	
Corrosion Potential - Uncoated Steel:	Not Reported
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 0 inches

No Layer Information available.

Soil Map ID: 2

Soil Component Name:	Vint
Soil Surface Texture:	very fine sandy loam
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Moderately well drained
Hydric Status: Not hydric	
Corrosion Potential - Uncoated Steel:	High
Depth to Bedrock Min:	> 0 inches
Depth to Watertable Min:	> 122 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	very fine sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9
2	9 inches	40 inches	loamy fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9
3	40 inches	59 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.9

Soil Map ID: 3

Soil Component Name: Indio

Soil Surface Texture: loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	11 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 42 Min: 4	Max: 8.4 Min: 7.9
2	11 inches	72 inches	stratified loamy very fine sand to silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 42 Min: 4	Max: 8.4 Min: 7.9

Soil Map ID: 4

Soil Component Name: Holtville

Soil Surface Texture: silty clay

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	silty clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	16 inches	24 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
3	24 inches	35 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4
4	35 inches	59 inches	loamy very fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 42 Min: 14	Max: 8.4 Min: 7.4

Soil Map ID: 5

Soil Component Name: Vint

Soil Surface Texture: loamy very fine sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 122 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy very fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9
2	9 inches	59 inches	loamy fine sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: 8.4 Min: 7.9

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000130308	1/2 - 1 Mile SW
A2	USGS40000130305	1/2 - 1 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

STATE DATABASE WELL INFORMATION

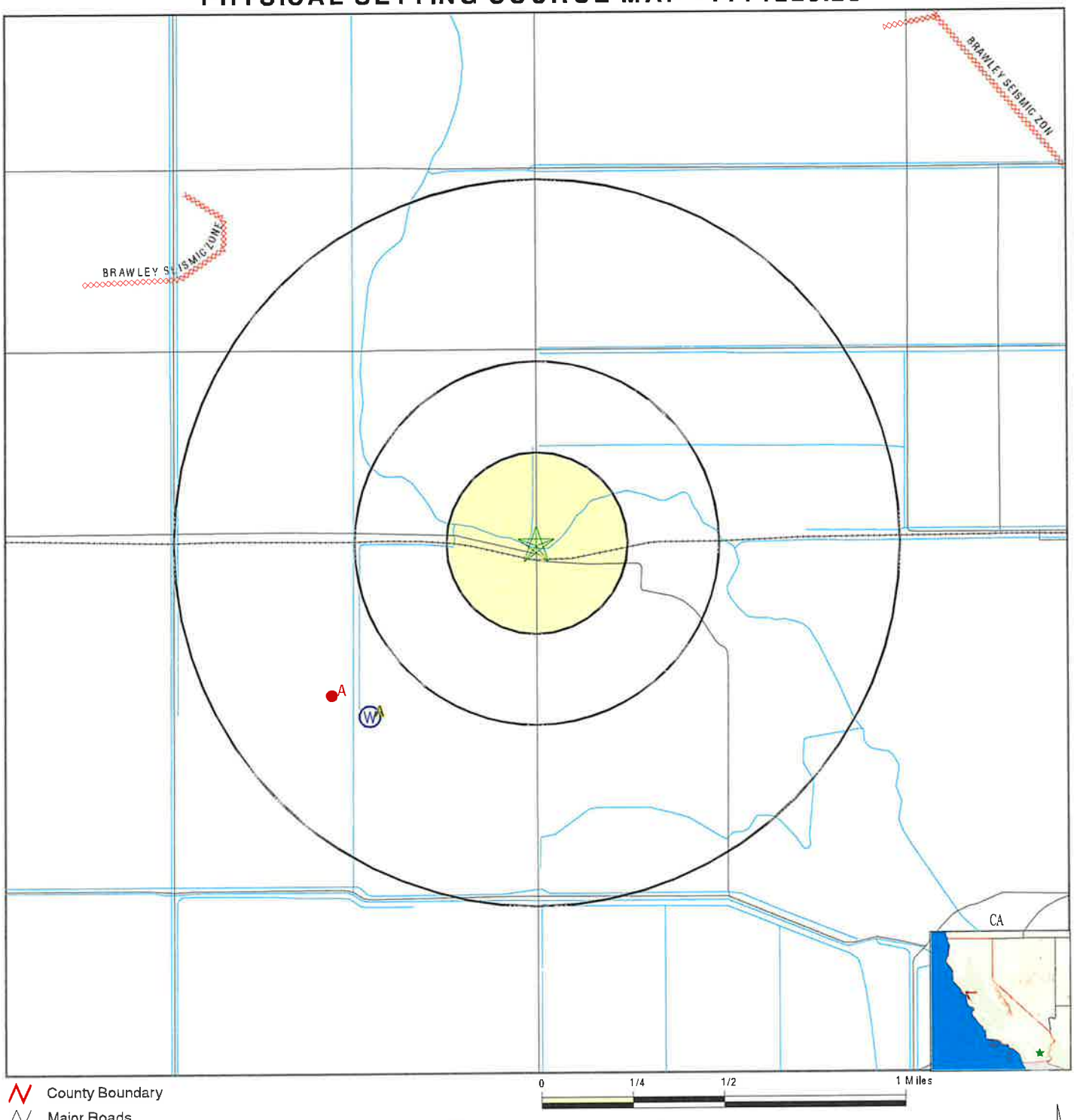
MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

OTHER STATE DATABASE INFORMATION

STATE OIL/GAS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	CAOG17000004727	1/2 - 1 Mile SW
A2	CAOG17000006850	1/2 - 1 Mile SW

PHYSICAL SETTING SOURCE MAP - 7771229.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- HD Closest Hydrogeological Data
- Oil, gas or related wells

No contour lines were detected within this map area.

SITE NAME: Brandt Road Bridge ADDRESS: Brandt Road Bridge Calipatria CA 92233 LAT/LONG: 33.118042 / 115.562608	CLIENT: Kleinfelder, Inc. CONTACT: Stefan Birardi INQUIRY #: 7771229.2s DATE: September 23, 2024 1:09 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation

	Database	EDR ID Number
A1 **SW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000130308**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	012S013E24G001S	Type:	Well
Description:	Not Reported	HUC:	18100200
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

A2 **SW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000130305**

Organization ID:	USGS-CA		
Organization Name:	USGS California Water Science Center		
Monitor Location:	012S013E24K001S	Type:	Well
Description:	Not Reported	HUC:	18100200
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Basin and Range basin-fill aquifers		
Formation Type:	Not Reported	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance

Database EDR ID Number

A1
SW
1/2 - 1 Mile

OIL_GAS **CAOG17000004727**

OIL_GAS:

API #:	0402500004	Well #:	1
Well Type:	Dry Hole	Well Status:	Plugged
Lease Name:	Biff	Well Design:	Biff 1
Operator ID:	07704	Operator Name:	Sardi Oil Co.
Field Name:	Any Field	Area Name:	Any Area
Place:	Imperial County	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		
Well Record Request URL:	https://filerequest.conservation.ca.gov/WellRecord?api=02500004		

A2
SW
1/2 - 1 Mile

OIL_GAS **CAOG17000006850**

OIL_GAS:

API #:	0402500032	Well #:	1
Well Type:	Dry Hole	Well Status:	Plugged
Lease Name:	Sardi	Well Design:	Sardi 1
Operator ID:	07704	Operator Name:	Sardi Oil Co.
Field Name:	Any Field	Area Name:	Any Area
Place:	Imperial County	GIS Source:	hud
Confidential Well:	N	Directionally Drilled:	N
Spud Date:	Not Reported		
Well Record Request URL:	https://filerequest.conservation.ca.gov/WellRecord?api=02500032		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for IMPERIAL County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for IMPERIAL COUNTY, CA

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.450 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish and Wildlife
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

OTHER STATE DATABASE INFORMATION

Groundwater Ambient Monitoring & Assessment Program
State Water Resources Control Board
Telephone: 916-341-5577
The GAMA Program is Californias comprehensive groundwater quality monitoring program. GAMA collects data by testing the untreated, raw water in different types of wells for naturally-occurring and man-made chemicals. The GAMA data includes Domestic, Monitoring and Municipal well types from the following sources, Department of Water Resources, Department of Heath Services, EDF, Agricultural Lands, Lawrence Livermore National Laboratory, Department of Pesticide Regulation, United States Geological Survey, Groundwater Ambient Monitoring and Assessment Program and Local Groundwater Projects.

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

Geothermal Wells Listing
Department of Conservation
Telephone: 916-445-9686
Geothermal well means a well constructed to extract or return water to the ground after it has been used for heating or cooling purposes. Geothermal wells in California (except for wells on federal leases which are administered by the Bureau of Land Management) are permitted, drilled, operated, and permanently sealed and closed (plugged and abandoned) under requirements and procedures administered by the Geothermal Section of the Department of Conservations Geologic Energy Management Division (CalGEM, formerly DOGGR).

California Oil and Gas Well Locations
Source: Dept of Conservation, Geologic Energy Management Division
Telephone: 916-323-1779
Oil and Gas well locations in the state.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

California Earthquake Fault Lines
Source: California Division of Mines and Geology
The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

RADON

State Database: CA Radon
Source: Department of Public Health
Telephone: 916-210-8558
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX C
User Provided and Regulatory Agency Documentation

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Brandt Road Bridge
Brandt Road Bridge
Calipatria, CA 92233

Inquiry Number: 7771229.6
September 23, 2024

The EDR Property Tax Map Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

NO COVERAGE

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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National Flood Hazard Layer FIRMette

FEMA



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS
  - Without Base Flood Elevation (BFE) Zone A, V, A99
  - With BFE or Depth Zone AE, AO, AH, VE, AR
  - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
  - Future Conditions 1% Annual Chance Flood Hazard Zone X
  - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
  - Area with Flood Risk due to Levee Zone D
- OTHER AREAS
  - NO SCREEN Area of Minimal Flood Hazard Zone X
  - Effective LOMRs
  - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- OTHER FEATURES
  - 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
  - Coastal Transect
  - Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- MAP PANELS
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/22/2024 at 7:20 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



Powered by

Well Status & Type

0 0.4 0.8 mi

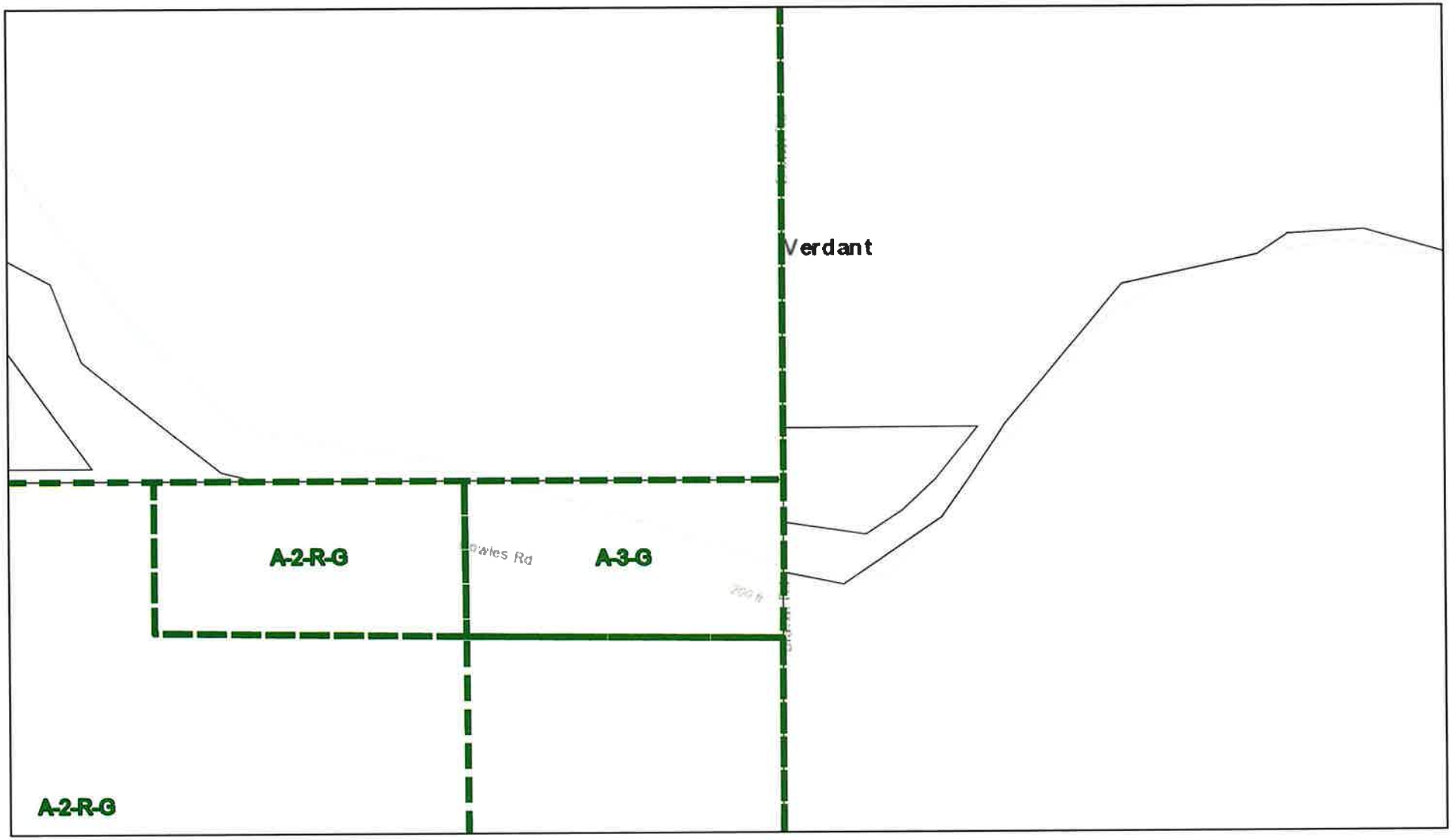
0 0.55 1.1 km

10/21/2024

Geologic Energy Management Division
715 P Street, MS 1803
Sacramento, CA 95814
Phone: (916) 445-9686
Email: calgem_webmaster@conservation.ca.gov
www.conservation.ca.gov/calgem

California Natural Resources Agency
Department of Conservation

Imperial County Zoning Map - Brandt Road Bridge



10/20/2024, 5:41:16 PM

Land Use Zoning

Assessor's Parcels

1:4,514

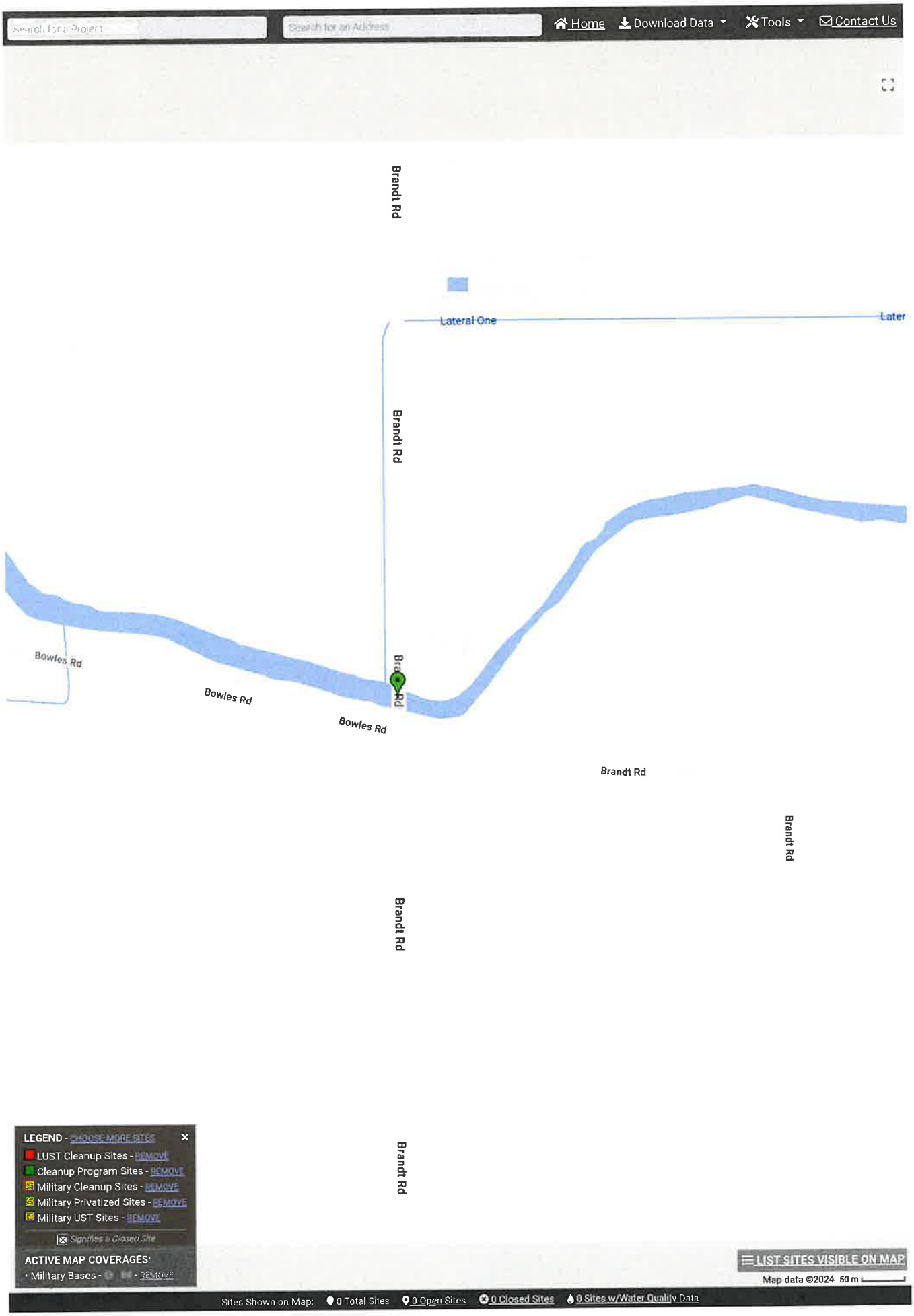
0 0.03 0.06 0.12 mi

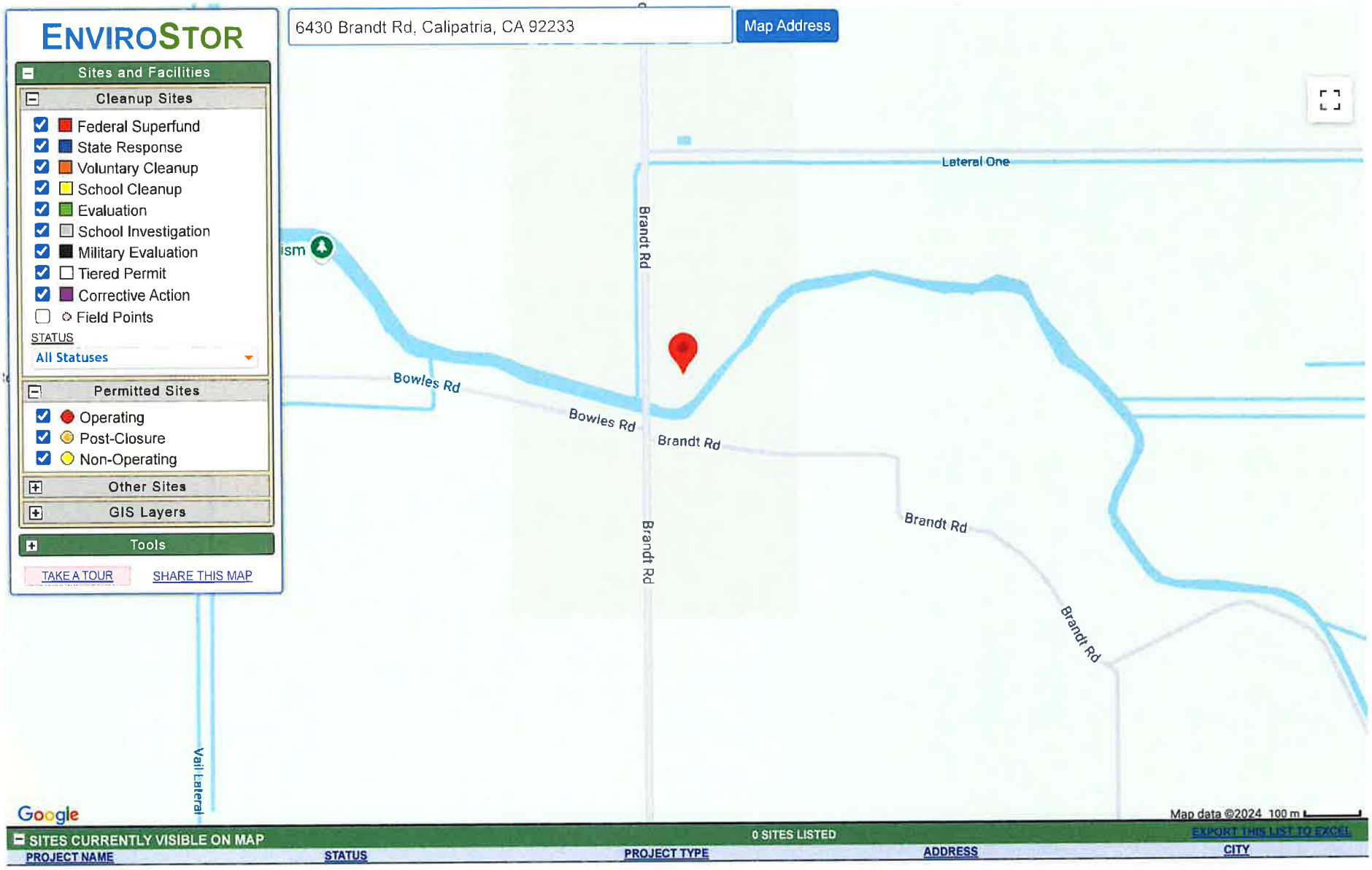
0 0.05 0.1 0.2 km

Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

Web AppBuilder for ArcGIS

Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA |


Search for a Project
Search for an Address
Home
Download Data
Tools
Contact Us
Brandt Rd
Lateral One
Later
Brandt Rd
Bowles Rd
Bowles Rd
Bowles Rd
Brandt Rd
Brandt Rd
Brandt Rd
Brandt Rd
LEGEND - CHOOSE MORE SITES
LUST Cleanup Sites - REMOVE
Cleanup Program Sites - REMOVE
Military Cleanup Sites - REMOVE
Military Privatized Sites - REMOVE
Military UST Sites - REMOVE
Signifies a Closed Site
ACTIVE MAP COVERAGES:
• Military Bases - REMOVE
LIST SITES VISIBLE ON MAP
Map data ©2024 50 m
Sites Shown on Map: 0 Total Sites 0 Open Sites 0 Closed Sites 0 Sites w/Water Quality Data


ENVIROSTOR
6430 Brandt Rd, Calipatria, CA 92233
Map Address
Sites and Facilities
Cleanup Sites
Federal Superfund
State Response
Voluntary Cleanup
School Cleanup
Evaluation
School Investigation
Military Evaluation
Tiered Permit
Corrective Action
Field Points
STATUS
All Statuses
Permitted Sites
Operating
Post-Closure
Non-Operating
Other Sites
GIS Layers
Tools
TAKE A TOUR
SHARE THIS MAP
Lateral One
Brandt Rd
Bowles Rd
Bowles Rd
Brandt Rd
Brandt Rd
Brandt Rd
Brandt Rd
Vail Lateral
Google
Map data ©2024 100 m
SITES CURRENTLY VISIBLE ON MAP
0 SITES LISTED
EXPORT THIS LIST TO EXCEL
PROJECT NAME
STATUS
PROJECT TYPE
ADDRESS
CITY

USEPA Cleanups Map



September 8, 2023

State Outlines

Sites

Brownfields Properties

RCRA Corrective Action

Superfund Non-NPL Sites

SiteBoundaries

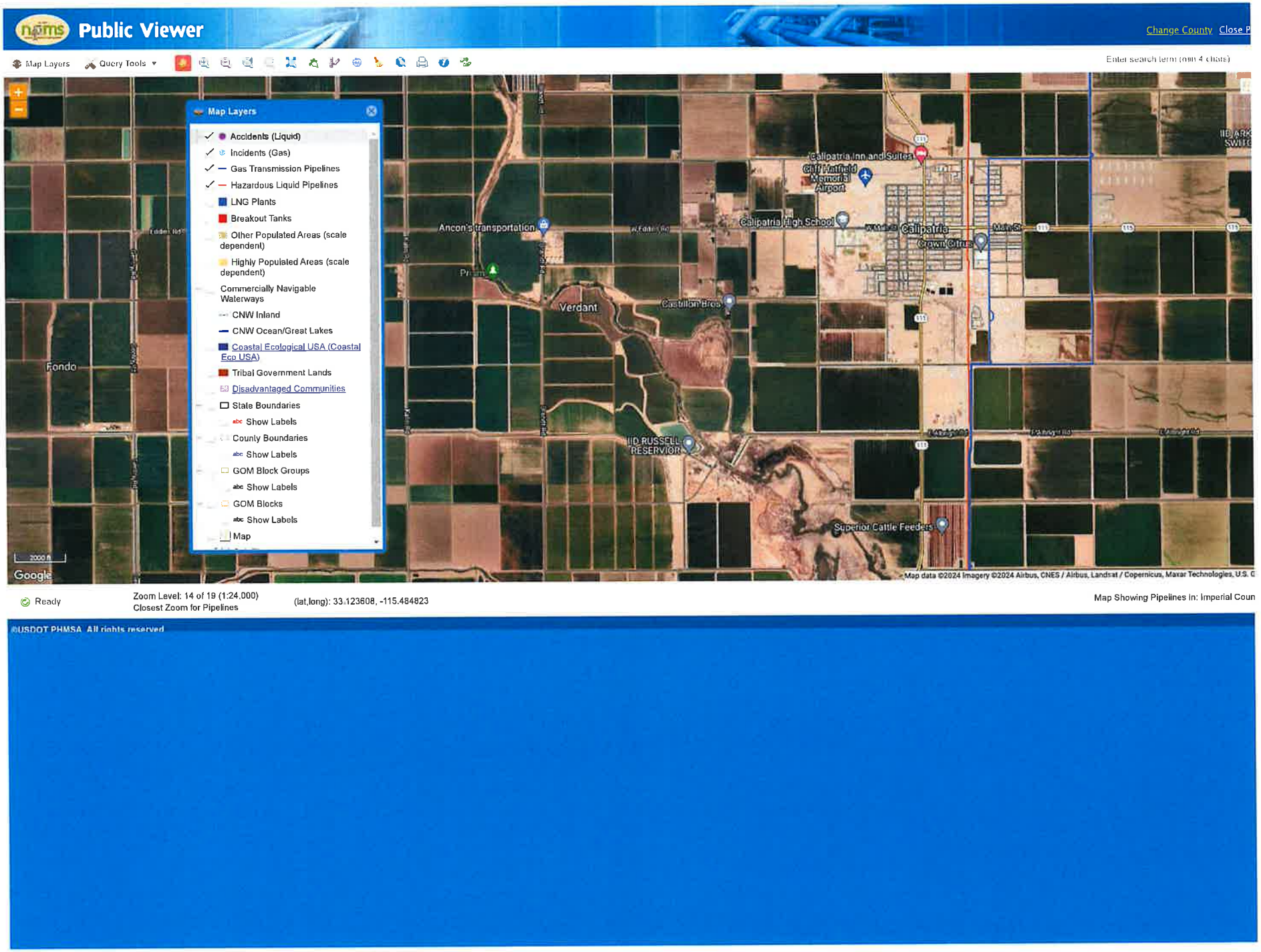
1:44,538

0 0.3 0.6 1.2 mi

0 0.5 1 2 km

County of Los Angeles, Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, NGA, EPA, USDA, U.S. Department of

Generated from: Cleanups in My Community: Date above is the date map



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APPENDIX D
Historical Research Documentation

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Brandt Road Bridge

Brandt Road Bridge

Calipatria, CA 92233

Inquiry Number: 7771229.3

September 23, 2024

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

09/23/24

Site Name:

Brandt Road Bridge
Brandt Road Bridge
Calipatria, CA 92233
EDR Inquiry # 7771229.3

Client Name:

Kleinfelder, Inc.
24411 Ridge Rte Dr Suite 225
Laguna Hills, CA 92653
Contact: Stefan Birardi

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 1F01-4381-80E5

PO # 25001840.001A

Project Brandt Road Bridge

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 1F01-4381-80E5

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✓ Library of Congress
- ✓ University Publications of America
- ✓ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Brandt Road Bridge
Brandt Road Bridge
Calipatria, CA 92233

Inquiry Number: 7771229.5
September 24, 2024

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

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Executive Summary

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City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available business directory data at approximately five year intervals.

RECORD SOURCES

The EDR City Directory Report accesses a variety of business directory sources, including Haines, InfoUSA, Polk, Cole, Bresser, and Stewart. Listings marked as EDR Digital Archive access Cole and InfoUSA records. The various directory sources enhance and complement each other to provide a more thorough and accurate report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2020	☑	☑	EDR Digital Archive
2017	☑	☑	Cole Information
2014	☑	☑	Cole Information
2010	☑	☑	Cole Information
2005	☑	☑	Cole Information
2000	☑	☑	Cole Information
1995	☑	☑	Cole Information
1992	☑	☑	Cole Information
1988	☑	☑	Haines Criss-Cross Directory
1972	☐	☐	POLK DIRECTORY CO
1967	☐	☐	POLK DIRECTORY CO
1963	☐	☐	POLK DIRECTORY CO
1959	☐	☐	POLK DIRECTORY CO

FINDINGS

TARGET PROPERTY STREET

Brandt Road Bridge
Calipatria, CA 92233

Year	CD Image	Source	
BRANDT RD			
2020	pg A1	EDR Digital Archive	
2017	pg A4	Cole Information	
2014	pg A7	Cole Information	
2010	pg A10	Cole Information	
2005	pg A13	Cole Information	
2000	pg A16	Cole Information	
1995	pg A19	Cole Information	
1992	pg A22	Cole Information	
1988	pg A25	Haines Criss-Cross Directory	
1972	-	POLK DIRECTORY CO	Street not listed in Source
1967	-	POLK DIRECTORY CO	Street not listed in Source
1963	-	POLK DIRECTORY CO	Street not listed in Source
1959	-	POLK DIRECTORY CO	Street not listed in Source

FINDINGS

CROSS STREETS

Year	CD Image	Source	
E BOWLES RD			
1988	pg. A26	Haines Criss-Cross Directory	
E BOWLES RD			
2020	pg. A2	EDR Digital Archive	
2017	pg. A5	Cole Information	
2014	pg. A8	Cole Information	
2010	pg. A11	Cole Information	
2005	pg. A14	Cole Information	
2000	pg. A17	Cole Information	
1995	pg. A20	Cole Information	
1992	pg. A23	Cole Information	
1972	-	POLK DIRECTORY CO	Street not listed in Source
1967	-	POLK DIRECTORY CO	Street not listed in Source
1963	-	POLK DIRECTORY CO	Street not listed in Source
1959	-	POLK DIRECTORY CO	Street not listed in Source
W BOWLES RD			
2020	pg. A3	EDR Digital Archive	
2017	pg. A6	Cole Information	
2014	pg. A9	Cole Information	
2010	pg. A12	Cole Information	
2005	pg. A15	Cole Information	
2000	pg. A18	Cole Information	
1995	pg. A21	Cole Information	
1992	pg. A24	Cole Information	
1988	pg. A27	Haines Criss-Cross Directory	
1972	-	POLK DIRECTORY CO	Street not listed in Source
1967	-	POLK DIRECTORY CO	Street not listed in Source

FINDINGS

Year	CD Image	Source	
1963	-	POLK DIRECTORY CO	Street not listed in Source
1959	-	POLK DIRECTORY CO	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

BRANDT RD 2020

6430	FERNANDO REGALADO
	HELEN FIFIELD
6496	ANCON MARINE
	ANCON TRANSPORTATION
	BLUE MOUNTAIN FARMS
	TIMCO HAY & STRAW SLS
7015	BRANDT CATTLE CO

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

E BOWLES RD 2020

400	FEROZAN SHAUBZADA
406	WATSON NATALIE
430	ANDREA MEDINA
	CAROLYN MEDINA
	RICHARD MEDINA

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

W BOWLES RD 2020

54	ROSIE FLORES
67	CARLOS MORENO
	CASTILLON BROS CO
	CLAUDIA CASTILLON
	MARK CASTILLON

Target Street	Cross Street	Source
✓	-	Cole Information

BRANDT RD 2017

6430	REGALADO, FERNANDO M
6496	ALLEN, TIM L
	ANCON MARINE
	BLUE MOUNTAIN FARMS
	TIMCO HAY & STRAW SLS
7005	FLORES, JONATHAN
7015	BRANDT CATTLE CO

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 2017

406	WATSON, NATALIE
430	MEDINA, ROMUALDO
904	WATTE, JAMES

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 2017

54	FLORES, ROSIE
67	CASTILLON BROS CO
	CASTILLON, MARK J

Target Street	Cross Street	Source
✓	-	Cole Information

BRANDT RD 2014

6430 REGALADO, FERNANDO M
6496 ANCON MARINE
BLUE MOUNTAIN FARMS
OCCUPANT UNKNOWN,
TIMCO HAY & STRAW SLS
7005 FLORES, CATALINA R
7015 BRANDT CATTLE CO

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 2014

406	SHAUBZADA, MOHAMMAD N
430	MEDINA, RICHARD A
904	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 2014

64	SOTO, DIANE R
67	CASTILLON BROS CO
	CASTILLON, MARK J
509	HAWKINS, EDWARD

Target Street	Cross Street	Source
✓	-	Cole Information

BRANDT RD 2010

6430	REGALADO, FERNANDO H
6490	ALLEN, TIM L
6496	BLUE MOUNTAIN FARMS
	CASTON TROY FARMS
	OCCUPANT UNKNOWN,
7005	FLORES, FRANKIE B
7015	BRANDT CATTLE CO

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 2010

406	SHAUBZADA, MOHAMMAD N
430	MEDINA, RICHARD A
904	WATTE, STEPHEN O

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 2010

54	FLORES, MICHELLE
67	CASTILLON BROS CO
	CASTILLON, MARK J
502	MAR VISTA FARMS INC
509	HAWKINS, EDWARD

Target Street	Cross Street	Source
✔	-	Cole Information

BRANDT RD 2005

6496	ALLEN, TIM L
	BLUE MOUNTAIN FARMS
	NORTHEND EQUIPMENT INC
	OCCUPANT UNKNOWN,
	TROY CASTON FARMS
7005	FLORES, FRANKIE V
7015	BRANDT CATTLE INC

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 2005

400	SHAUBZADA, MOHAMMAD
406	OCCUPANT UNKNOWN,
430	OCCUPANT UNKNOWN,
904	OCCUPANT UNKNOWN,

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 2005

67	CASTILLON, CLAUDIA
502	MARTINEZ, JOSE A
503	SAM, SABEUNG
506	NEELY, PAUL L
509	HAWKINS, EDWARD
707	NORTHEND EQUIPMENT INC

Target Street	Cross Street	Source
✓	-	Cole Information

BRANDT RD 2000

6430	RICHARDS, J A
6496	CASTON A H FARMS
	NORTHEND EQUIPMENT INCORPORATED OFFICE
7005	FLORES, FRANKIE
7015	BRANDT CATTLE COMPANY

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 2000

904	HATFIELD, KEITH WATTE, MARGERY L

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 2000

67	RUSSELL, S
707	NORTHEND EQUIPMENT INCORPORATED SHOP
1302	R & C WAREHOUSE
1311	MAR VISTA FARMS

Target Street	Cross Street	Source
✓	-	Cole Information

BRANDT RD 1995

6430	RICHARDS, JAMES A
6496	A H CASTON FARMS
	WEST FARM AIR
7005	FLORES, FRANKIE
7015	BRANDT CATTLE CO

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 1995

430	RICHARD A MEDINA CONSTRUCTION
904	HATFIELD, KEITH
	WATTE, MARGERY L

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 1995

67	RUSSELL, MILAS G
	SAM RUSSELL HAY CONTRACTING
1302	ARDVARK FARM
1311	MAR VISTA FARMS

Target Street	Cross Street	Source
✔	-	Cole Information

BRANDT RD 1992

6430	RICHARDS, JAMES A
6496	CASTON A H FARMS
	VALLEY PROP INC
7005	FLORES, FRANKIE
7015	BRANDT CATTLE CO

Target Street	Cross Street	Source
-	✓	Cole Information

E BOWLES RD 1992

904	HATFIELD, KEITH
	WATTE, OSCAR P

Target Street	Cross Street	Source
-	✓	Cole Information

W BOWLES RD 1992

54	NUNEZ, G
67	RUSSELL SAM
	RUSSELL, MILAS G
707	CASTON A H FARMS
1302	ARDVARK FARM SHOP
	R&C WAREHOUSE
1311	MAR VISTA FARMS

Target Street	Cross Street	Source
✔	-	Haines Criss-Cross Directory

BRANDT RD 1988

BRANDT RD 92233 CALIPATRIA

6430	RICHARDS J A	348-5655
	RICHARDS Mildred	348-5655
6496	★CASTON A H FARMS	348-5057
7005	FLORES Frankie	348-2418
7015	★BRANDT CATTLE CO	348-2295
★	2 BUS 3 RES	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

E BOWLES RD 1988

BOWLES RD E 92233 CALIPATRIA

904	HATFIELD Keith	348-5243
	WATTE Oscar P	348-2357
★	0 BUS 2 RES	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

W BOWLES RD 1988

BOWLES RD W 92233 CALIPATRIA

54	NUNEZ Gusberto	348-5007
67	RUSSELL Milas G	348-5641
	TURNER Debbie	348-5776
	TURNER Jim	348-5776
502	TRUJILLO Martin	348-2428
703	HERNANDEZ Ana Maria	348-5359
707	★CASTON A H FARMS	348-5335
1302	★ARDVARK FARM SHOP	348-5375
	★R&C WAREHOUSE	348-5309
1311	★MAR VISTA FARMS	348-5346
1315	HERNANDEZ Felix	348-5647
★	4 BUS 7 RES	

Brandt Road Bridge

Brandt Road Bridge

Calipatria, CA 92233

Inquiry Number: 7771229.4

September 23, 2024

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

09/23/24

Site Name:	Client Name:
Brandt Road Bridge	Kleinfelder, Inc.
Brandt Road Bridge	24411 Ridge Rte Dr Suite 225
Calipatria, CA 92233	Laguna Hills, CA 92653
EDR Inquiry # 7771229.4	Contact: Stefan Birardi

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Kleinfelder, Inc. were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# 25001840.001A

Project: Brandt Road Bridge

Coordinates:

Latitude:	33.118042 33° 7' 5" North
Longitude:	-115.562608 -115° 33' 45" West
UTM Zone:	Zone 11 North
UTM X Meters:	634101.80
UTM Y Meters:	3665292.39
Elevation:	-211.02' below sea level

Maps Provided:

2021	1945
2018	1943
2015	
2012	
1995	
1976	
1956	
1947	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2021 Source Sheets



Westmorland East
2021
7.5-minute, 24000



Niland
2021
7.5-minute, 24000

2018 Source Sheets



Westmorland East
2018
7.5-minute, 24000



Niland
2018
7.5-minute, 24000

2015 Source Sheets

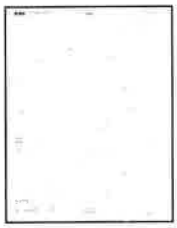


Westmorland East
2015
7.5-minute, 24000

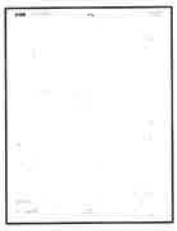


Niland
2015
7.5-minute, 24000

2012 Source Sheets



Westmorland East
2012
7.5-minute, 24000



Niland
2012
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1995 Source Sheets



Niland
1995
7.5-minute, 24000
Aerial Photo Revised 1992



Westmorland East
1995
7.5-minute, 24000
Aerial Photo Revised 1992

1976 Source Sheets

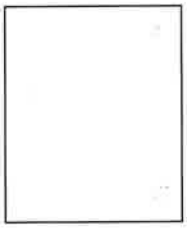


Niland
1976
7.5-minute, 24000
Aerial Photo Revised 1953



Westmorland
1976
7.5-minute, 24000

1956 Source Sheets



Niland
1956
7.5-minute, 24000
Aerial Photo Revised 1953



Westmorland
1956
7.5-minute, 24000

1947 Source Sheets



CALIPATRIA
1947
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1945 Source Sheets



Calipatria
1945
15-minute, 62500
Aerial Photo Revised 1940

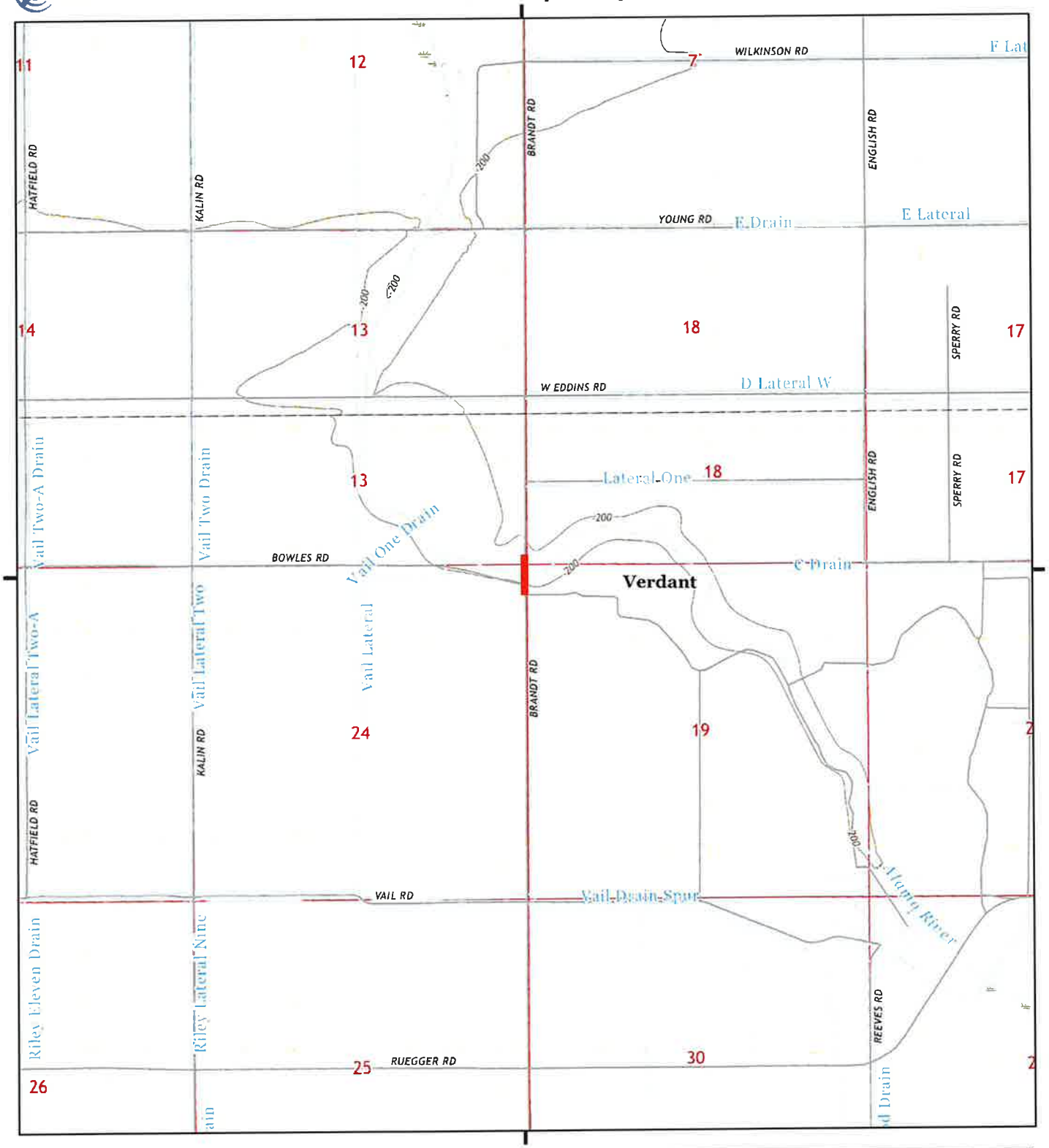
1943 Source Sheets



CALIPATRIA
1943
15-minute, 62500

Historical Topo Map

2021



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

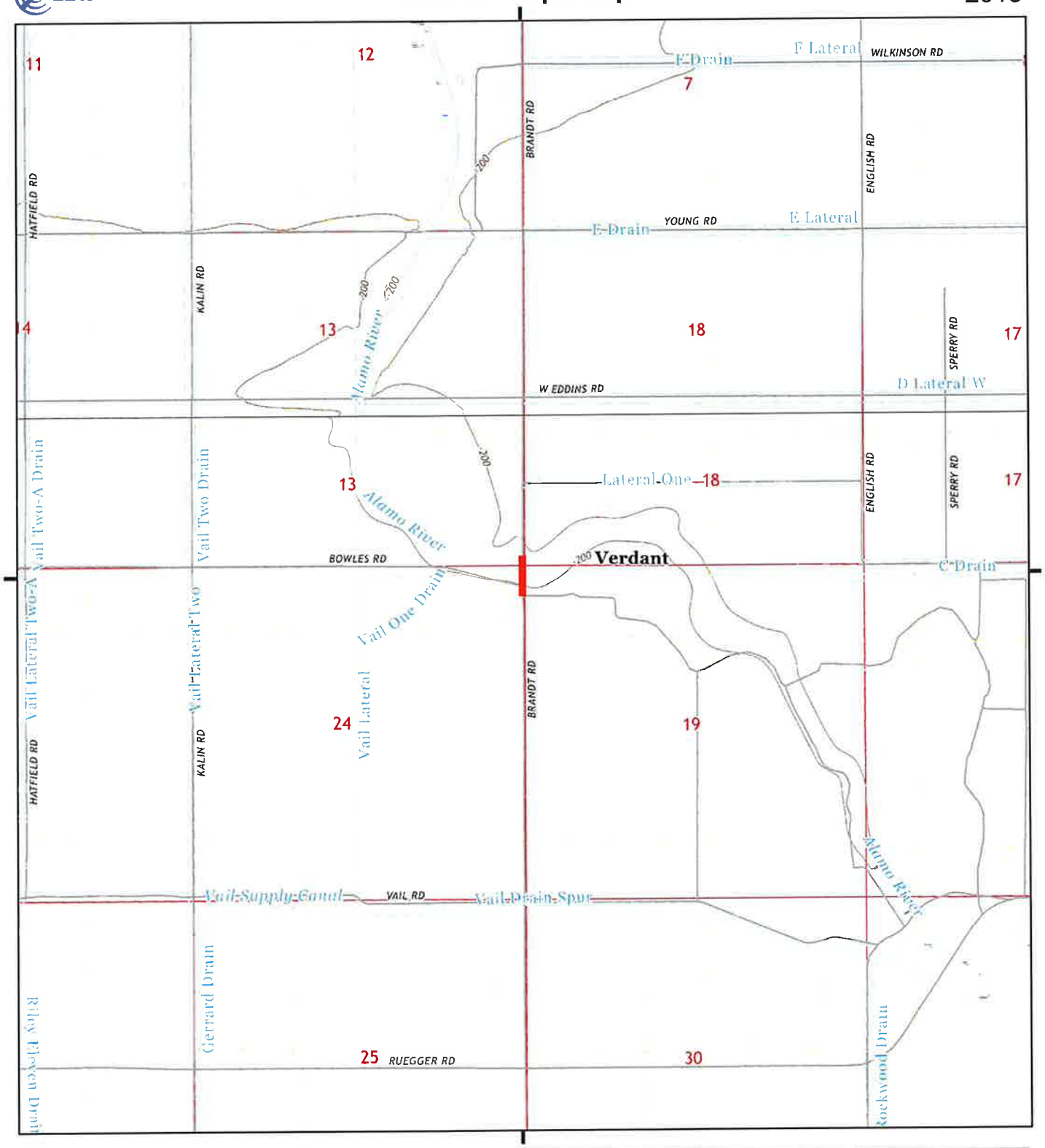
TP, Westmorland East, 2021, 7.5-minute
N, Niland, 2021, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

2018



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

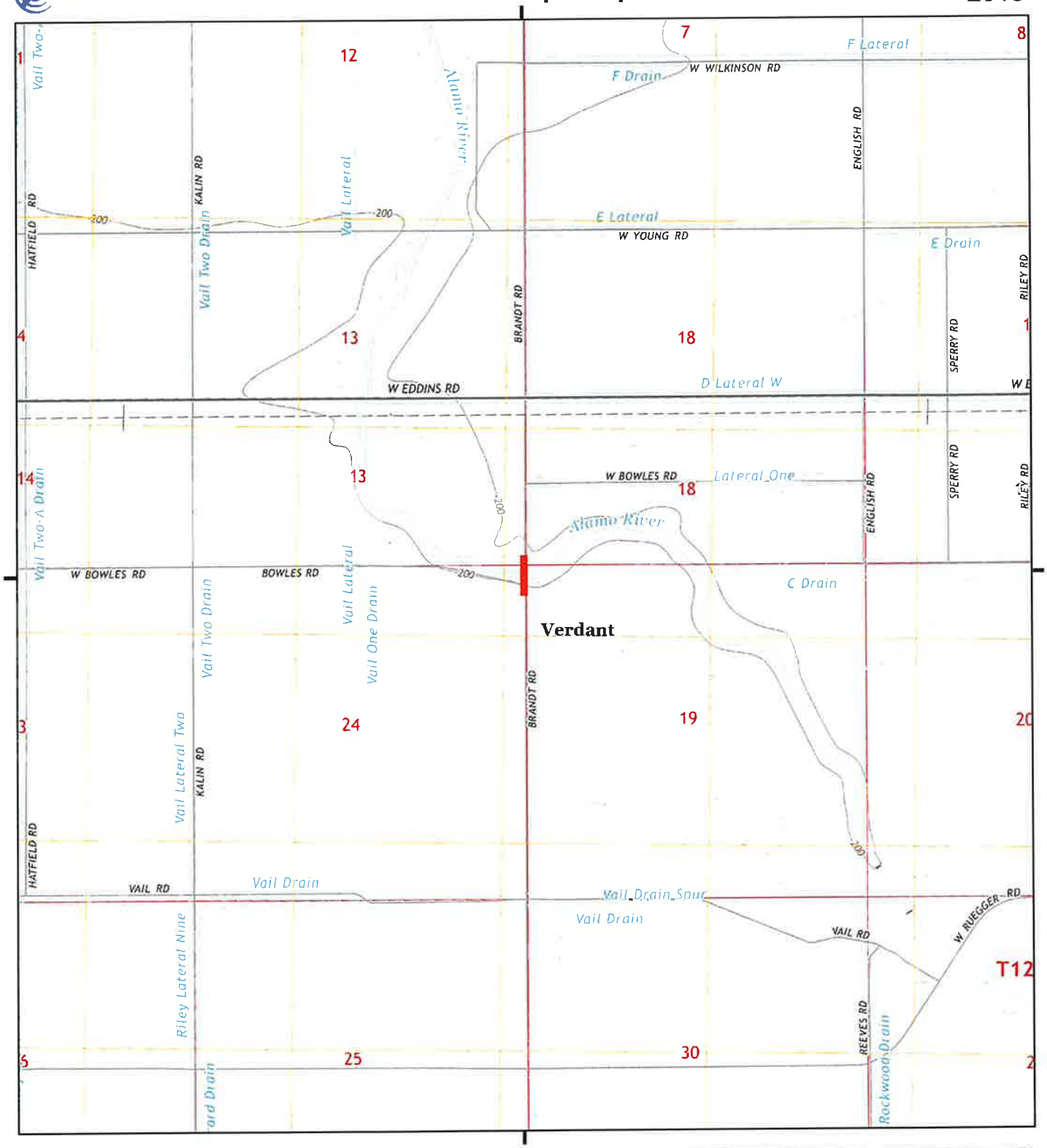
TP, Westmorland East, 2018, 7.5-minute
N, Niland, 2018, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

2015



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Westmorland East, 2015, 7.5-minute
N, Niland, 2015, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

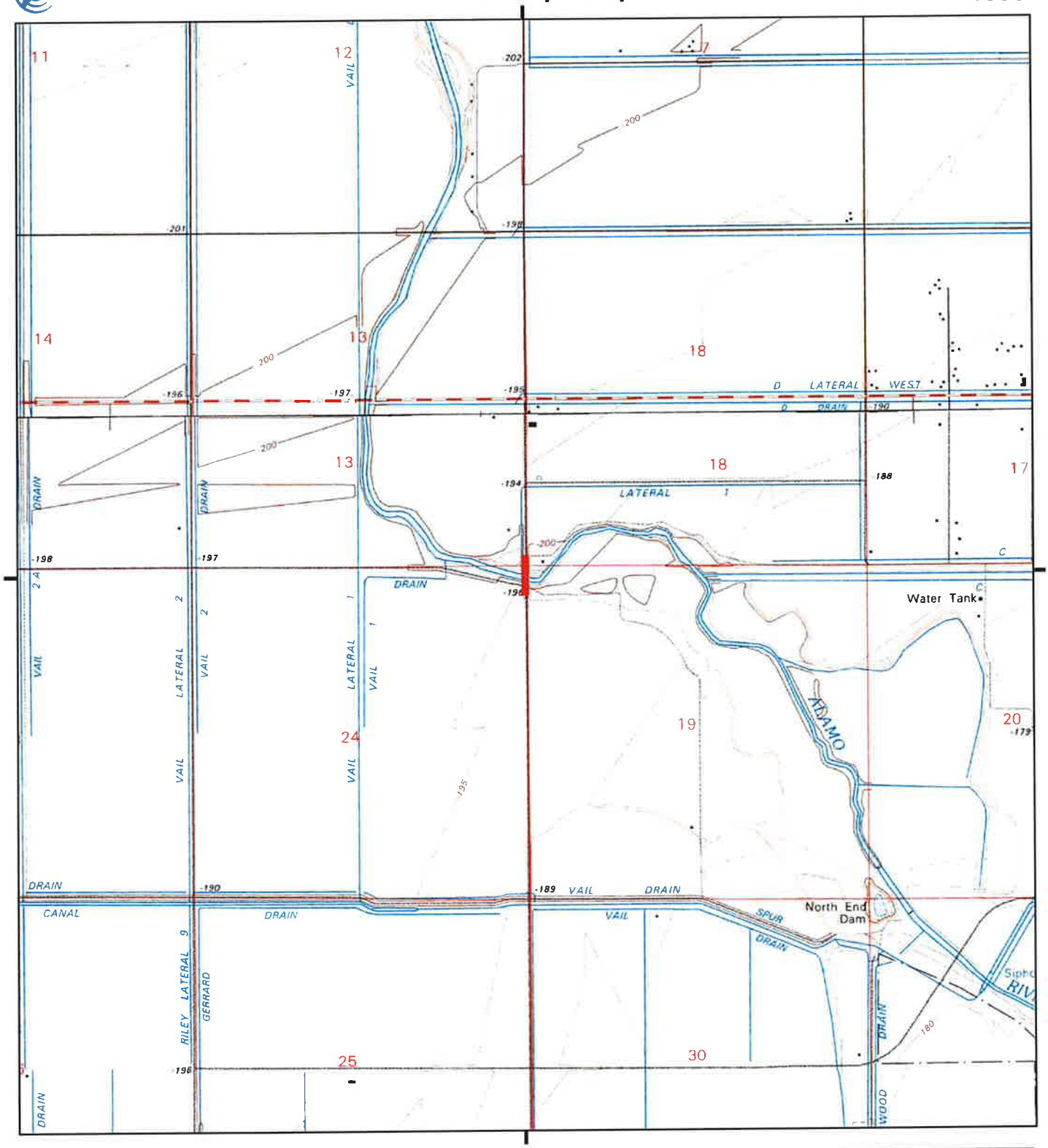
TP, Westmorland East, 2012, 7.5-minute
N, Niland, 2012, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

1995



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

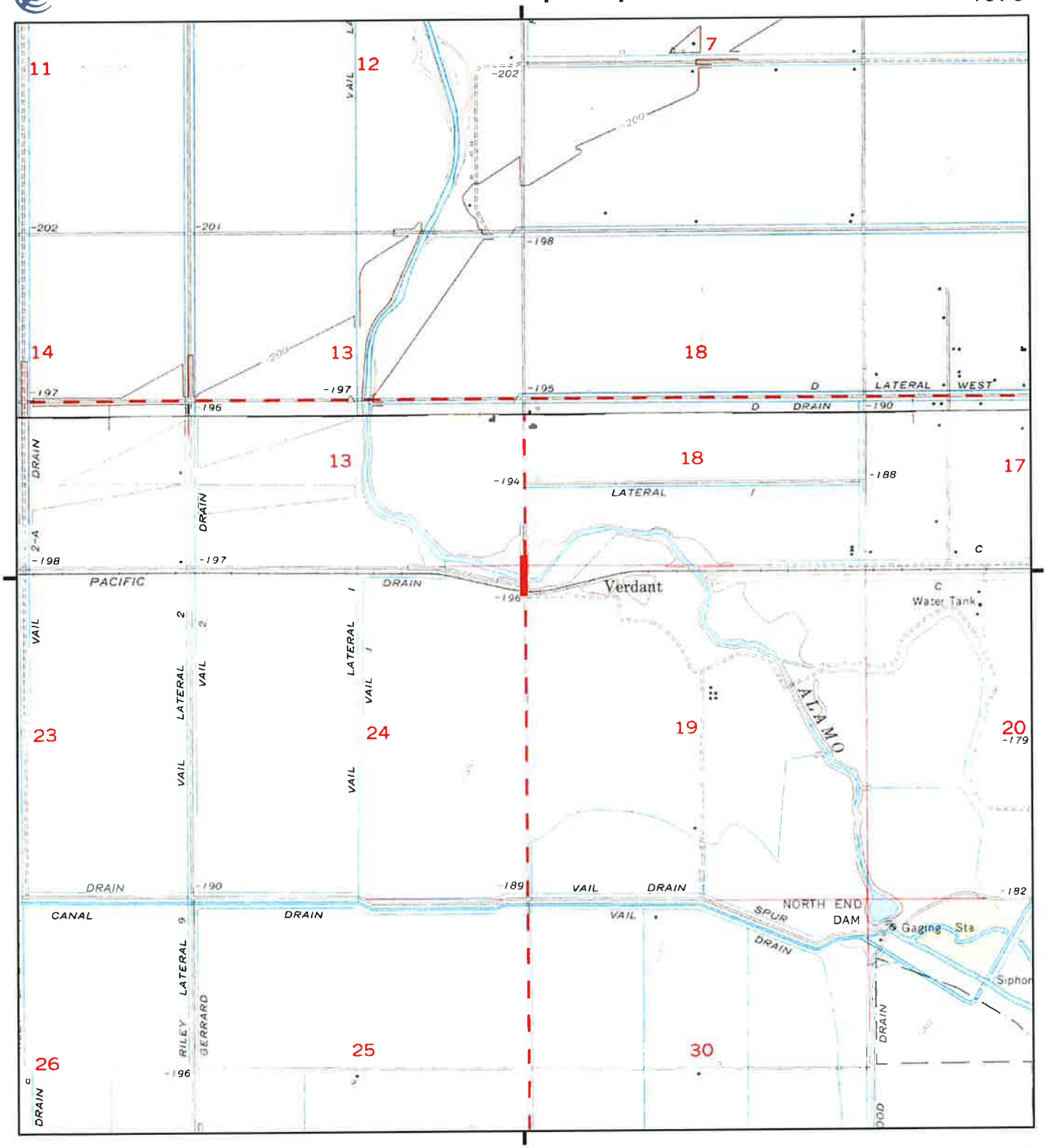
TP, Westmorland East, 1995, 7.5-minute
N, Niland, 1995, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

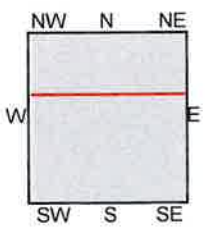
Historical Topo Map

1976



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0 Miles 0.25 0.5 1 1.5



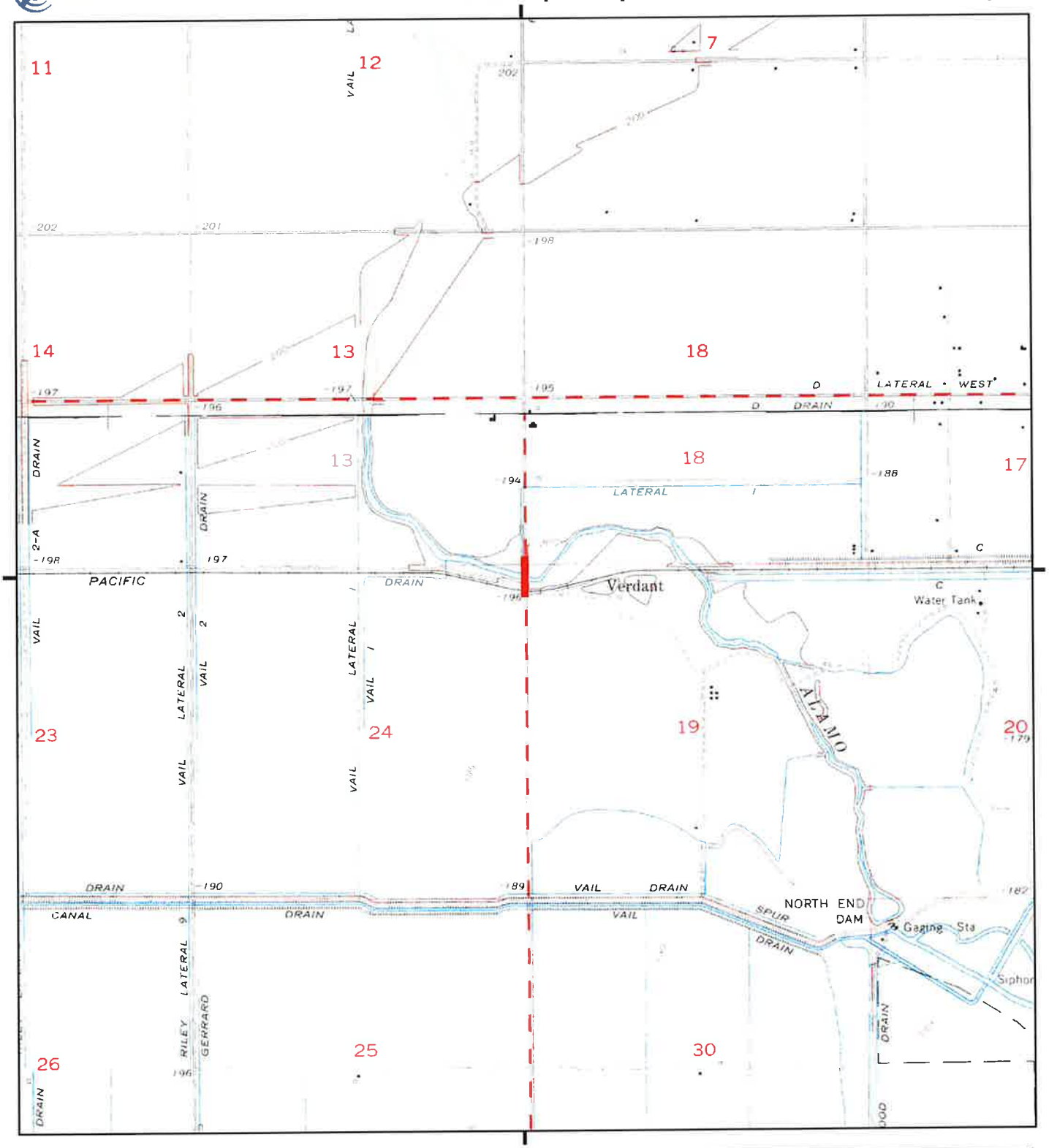
TP, Westmorland, 1976, 7.5-minute
N, Niland, 1976, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

1956



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

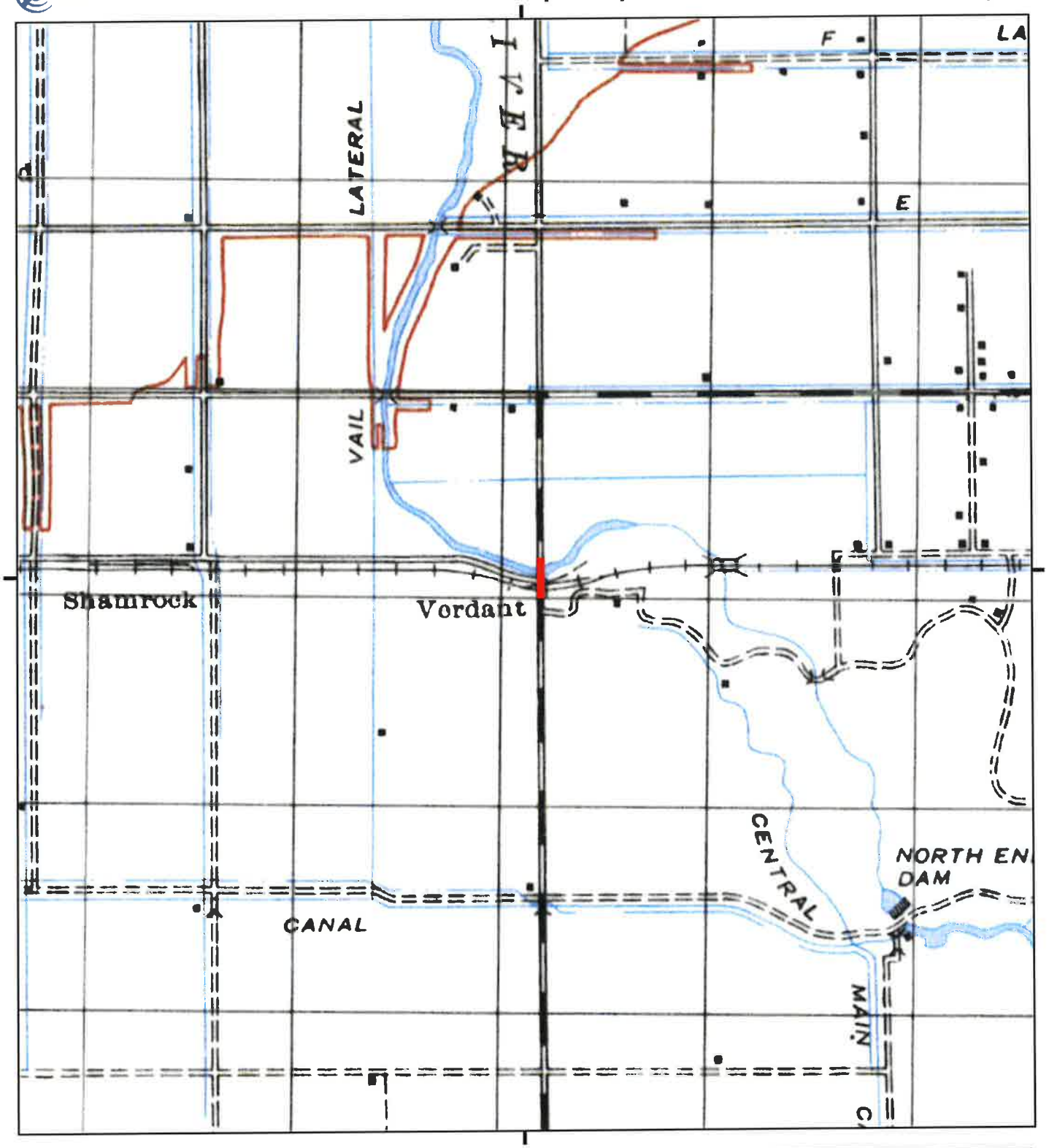
TP, Westmorland, 1956, 7.5-minute
N, Niland, 1956, 7.5-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

1947



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, CALIPATRIA, 1947, 15-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Historical Topo Map

1945



This report includes information from the following map sheet(s).

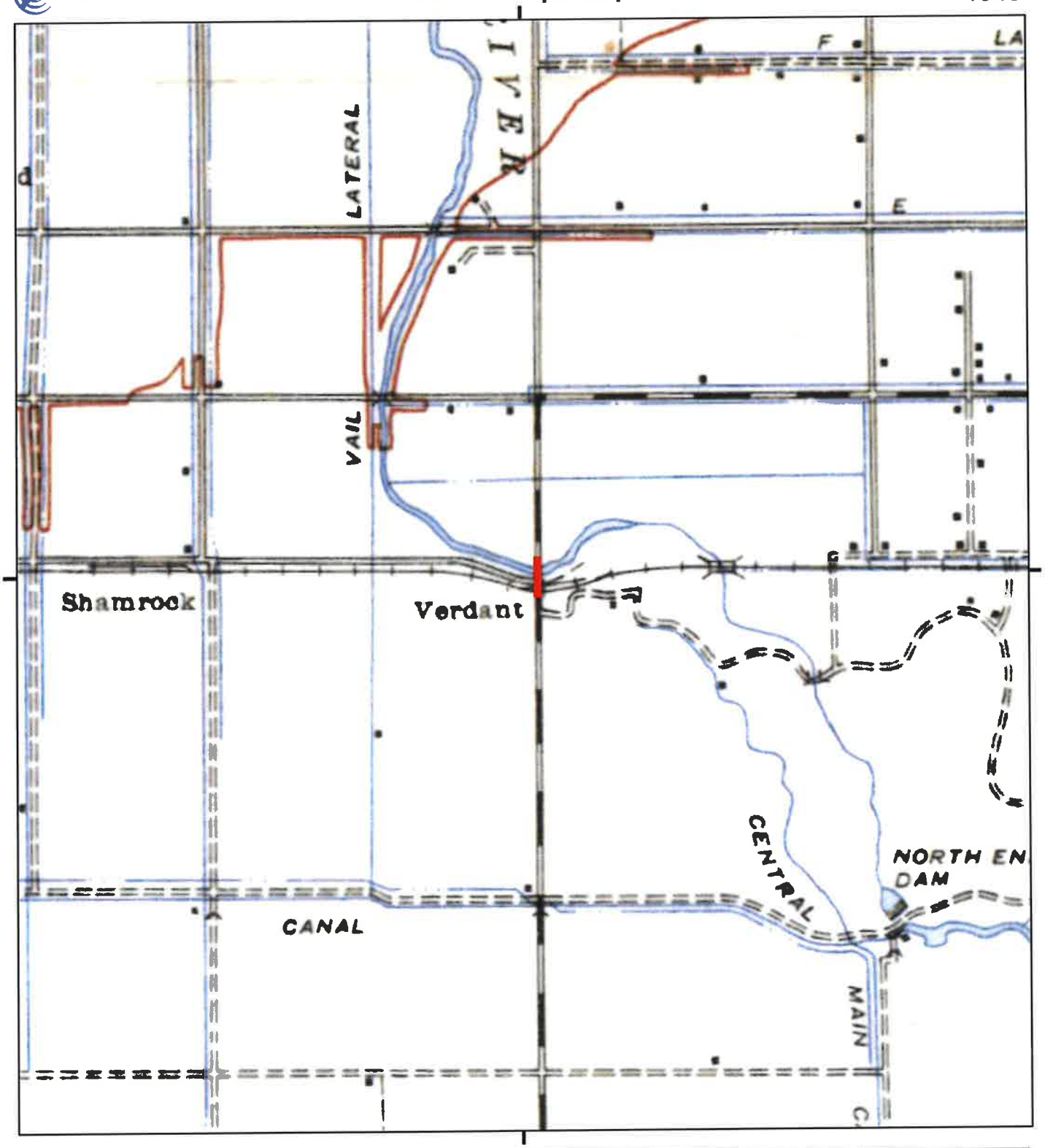
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Calipatria, 1945, 15-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, CALIPATRIA, 1943, 15-minute

SITE NAME: Brandt Road Bridge
ADDRESS: Brandt Road Bridge
Calipatria, CA 92233
CLIENT: Kleinfelder, Inc.

N

Brandt Road Bridge

Brandt Road Bridge

Calipatria, CA 92233

Inquiry Number: 7771229.11

September 25, 2024

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

09/25/24

Site Name:

Brandt Road Bridge
Brandt Road Bridge
Calipatria, CA 92233
EDR Inquiry # 7771229.11

Client Name:

Kleinfelder, Inc.
24411 Ridge Rte Dr Suite 225
Laguna Hills, CA 92653
Contact: Stefan Birardi

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2020	1"=500'	Flight Year: 2020	USDA/NAIP
2016	1"=500'	Flight Year: 2016	USDA/NAIP
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2002	1"=500'	Acquisition Date: January 01, 2002	USGS/DOQQ
1996	1"=500'	Acquisition Date: June 16, 1996	USGS/DOQQ
1992	1"=500'	Acquisition Date: January 01, 1992	USGS/DOQQ
1984	1"=500'	Flight Date: January 01, 1984	USDA
1976	1"=500'	Flight Date: October 12, 1976	USGS
1953	1"=500'	Flight Date: April 10, 1953	USDA
1949	1"=500'	Flight Date: February 18, 1949	USDA
1937	1"=500'	Flight Date: November 19, 1937	USDA

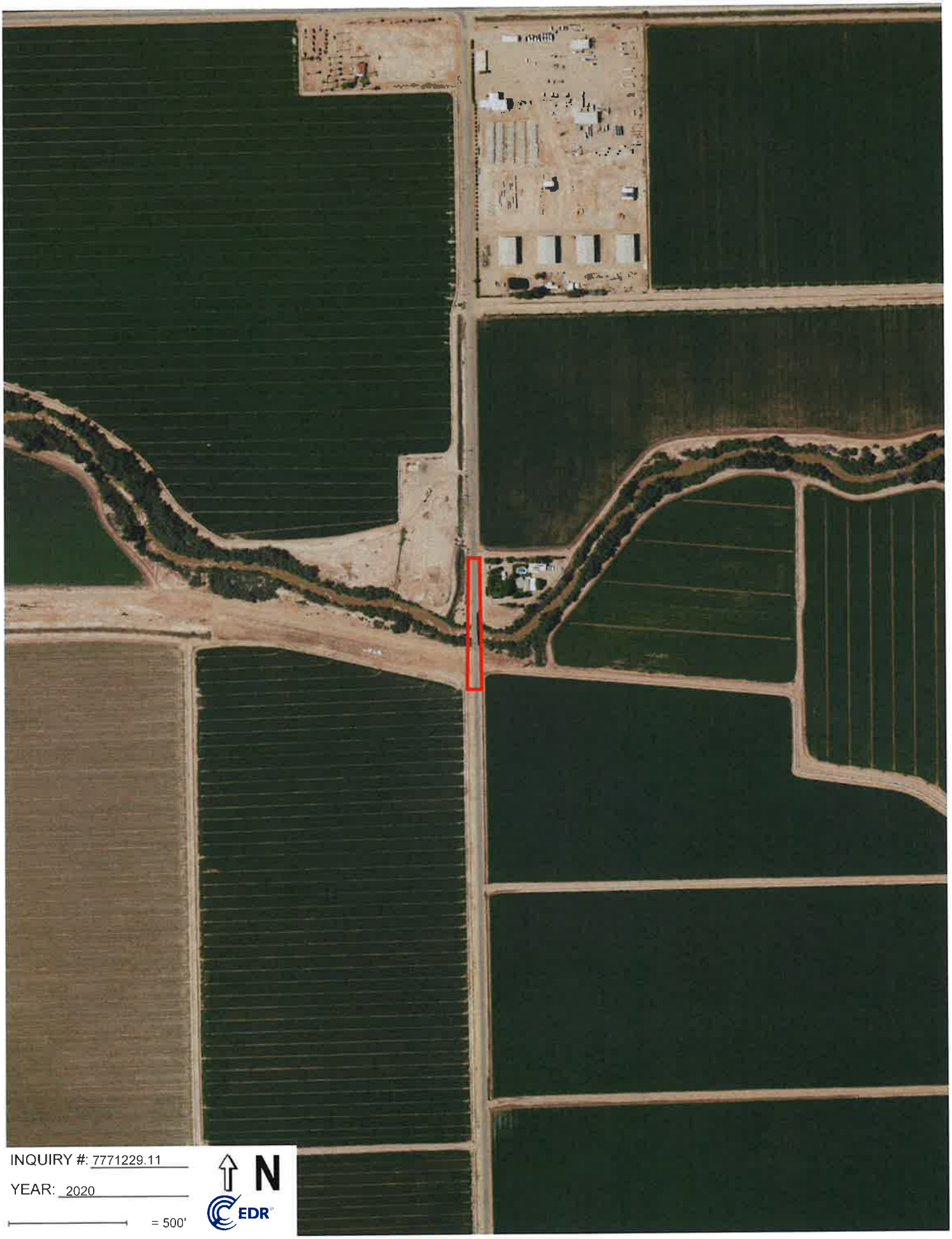
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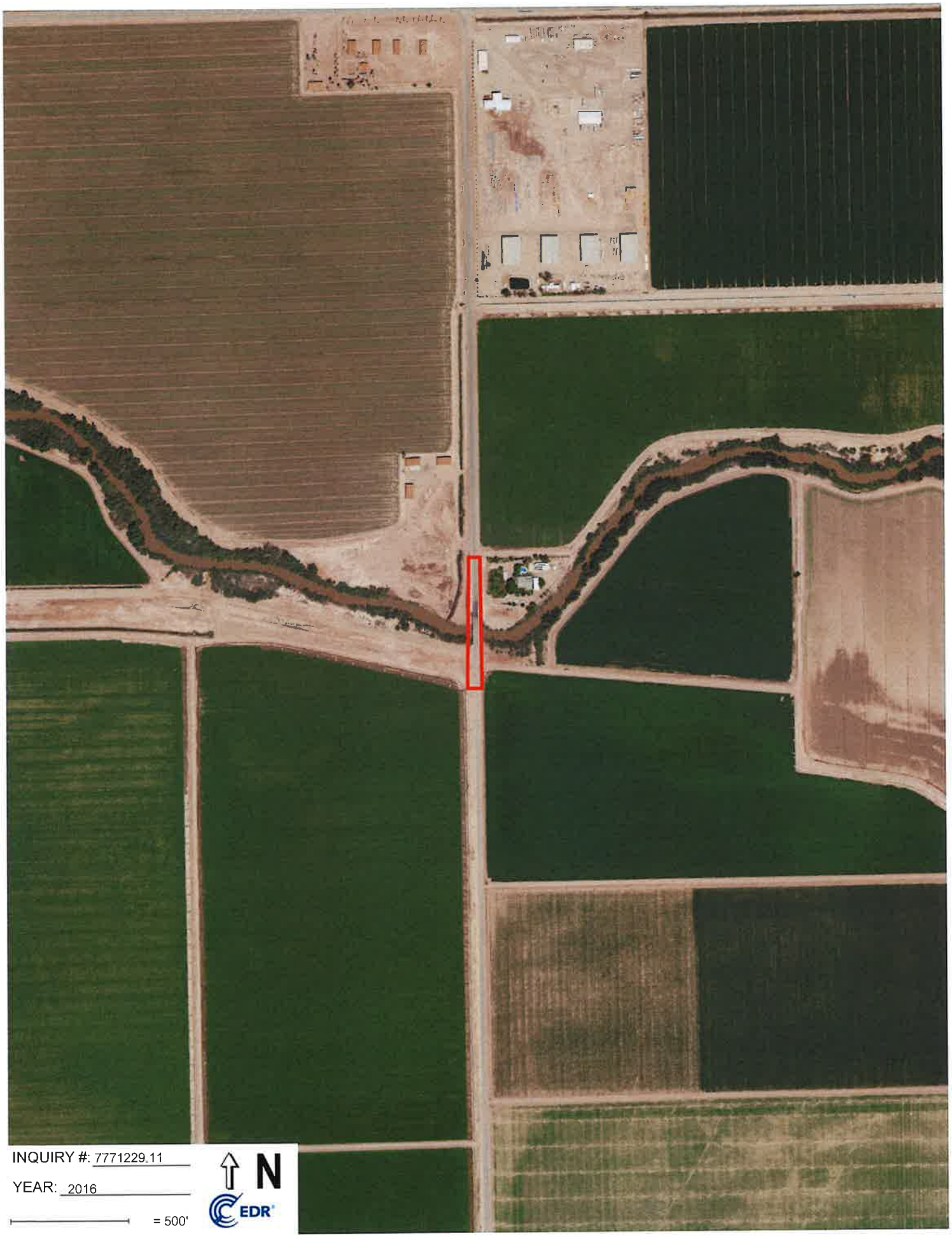
INQUIRY #: 7771229.11

YEAR: 2020

= 500'

N

EDR



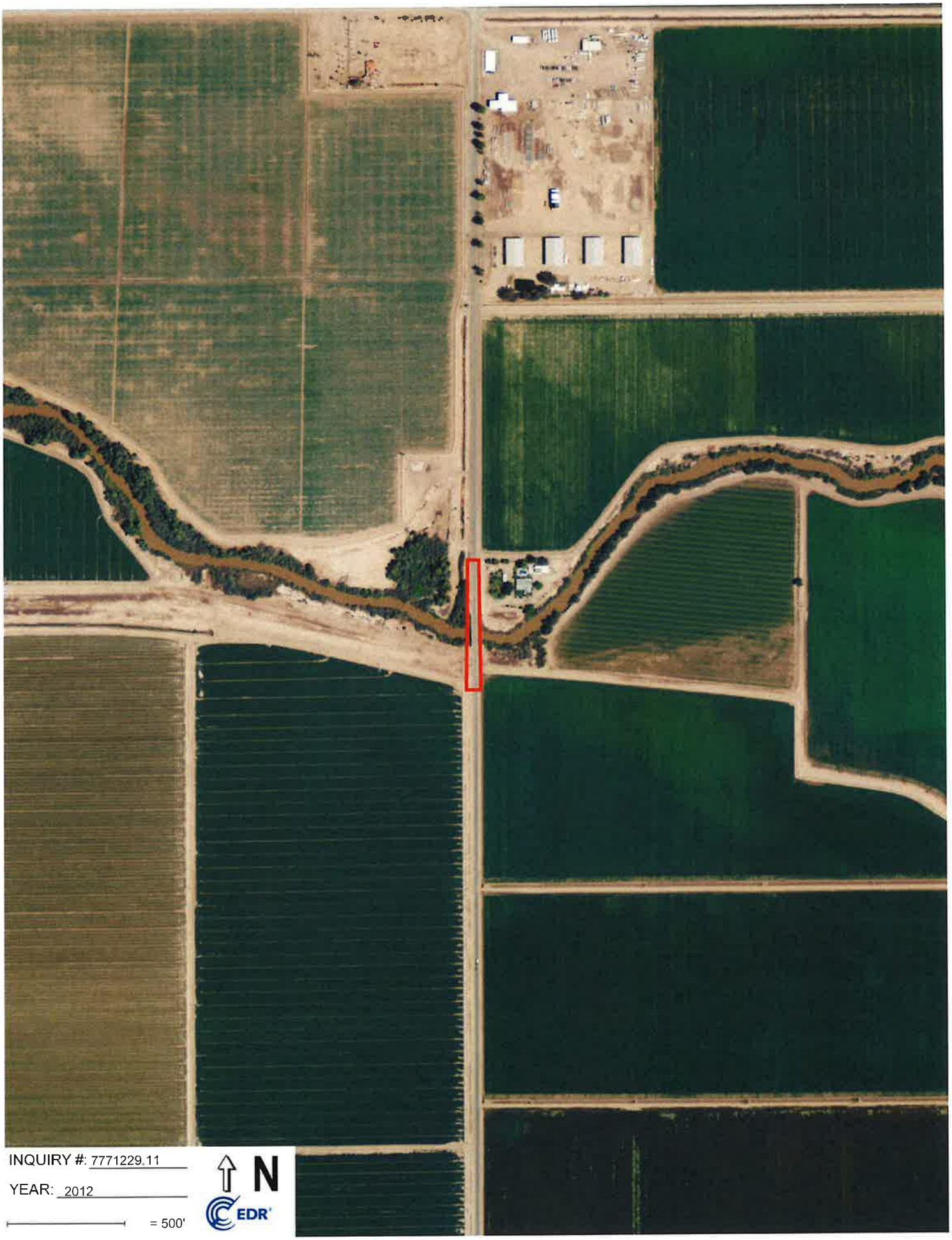
INQUIRY #: 7771229.11

YEAR: 2016

= 500'

N

EDR



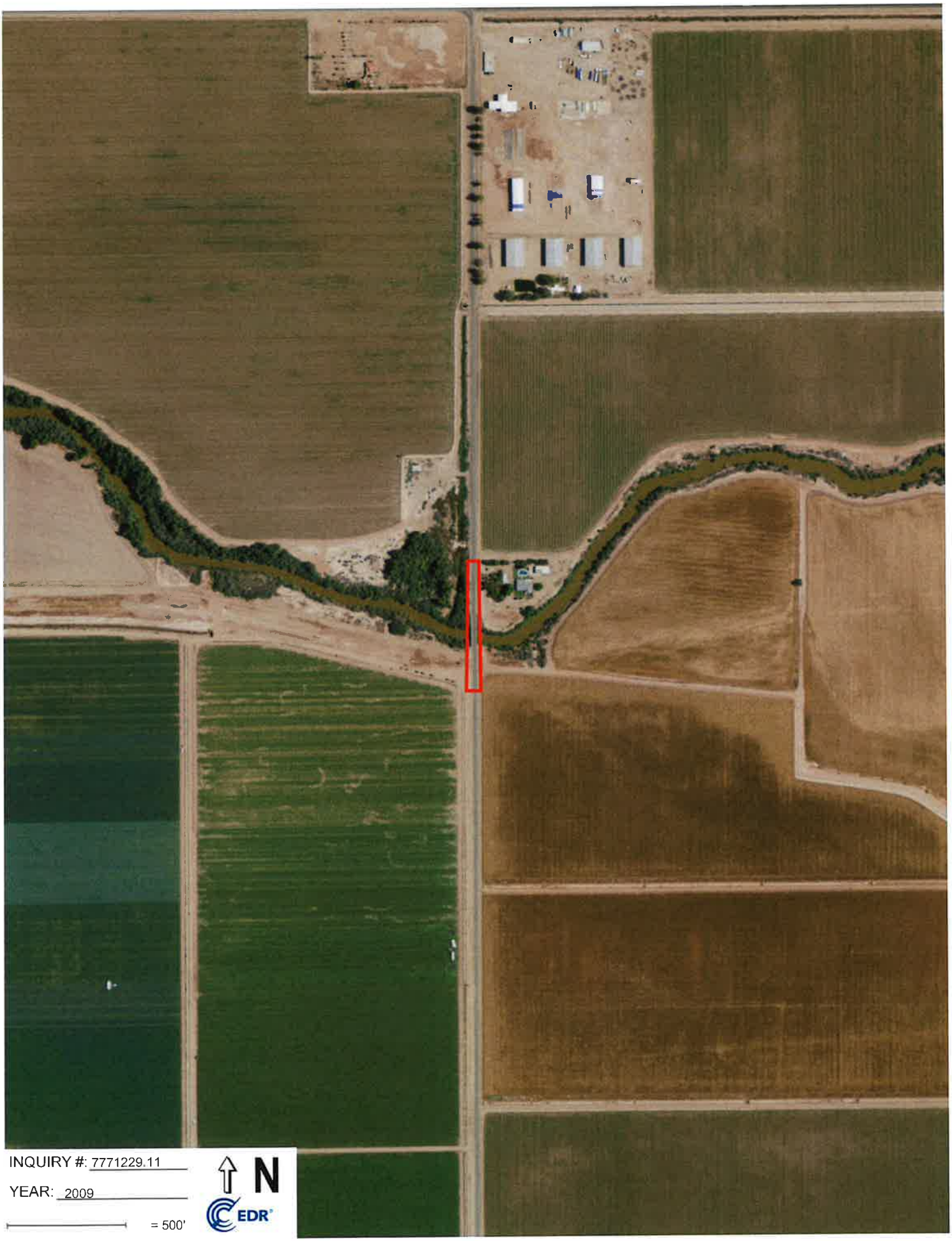
INQUIRY #: 7771229.11

YEAR: 2012

= 500'

N

EDR



INQUIRY #: 7771229.11

YEAR: 2009

= 500'

N

EDR



INQUIRY #: 7771229.11

YEAR: 2006

= 500'

N

EDR


INQUIRY #: 7771229.11
YEAR: 2002
= 500'
N
EDR



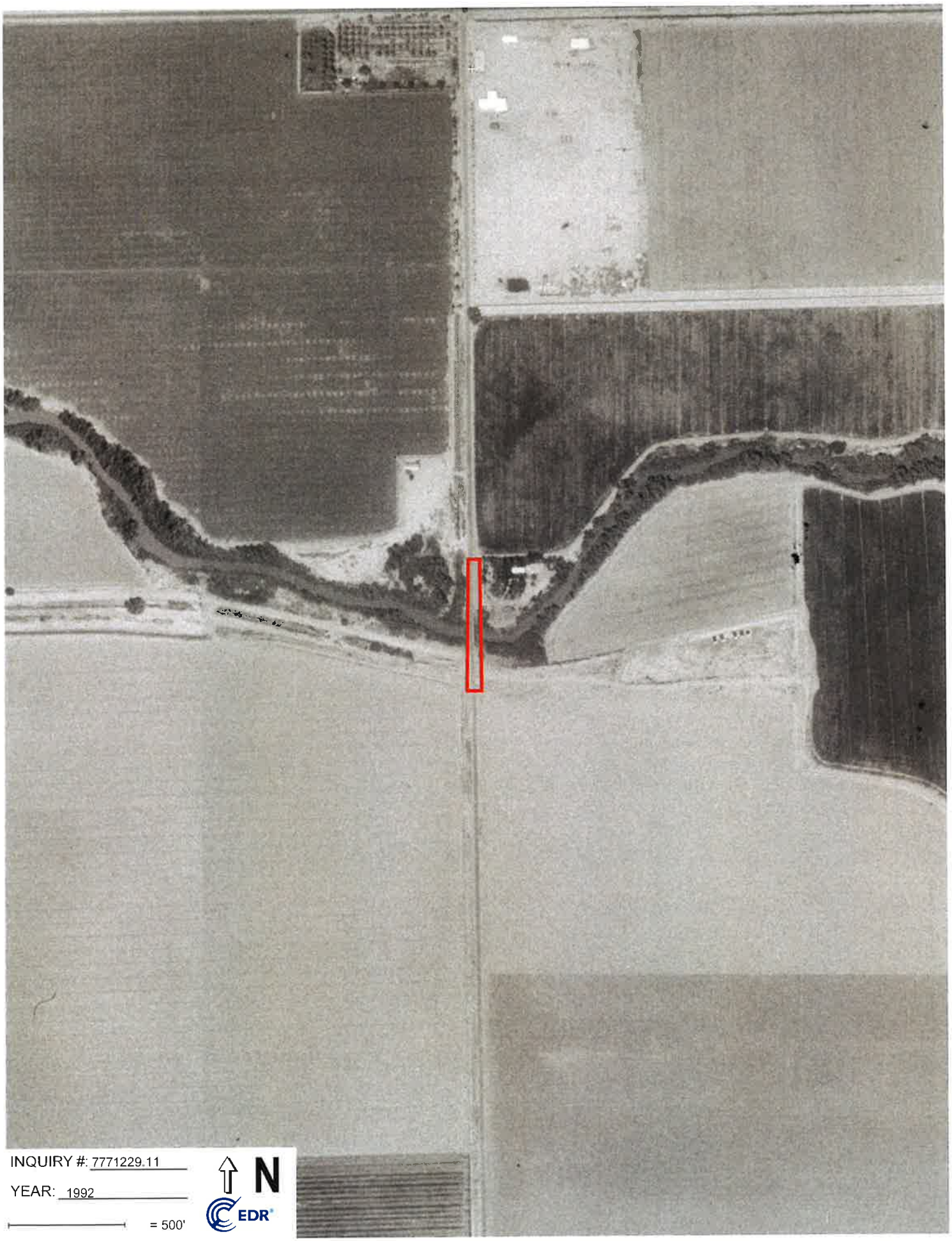
INQUIRY #: 7771229.11

YEAR: 1996

= 500'

N

EDR



INQUIRY #: 7771229.11

YEAR: 1992

= 500'

N

EDR



INQUIRY #: 7771229.11

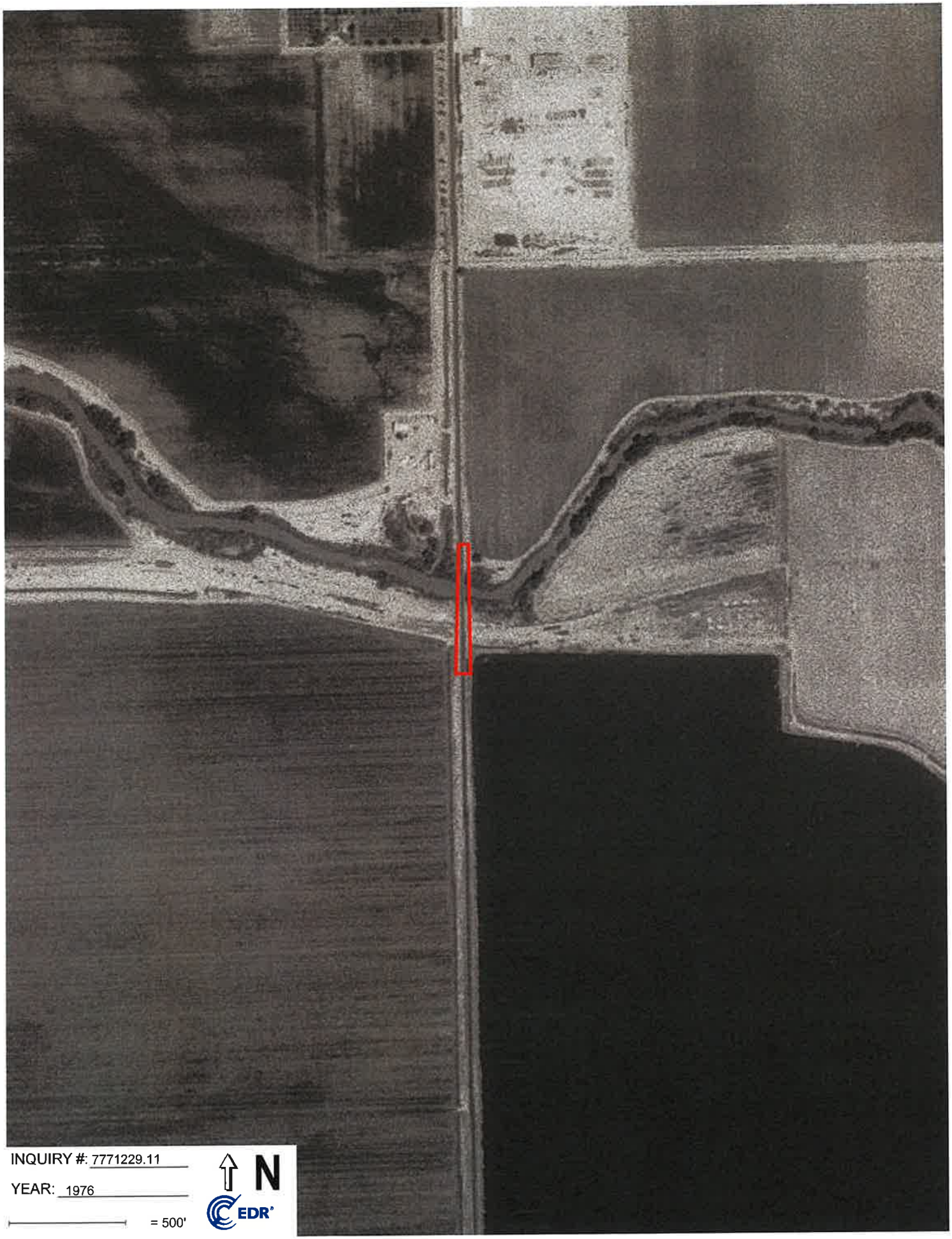
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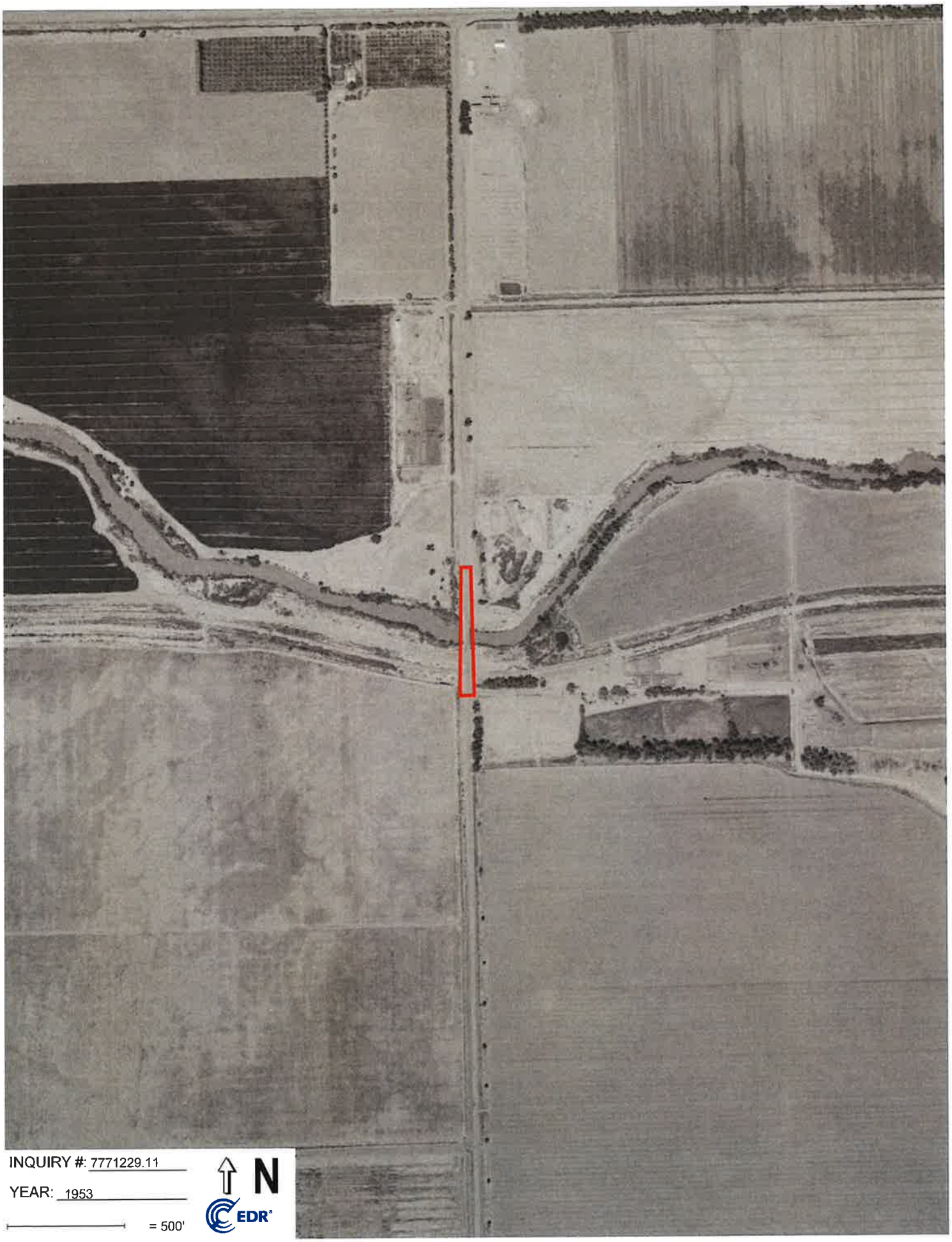
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INQUIRY #: 7771229.11

YEAR: 1949

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INQUIRY #: 7771229.11

YEAR: 1937

= 500'

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EDR

Brandt Road Bridge
Brandt Road Bridge
Calipatria, CA 92233

Inquiry Number: 7771229.8
September 23, 2024

EDR Building Permit Report

Target Property and Adjoining Properties

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Building Permit Report: Search Documentation

9/23/24

Site Name:	Client Name:
Brandt Road Bridge	Kleinfelder, Inc.
Brandt Road Bridge	24411 Ridge Rte Dr Suite 225
Calipatria, CA 92233	Laguna Hills, CA 92653
EDR Inquiry # 7771229.8	Contact: Stefan Birardi

Search Documentation

DATA GAP

The complete collection of Building Permit data available to EDR has been searched, and as of 9/23/24, EDR does not have access to building permits in the city where your target property is located (Calipatria, CA).

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The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

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HYDROLOGY STUDY
BRANDT ROAD BRIDGE REPLACEMENT PROJECT AT ALAMO RIVER
IMPERIAL COUNTY, CALIFORNIA
KLEINFELDER PROJECT NO. 25001840.001A

MARCH 21, 2025
REVISED AUGUST 25, 2025

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A Report Prepared for:

Imperial County Department of Public Works
155 S. 11th Street
El Centro, CA 92243

BRANDT ROAD BRIDGE REPLACEMENT PROJECT
AT ALAMO RIVER
IMPERIAL COUNTY, CALIFORNIA

Prepared by:

Anna E. Thompson

Anna Thompson, PE (CA-96472)
Project Engineer

Reviewed by:

Kelly Burnell, PE (CA-72985)
Principal Professional

KLEINFELDER
770 First Ave, Suite 400
San Diego, CA 92101
Phone: 619.831.4600

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BRANDT ROAD BRIDGE REPLACEMENT PROJECT
AT ALAMO RIVER
IMPERIAL COUNTY, CALIFORNIA

1 EXECUTIVE SUMMARY

The County of Imperial (the Client) has engaged Kleinfelder, Inc. to design a bridge replacement and conduct the corresponding hydrology analysis for the Brandt Road crossing over the Alamo River. The project involves the demolition and removal of the existing 1950s ten-span wood bridge and the construction of a new single-span bridge at the same alignment. The replacement structure is designed to meet modern seismic and safety standards while improving overall resilience and accessibility.

Comprehensive hydrologic modeling was performed to evaluate various storm event frequencies and their impact on the proposed bridge. Analyses included assessments of low-flow conditions, freeboard, overtopping potential, velocity, and stormwater conveyance. Peak flow and velocity data informed the design of scour protection measures, including abutment riprap, to ensure long-term structural stability. The study determined that the new bridge can accommodate a 25-year storm event, while overtopping during less frequent, larger storms will be mitigated through strategic scour protection and flow management measures.

The proposed bridge replacement maintains existing hydraulic conditions without causing adverse downstream or upstream effects. Additionally, it enhances roadway safety and reliability, ensuring improved connectivity and accessibility for the local community.

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2 INTRODUCTION

2.1 PROJECT DESCRIPTION

The Imperial County Public Works Department proposes to replace the existing Brandt Road Bridge over the Alamo River. The project includes demolishing and removing the current 1950s ten-span wood bridge and constructing a new single-span bridge on the same alignment to meet modern design and seismic standards.

The project is located approximately 0.5 miles south of the intersection of Brandt Road and West Eddins Road. Brandt Road serves agricultural traffic and the geothermal industry and is a critical route for the future Lithium Valley development. See **Appendix A** for the Site Location Map.

2.2 DESIGN DATA AND METHODOLOGIES

Based on a review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM)[1] panel 06025C1025C (effective September 26, 2008), the project area is located within Flood Zone A and is subject to inundation during the 1% annual chance (100-year) flood event. **Appendix B** shows the project location with the FEMA floodplain delineation obtained from the FEMA online mapping center.

A Light Detection and Ranging (LiDAR) dataset was used for the onsite hydrologic and hydraulics analyses. A Digital Elevation Model (DEM), dated 2021, was downloaded from the USGS National Land Cover Database (NLCD)[2]. A topographic survey was received from Dynamic Consulting Engineers, Inc., dated October 2024 . A composite topographic surface was generated from the survey and USGS LiDAR and used for the area outside of the stream channel. The surveyed elevations provided for this site were adjusted by adding 1,000' to all elevation values. This adjustment was applied due to the site's location below sea level and was implemented to maintain positive elevation values in the dataset.

The water within the stream channel was said to be toxic and unsafe for human entry. Therefore, the channel geometry was retrieved from the As-Built drawing, given from the County of Imperial County Department of Engineering, dated July 17, 1948. A constant stream slope was retrieved from USGS LiDAR and the cross-sections were duplicated using this consistent slope upstream and downstream of

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the bridge. These drawings also had an adjusted datum due to the location below sea level. The as-built drawings were calculated to have a datum of +709' above sea level. Hereafter, the As-Built drawing elevations and "+709'" datum were used for the proposed hydrology study. See **Appendix C** for the As-Built Drawing referenced. The channel geometry was duplicated upstream and downstream of the bridge and set to a slope that was retrieved from LiDAR data. The channel geometry was modeled in AutoCAD Civil 3D[3] and combined with the topographic survey and the LiDAR dataset to create the full topographic contour dataset. The topographic survey and LiDAR elevations were adjusted to match the As-Built drawings. All elevations referenced in this report are based on this modified datum and should be adjusted accordingly if compared to other elevation datasets using a different reference.

Cross sections were drawn in AutoCAD Civil 3D[3] perpendicular to the stream centerline and placed upstream and downstream of the bridge. The cross sections and stream centerline were exported from AutoCAD Civil3D and brought into HEC-RAS[4] using HEC-RAS 1-Dimensional capabilities. **Appendix D** shows the HEC-RAS cross sections along Alamo River used within modeling. The same cross sections were used within the existing and the proposed model to achieve a baseline flood elevation.

Four bridge alternatives were modeled during the alternative analysis phase. Alternative 1 is a 154'-6" single span bridge with steel girder support. Alternative 2 is a 154'-6" bridge with 1 pier location and concrete girder support. Alternative 3A is a single span 114'-6" decreased length bridge with steel girder supports. Alternative 3B is a single span 114'-6" decreased length bridge with precast prestressed concrete "wide flange" girders. Since all alternatives produced similar flood elevation results and resulted in overtopping in flood events above the 25-yr event, the option which provided the overall shallowest structure and the best clearance during the lower-level flood events was selected as the preferred alternative from the hydraulic standpoint. Ultimately, Alternative 3B was chosen as the preferred alternative and design is proceeding with those assumptions. HEC-RAS was used to verify that the proposed bridge design does not cause an increase in the flood elevation from existing conditions. The Alternative schematics from AutoCAD and HEC-RAS can be found in **Appendix E.**

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3 HYDROLOGY

3.1 DESIGN STORM EVENTS

The design storm events used in the analysis were found using the regression equation found in the USGS Methods for Determining Magnitude and Frequency of Floods in California, Based on Data through Water Year 2006[5]. The project location was determined to be in Region 6/Desert region. The calculations were then supported by Streamstats[6], which also uses the Regression Equation to calculate the percent annual exceedance probability. See **Appendix F** for the Regression Equation Calculations and the USGS Streamstats Report.

The project location is with FEMA flood Zone A, which is inundated by the 100-year storm event, and therefore overtopping metrics were used. Several Storm Events were use modeled through the bridge and the results show that the bridge passes the 25-year storm under the bridge deck, while the 50- and 100-year storm events overtop the bridge. The 2-year storm was used as the low-flow event, the 25-year storm was used for the partial flow conditions, and the 100-year storm was used for the overtopping calculations and used to satisfy the LOMR permit. A 200-year storm event was shown for scour calculations only. All the modeled storm events and their flow rates are shown in Table 3-1 below.

Table 3-1: Peak Flow Rates

Percent Annual Exceedance Probability (%)	Storm Event	Peak Flow (cfs)
50	2-year storm event	347
10	10-year storm event	5,084
4	25-year storm event	13,567
2	50-year storm event	25,586
1	100-year storm event	45,449
0.5	200-year storm event	76,421

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4 HYDRAULIC ANALYSIS

4.1 HEC-RAS HYDRAULIC DEVELOPMENT

Cross sections for the hydraulic analysis were developed using AutoCAD Civil 3D and imported into HEC-RAS to evaluate existing and proposed hydraulic conditions. These cross sections were assigned Manning's roughness coefficients to reflect the hydraulic characteristics of different surfaces, with values of 0.03 for the channel, 0.05 for the banks, and 0.03 for the floodplain. The roughness values were selected based on typical conditions for a natural channel with moderate vegetation and an existing bridge structure with cross beams. To ensure accurate representation of flow conditions, ineffective flow areas were designated within the cross sections to prevent unrealistic flow outside the modeled channel and floodplain limits.

The existing bridge was incorporated into the model using a detailed bridge modeling approach, accounting for cross beams and structural elements that influence flow resistance. The proposed bridge alternatives were also modeled in HEC-RAS, evaluating changes in hydraulic performance due to different structural configurations. The existing bridge is wooden and has piers every 15 ft and cross beams on the upper half of the bridge. HEC-RAS does not have the capability to model horizontal cross beams or segments. Therefore, the thickness of piers was increased on the upper portion of the piers and additional Mannings roughness was added to the area to simulate the roughness that crossbeams would cause.

Various scenarios were analyzed to determine their impacts on flow conditions, backwater effects, and overall floodplain dynamics. The water flow depth and no-rise conditions were evaluated for each alternative to ensure compliance with regulatory requirements. After comparing the performance of multiple bridge configurations, Alternative 3 was selected as the preferred option, as it met hydraulic criteria and improved bridge constraints.

4.2 FREEBOARD AND OVERTOPPING ANALYSIS

The freeboard analysis was conducted to evaluate the clearance between the design water surface elevation and the low chord of the bridge for both the existing and proposed bridge structures. The

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existing bridge was assessed using standard open channel flow computations, identifying critical freeboard deficiencies that contribute to potential overtopping risks.

The model assessed multiple design storm scenarios to determine the flow conditions under which the bridge deck would be reached or overtopped. The freeboard was calculated using the proposed bridge deck low chord elevation of 93.58' and the elevation of each storm event at the upstream side of bridge. The overtopping was calculated using the proposed bridge deck high chord elevation of 98.85' and the water surface elevation above this height. These elevations are based on the modified datum and should not be used beyond the purposes of the hydraulic model and calculations. The results confirmed that the selected bridge alternative maintains adequate freeboard under normal design conditions, while also identifying the flood events that would cause overtopping. The water surface elevation for each storm event and freeboard is listed in table 4-2 below.

Table 4-2: Water Surface Elevation and Freeboard

Percent Annual Exceedance Probability (%)	Storm Event	Water Surface elevation At Bridge (ft)	Freeboard to Low Chord- 93.58' (ft)	Overtopping to High Chord- 98.85' (ft)
50	2-year storm event	75.19	18.39	-
10	10-year storm event	85.20	8.38	-
4	25-year storm event	92.15	1.43	-
2	50-year storm event	98.79	-	-
1	100-year storm event	101.42	-	2.57

Note: The data provided is derived using the topographic compilation described in section 2.2. Because Bathymetric survey was not retrieved within the stream channel, these elevations could vary and are shown for visual representation only.

4.3 "NO-RISE" ANALYSIS

The existing HEC-RAS model and the proposed Alternative 3B were analyzed to ensure that there was no increase in the water surface elevation for the 2-, 10-, 25-, 50-, and 100-year storm events. The hydraulic analysis demonstrates that the proposed design does not result in an increase in the water surface during these storm events and the project is within the no-rise requirements. The results indicate that the flow conveyance capacity remains consistent, with no measurable increase in water surface elevation at any cross-section. This ensures that the project meets regulatory standards for floodplain management and does not negatively impact upstream or downstream conditions. The HEC-RAS outputs and results are shown in **Appendix G.**

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4.4 SCOUR ANALYSIS

Scour analyses were conducted to evaluate the potential for channel degradation, local scour, and contraction scour at the bridge site. These assessments were necessary to ensure that the proposed foundation design could withstand expected scour depths and maintain long-term structural stability.

General and local scour analyses were conducted for the 100-yr storm event and the 200-yr storm. HEC-RAS outputs were used in Hydraulic Toolbox Version 5.3[7] to calculate contraction or general scour. The Hydraulic Toolbox software utilizes the HEC-18[8] equation for Clear-water and Live-bed Scour. Because the bridge overtops at the 50-year storm, pressure flow scour is computed within the hydraulic toolbox, as well. The proposed alternative, Alternative 3B, was analyzed to ensure the foundation design accounted for the expected scour depths under design flood conditions. The contraction scour for pressure flow condition during the 100-year and 200-year storm event are 19.40' and 22.73', respectively.

According to visual bridge inspections and analyzing the previous As-Built cross section, it appears that the long-term degradation at this project site for this stream is insignificant. Therefore, the contraction scour for pressure flow condition is used for the general scour part of this design.

The abutment scour, or local scour, was calculated using the built-in Bridge Scour tool in HEC-RAS. This calculation utilizes Froehlich's Abutment Scour Equation. The length of the abutment (embankment) projected normal to flow (L') was defined as 105 and 140 ft within the equation. The results show that the scour at each abutment is 6.07'(L) and 12.26'(R) for the 100-year storm and 9.71'(L) and 15.77'(R) for the 200-year storm. NCHRP method was also applied to compare the abutment scour results from Froehlich's Equation. The NCHRP method yielded abutment scour depths of 2.47'(L) and 3.83'(R) for the 100-year storm and 4.43'(L) and 13.83'(R) for the 200-year storm. The scour calculations and results can be found in Appendix H. It should be noted that the effect of riprap armoring around abutments is not taken into account in both Froehlich's Abutment Scour Equation and NCHRP method. With riprap protection the scour at abutments will be effectively mitigated. The riprap size computation can be found in Section 5.2.

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5 DRAINAGE IMPROVEMENTS

5.1 DECK DRAINAGE

The deck stormwater design was analyzed for the need for drainage outlets. Guidance from Caltrans Highway Design Manual (HDM), Chapter 870: Drainage Facilities Design[9] and AASHTO LRFD Bridge Design Specifications[10] were used to determine the appropriate size of the outlets. The proposed road will be crowned in the middle and slope at 1.017% to the north. Therefore, two curb openings will be placed on each side of the road on the north end.

The drainage to each opening is 2781 sq ft or 0.06 acres (A). Rainfall intensity values for this analysis were obtained from the NOAA Precipitation Frequency Data Server (PFDS), which provides precipitation frequency estimates based on NOAA Atlas 14, Volume 2 (NOAA, 2004)[11]. The 10-year storm intensity (I) and time of concentration was used to calculate the sizing of the scuppers. A runoff coefficient value (C) of 0.9 was used to represent concrete. NOAA Rainfall intensity can be found in **Appendix I**. Using the Rational method by multiplying the runoff coefficient by the intensity and area, the peak flow to each opening is 1.26 cfs.

The 10-year discharge of 1.26 cfs has a flow area of 0.6 sq ft, and therefore, a curb inlet opening of that size is recommended. Additionally, the spread was analyzed to determine that minimally an 8' lane width will be maintained during the 10- and 25-year storm events. The drainage inlets should outlet below the bridge and onto the proposed abutment riprap protection to ensure adequate stormwater outflow protection. See **Appendix J** for the stormwater design schematic.

5.2 ABUTMENT RIPRAP DESIGN

The riprap protection for the bridge abutments was designed following the guidelines provided in the Caltrans Highway Design Manual[9]. The design ensures stability against erosive forces generated by flow velocities near the abutments, reducing the risk of local scour and structural undermining.

A 100-yr storm event design velocity of approximately 7 feet per second (fps) was used in the analysis, based on hydraulic modeling results. A conservative bank slope of 1.5H:1V was assumed in the vicinity of the abutment faces to account for potential variations in local bank stability. Using these parameters, the D_{50} of the riprap was determined to be 12 inches (Class III), ensuring adequate resistance to

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hydraulic forces. Following standard practice, the riprap layer thickness was set at twice the D_{50}, resulting in a required thickness of 24 inches. It is recommended that the riprap extends 15 feet upstream and downstream of the abutment. Since the road right-of-way may not extend the full 15 feet, it is recommended that 16" D_{50} Class IV riprap (thickness 32") be used instead. The riprap design calculations, including derivations and supporting equations, are provided in **Appendix K**.

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6 CONCLUSIONS AND RECOMMENDATIONS

The proposed bridge replacement along Brandt Road over the Alamo River addresses the structural and hydraulic deficiencies of the existing 1950s ten-span wood bridge, ensuring compliance with modern seismic and design standards. After evaluating multiple design alternatives, Alternative 3 was selected as the preferred option, as it maintains the existing water surface elevation while improving hydraulic performance and structural integrity. This alternative provides a single-span bridge on the same alignment, minimizing environmental impacts and ensuring compatibility with existing roadway infrastructure.

Hydrologic and hydraulic analyses were performed to assess the structure's ability to accommodate various storm events. The bridge was evaluated for freeboard and scour, with results indicating that the structure can safely pass a 25-year storm event without causing adverse impacts to upstream or downstream conditions. Additionally, scour protection measures have been incorporated into the design to mitigate potential erosion and maintain long-term stability. Drainage improvements, including deck runoff management, have been integrated to enhance stormwater control and prevent localized flooding around the bridge.

It is recommended that the County proceed with the implementation of Alternative 3B, incorporating all proposed scour protection and drainage improvements to ensure long-term performance. Routine inspections and maintenance should be scheduled to monitor structural and hydraulic conditions, particularly after major storm events. Additionally, periodic reassessment of the bridge's hydraulic performance is advised to account for potential changes in sediment transport and climate variability.

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8 LIMITATIONS

This work was performed in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions, and recommendations are based on a limited number of observations and data known to date. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee, or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

The science of climate change and translating climate risks into design criteria are new and evolving practices, involving many uncertainties. The projections made in this report only reflect the professional judgment of the Project Team applying a standard of care consistent with the level of care and skill of other professionals undertaking similar work in the same locality under similar conditions at the date the services are provided. For these reasons, the recommendations, predictions, and projections made within this report provide guidelines based on the knowledge available to Kleinfelder as of the date provided based on Kleinfelder's review of the resources. Any predictions or projections made in this report are not guaranteed predictions or projections of future events.

The nature and climate impacts may differ significantly from predictions based on currently available data. Kleinfelder recommends that the results of these evaluations be updated over time as science, data, and modeling techniques advance. Unless so engaged, Kleinfelder disclaims any undertaking to update these predictions in the future. Any reliance upon maps or data presented herein used to make decisions or conclusions is at the sole discretion and risk of the user. This information is provided with the understanding that the data is not guaranteed to be accurate, correct, or complete and assumes no responsibility for errors or omissions. This report may be used only by the Client and the registered design professional in responsible charge and only for the purposes stated for this specific engagement within a reasonable time from its issuance, but in no event later than two (2) years from the date of the report.

The work performed was based on project information provided by Client. If Client does not retain Kleinfelder to review any plans and specifications, including any revisions or modifications to the plans and specifications, Kleinfelder assumes no responsibility for the suitability of our recommendations. In addition, if there are any changes in the field to the plans and specifications, Client must obtain written

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approval from Kleinfelder's engineer that such changes do not affect our recommendations. Failure to do so will vitiate Kleinfelder's recommendation.

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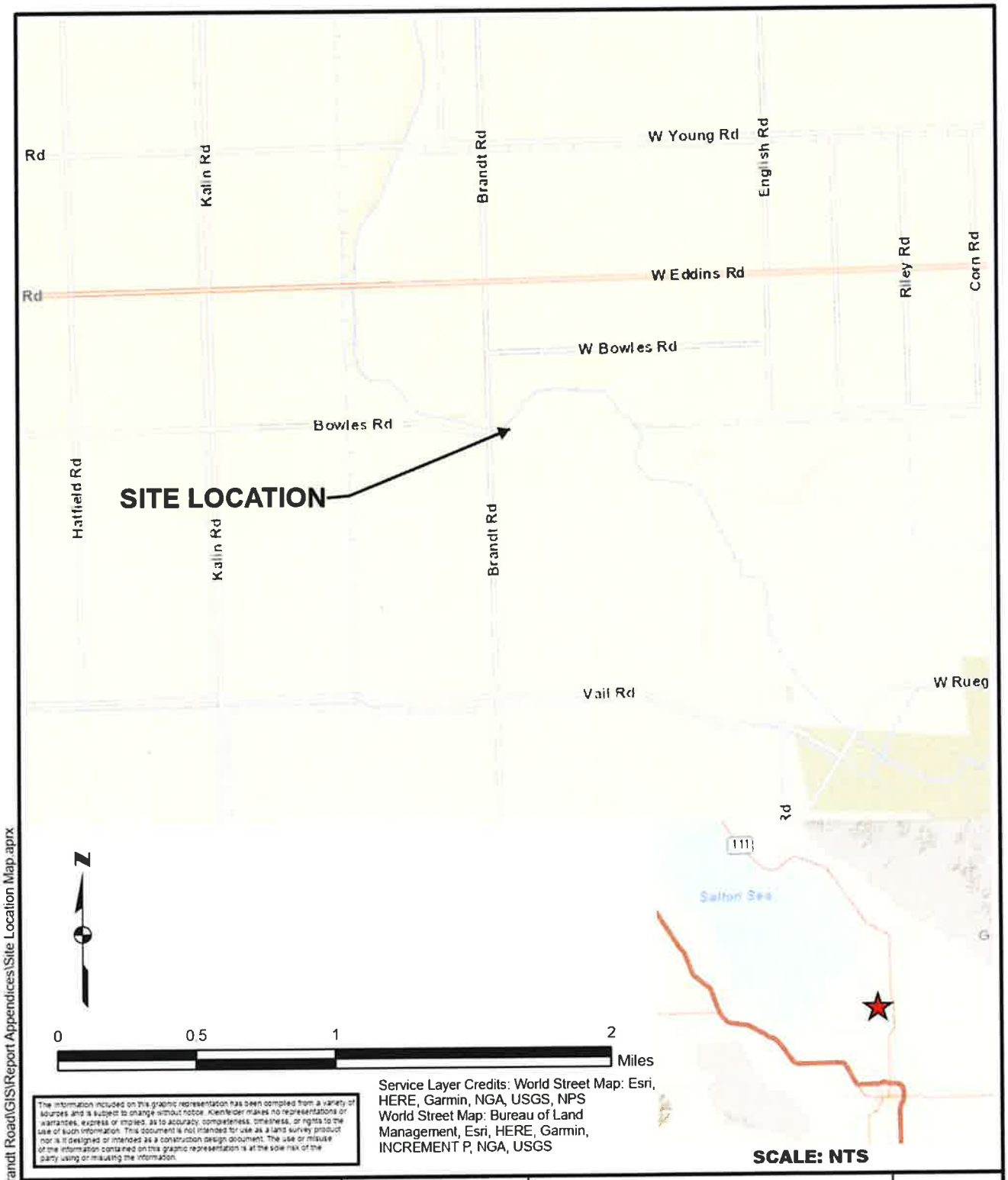
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APPENDIX A

Site Location Map

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World Street Map: Bureau of Land Management, Esri, HERE, Garmin, INCREMENT P, NGA, USGS

SCALE: NTS

G:\Staging\AThompson\Brandt Road\GIS\Report Appendices\Site Location Map.aprx

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www.kleinfelder.com

PROJECT NO.	25001840
DRAWN:	2/26/2025
DRAWN BY:	AET
CHECKED BY:	KB
FILE NAME:	Site Location Map.mxd

SITE LOCATION MAP

BRANDT ROAD BRIDGE REPLACEMENT
IMPERIAL COUNTY, CALIFORNIA

FIGURE
1

APPENDIX B

FEMA FIRM Panel

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NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The Community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 ft NAVD 88. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross-sections and interpolated between cross-sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 11. The horizontal datum was NAD 83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, MD 20910-3282

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was derived from USGS orthophoto, Digital Orthophoto Quadrangles produced at a scale of 1:12,000 from photographs dated 1993, or later.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a listing of Communities Participating in the National Flood Insurance Program (NFIP) dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on all available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://www.msc.fema.gov.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

SITE LOCATION

IMPERIAL COUNTY
UNINCORPORATED
AREAS
060065

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A1-A30, AR/A, AR/AE, AR/AH, AR/AO, AR/A1-A30, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation value where uniform within zone; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- 513 — Cross section line
- 23 — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000mN — 1000-meter Universal Transverse Mercator grid values, zone 11
- 6000000FT — 5000-foot grid values: California State Plane coordinate system, zone VI (FIPSZONE 0406), Lambert Conformal Conic projection
- DX5510 — Bench mark (see explanation in notes to users)
- ●M1.5 — River mile

MAP SCALE 1" = 2000'
0 2500 5000 FEET
0 500 1000 METERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including current or previous versions, and the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1025C

FIRM
FLOOD INSURANCE RATE MAP
IMPERIAL COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 1025 OF 2300
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
[illegible]	[illegible]	[illegible]	[illegible]

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP NUMBER
06025C1025C

EFFECTIVE DATE
SEPTEMBER 26, 2008

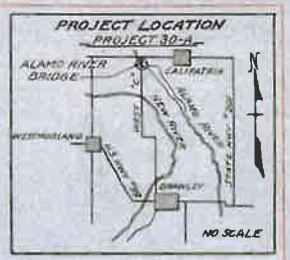
Federal Emergency Management Agency

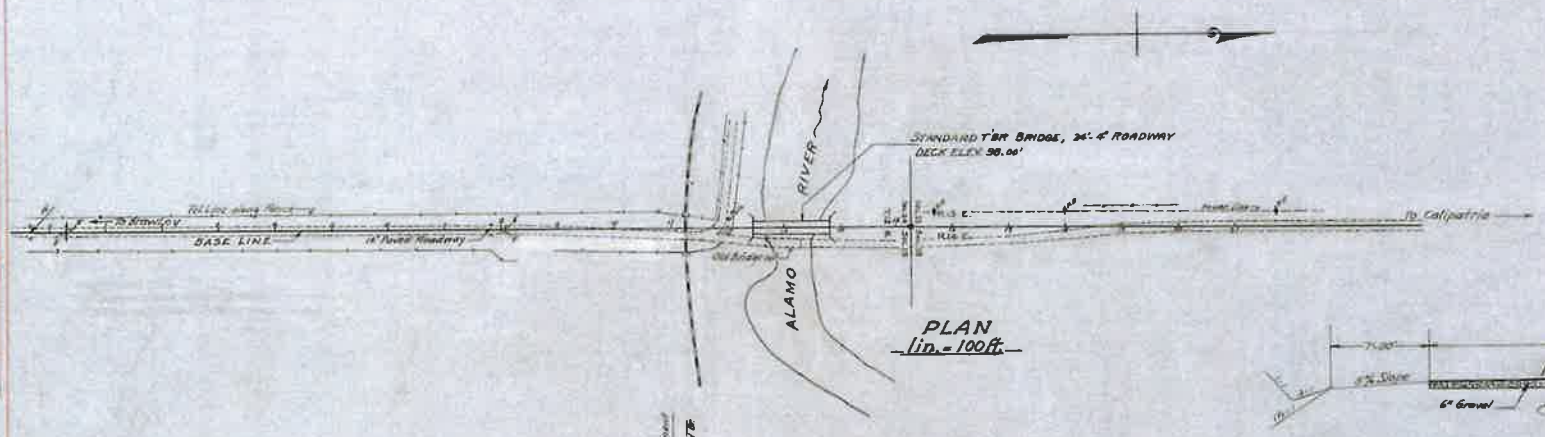
APPENDIX C

As-Built Drawing

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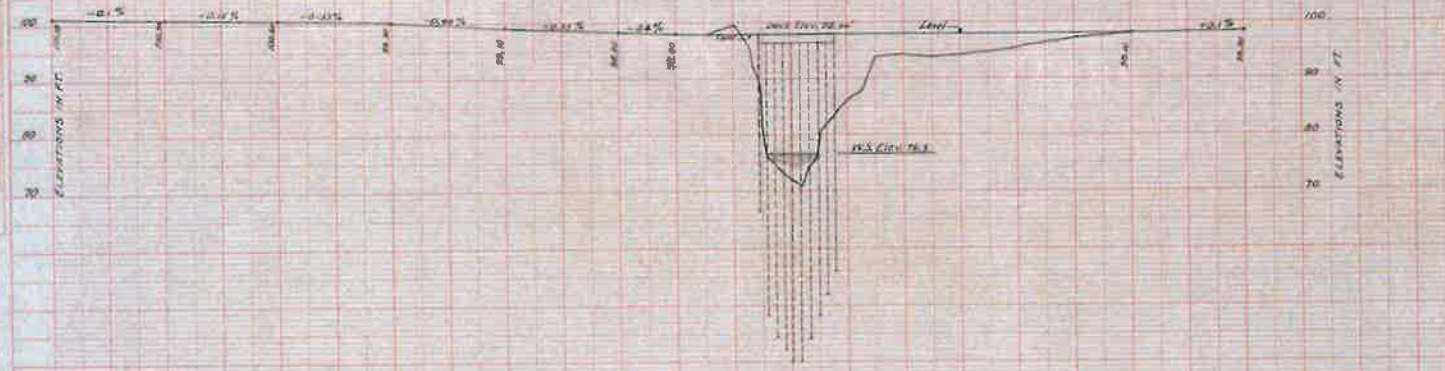
KLEINFELDER 770 First Ave, Suite 400, San Diego, CA 92101 p | 619.831.4600





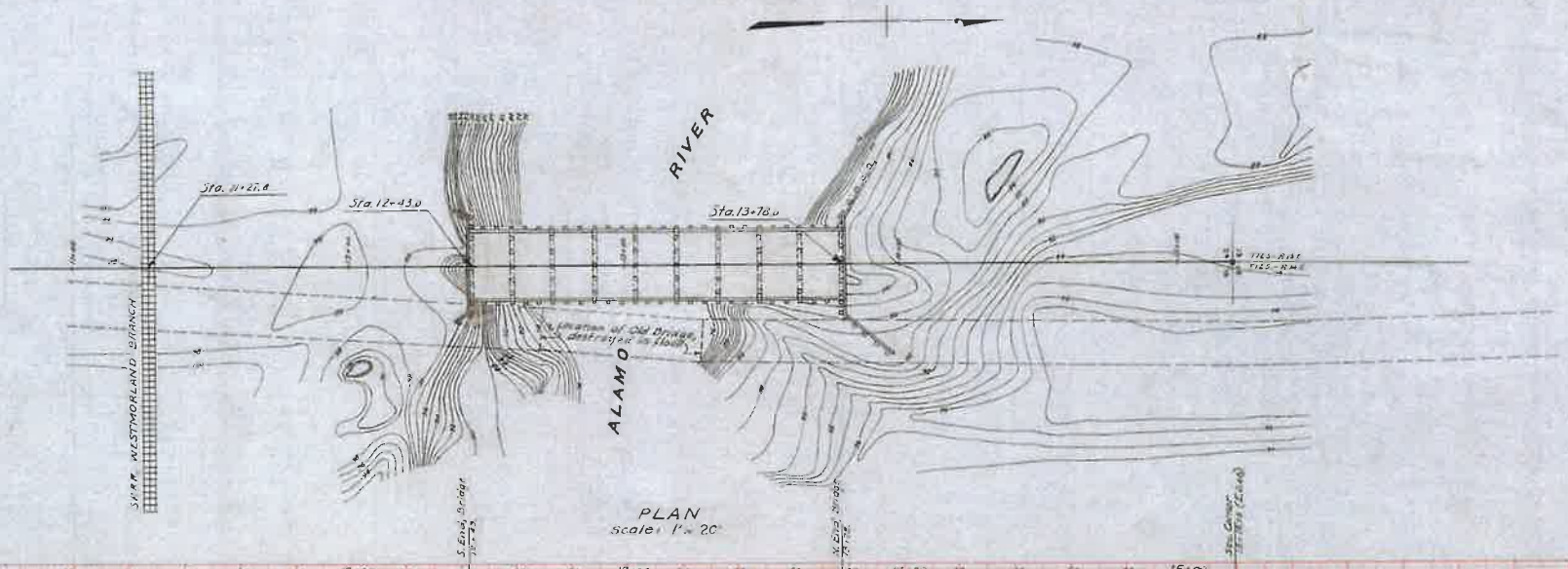


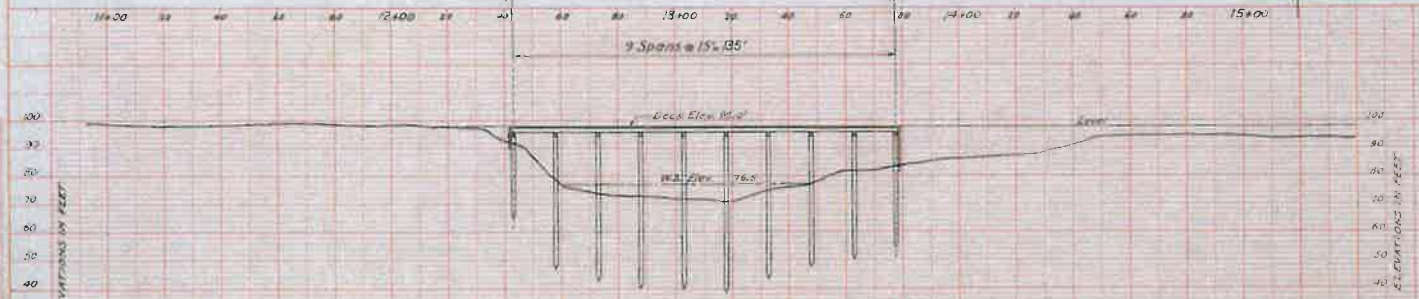
TYPICAL SECTION
Scale 1"=4'



DATE 2-12-1962	DEPARTMENT OF ENGINEERING
DRAWN	COUNTY OF IMPERIAL
TRACED	EL CENTRO, CALIF.
CHECKED	PROJECT No. 30-A
B-71 DRAWING NO. 527	ALAMO RIVER BRIDGE
	COUNTY ROAD WEST-"C" AT ROAD 64
	APPROVED CHIEF ENGINEER R.E. (S.I.)
C-6 18	Sheet 1 of 2 Sheets

58CQ105





PROFILE
Scale 1" = 20'

Top of Deck ..... Elev. 89.08
Bottom of Stringers ..... " 86.19
Pile Cut off ..... " 83.00

Recommended Length of Piles 20'-6"

B/M at Sta. 15+19.8
Brass Cap G.L.O. Mon.
Elev. 93.93

NOTE:
Standard Timber Bridge, No Skew.
Refer Drawing No. 508

DATE 2-20-48	DEPARTMENT OF ENGINEERING
DRAWN KSS	COUNTY OF IMPERIAL
TRACED [illegible]	EL CENTRO, CALIF.
CHECKED [illegible]	PROJECT No. 30-A
B-72 DRAWING NO. 827	ALAMO RIVER BRIDGE
	COUNTY RD. WEST "C" at RD. No. 64
	APPROVED John F. Rice CHIEF ENGINEER

C-6
18

Sheet 2 of 2 Sheets

APPENDIX D

Alamo River Cross Sections

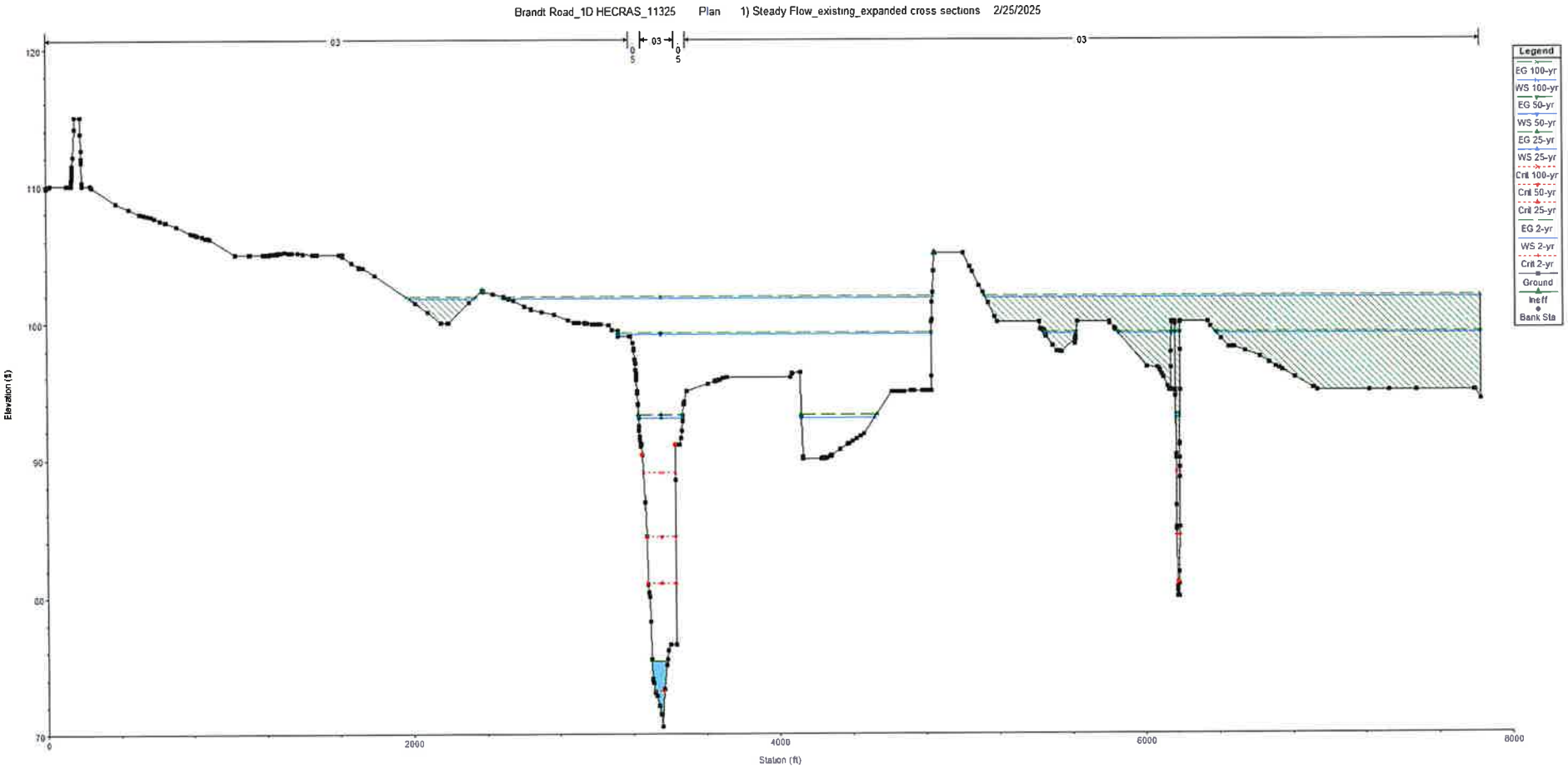
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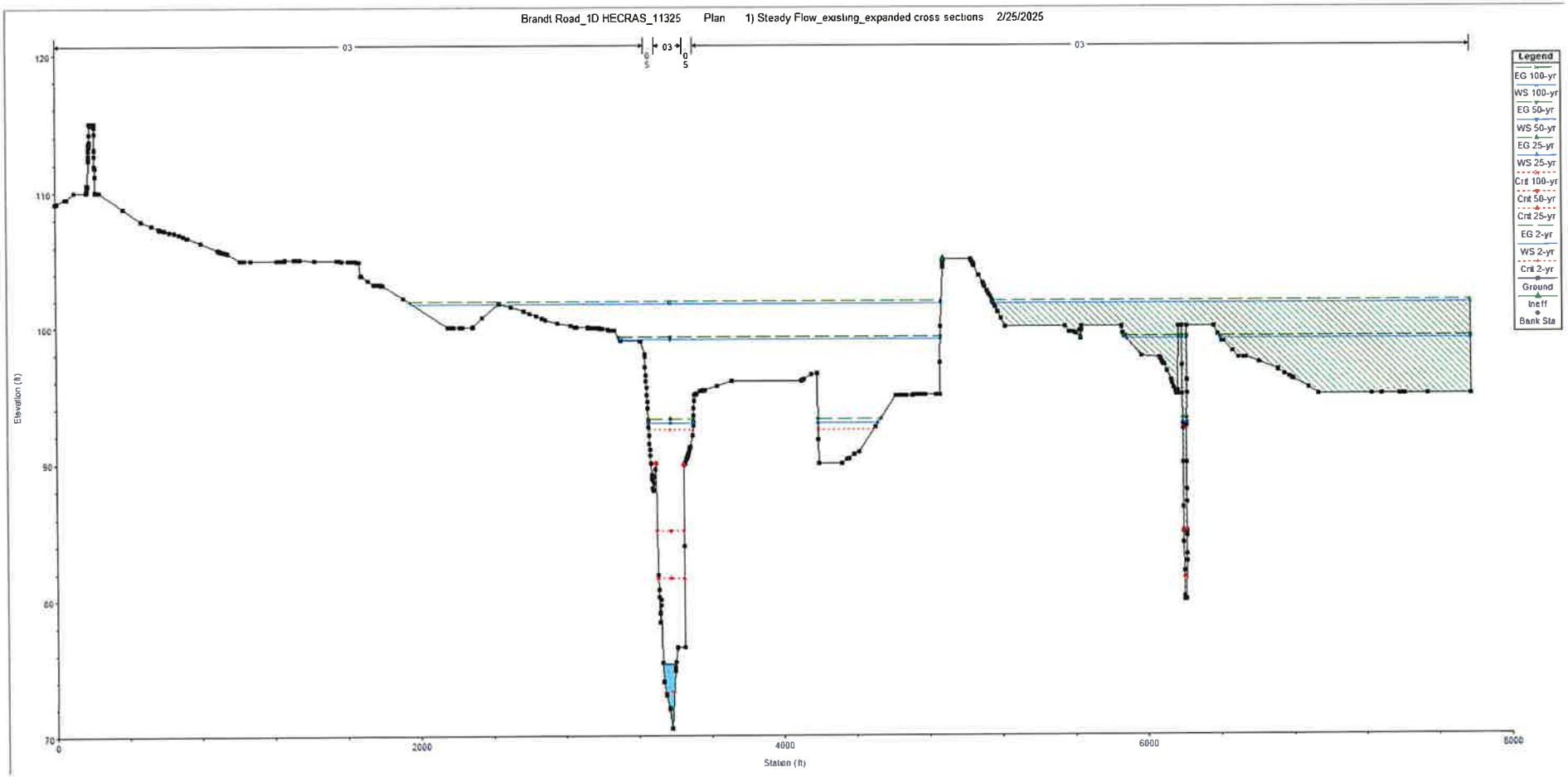
PLAN VIEW



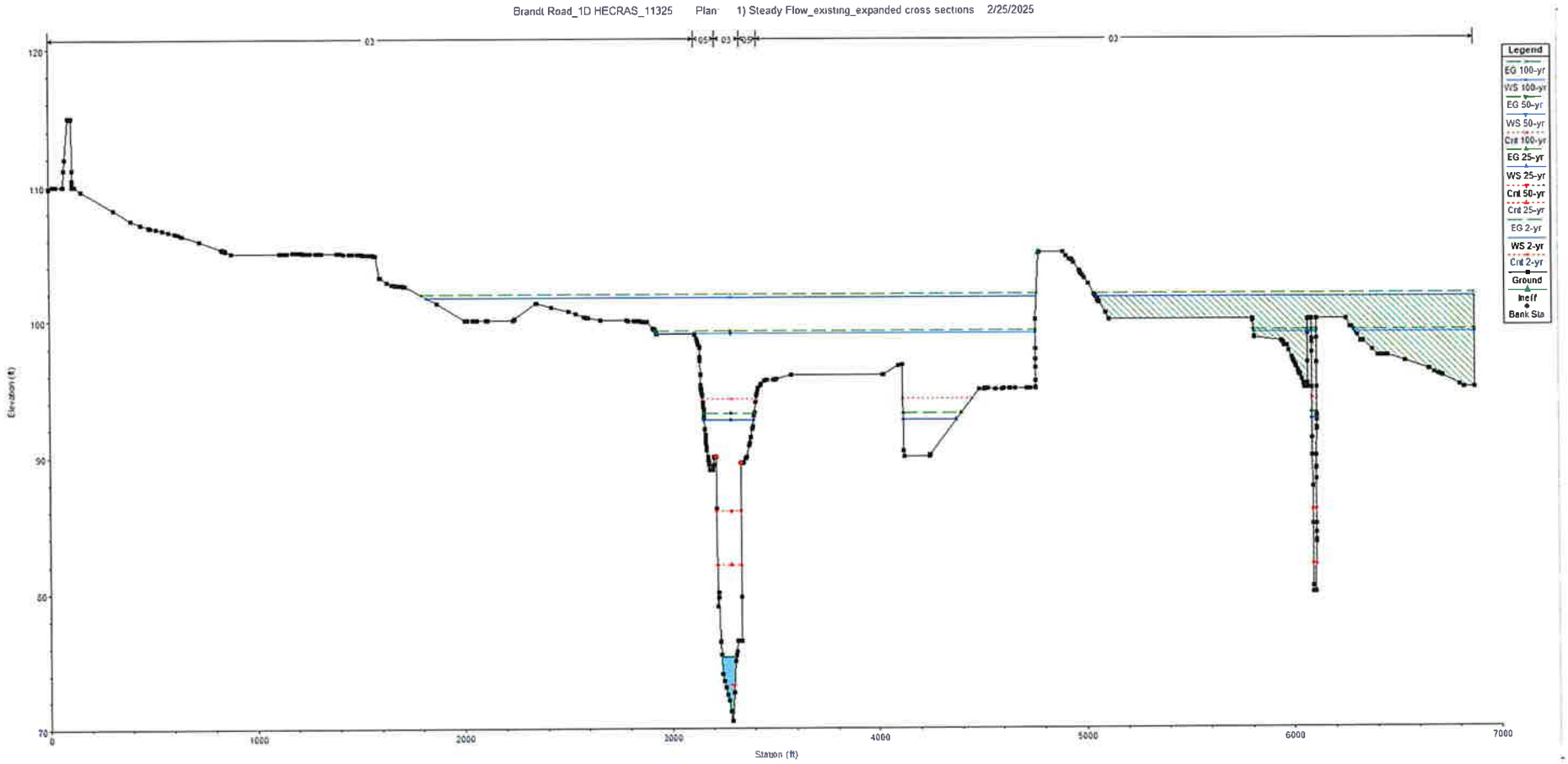
XS 600


Brandt Road_1D HECRAS_11325 Plan 1) Steady Flow_existing_expanded cross sections 2/25/2025
03
03
03
Legend
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
EG 25-yr
WS 25-yr
Crit 100-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
120
110
100
90
80
70
0
2000
4000
6000
8000
Station (ft)

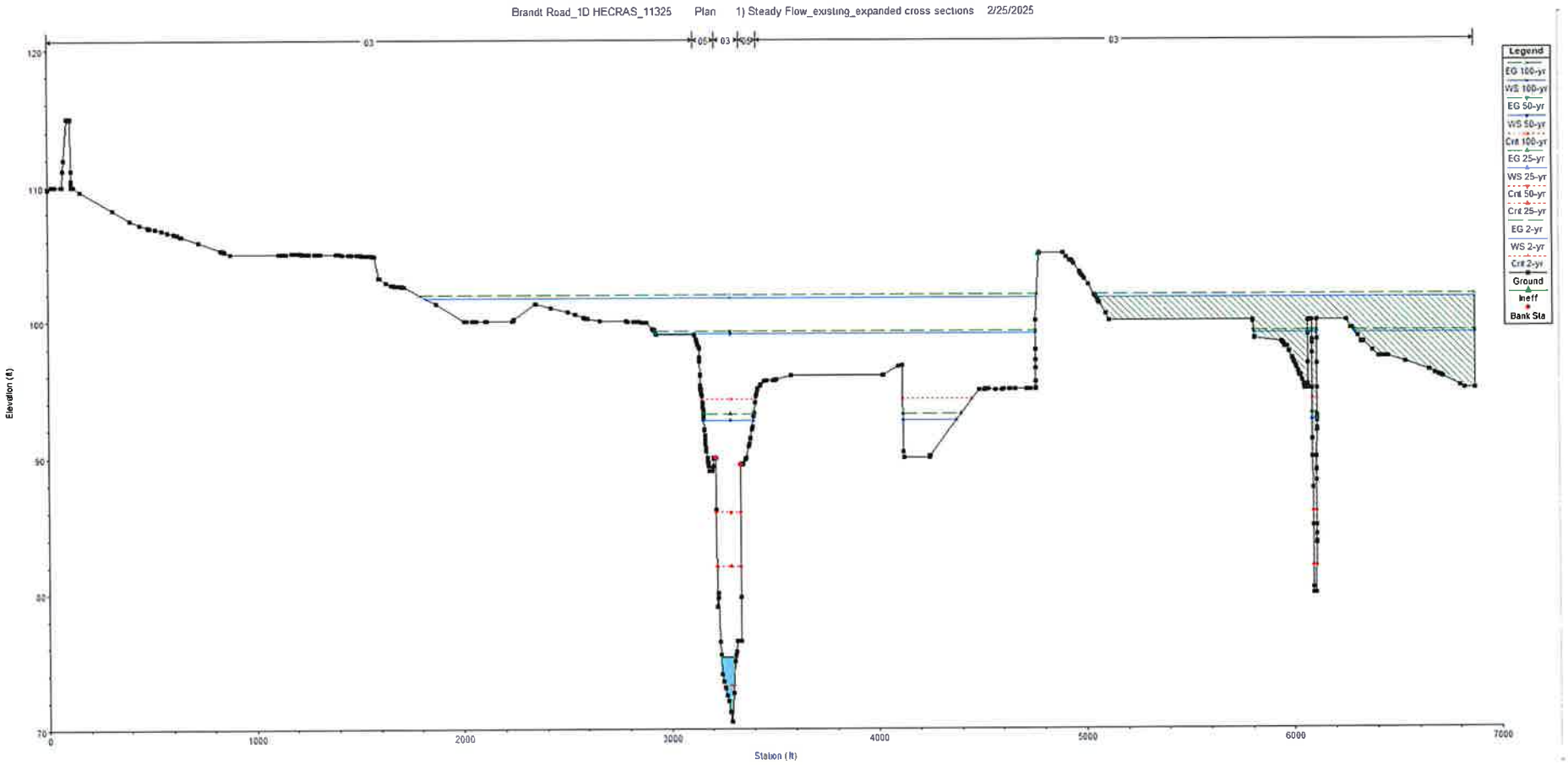
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WS 100-yr
EG 50-yr
WS 50-yr
EG 25-yr
WS 25-yr
Crit 100-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
120
110
100
90
80
70
0
2000
4000
6000
8000

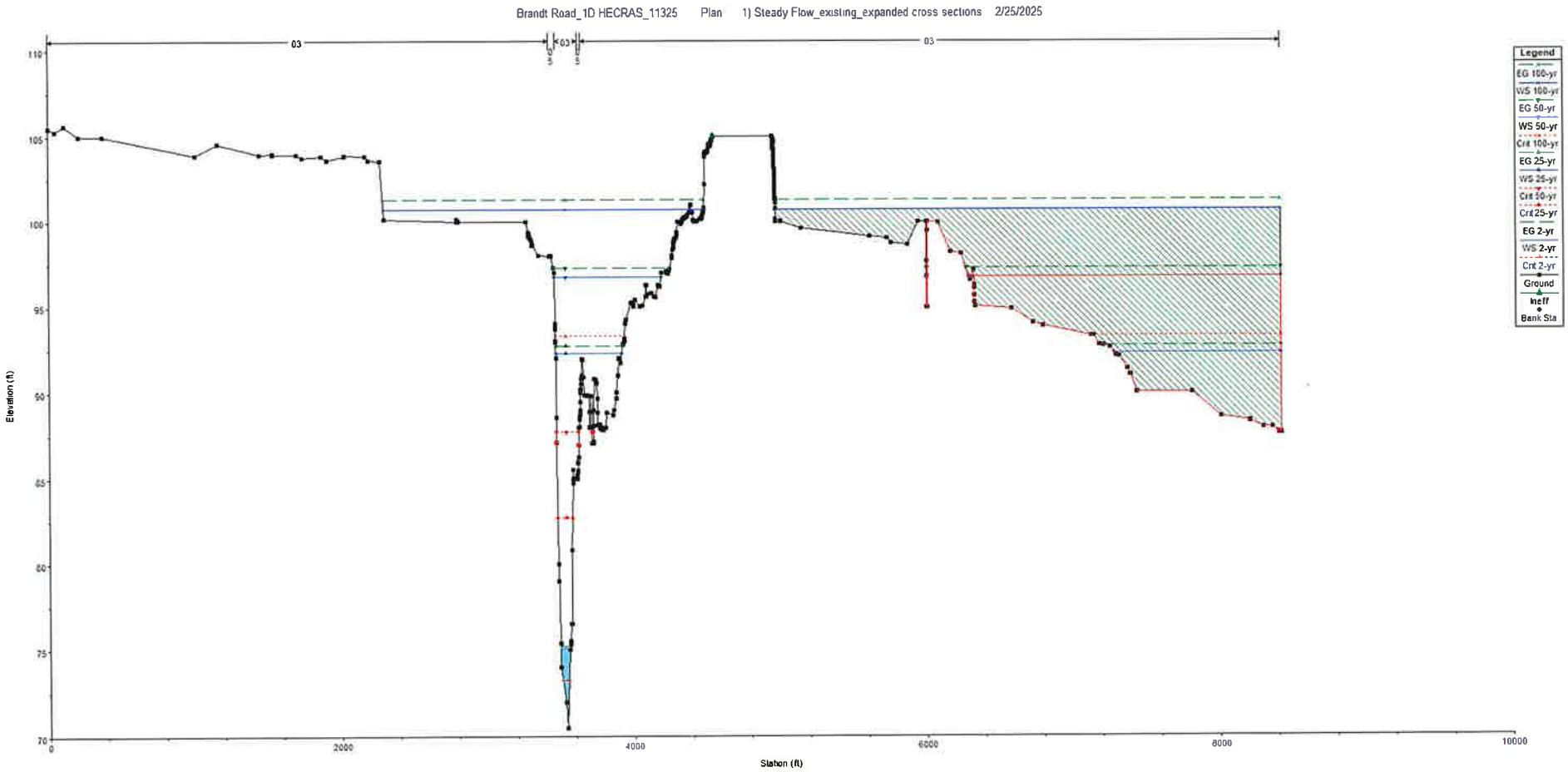
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WS 100-yr
EG 50-yr
WS 50-yr
Crit 100-yr
EG 25-yr
WS 25-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

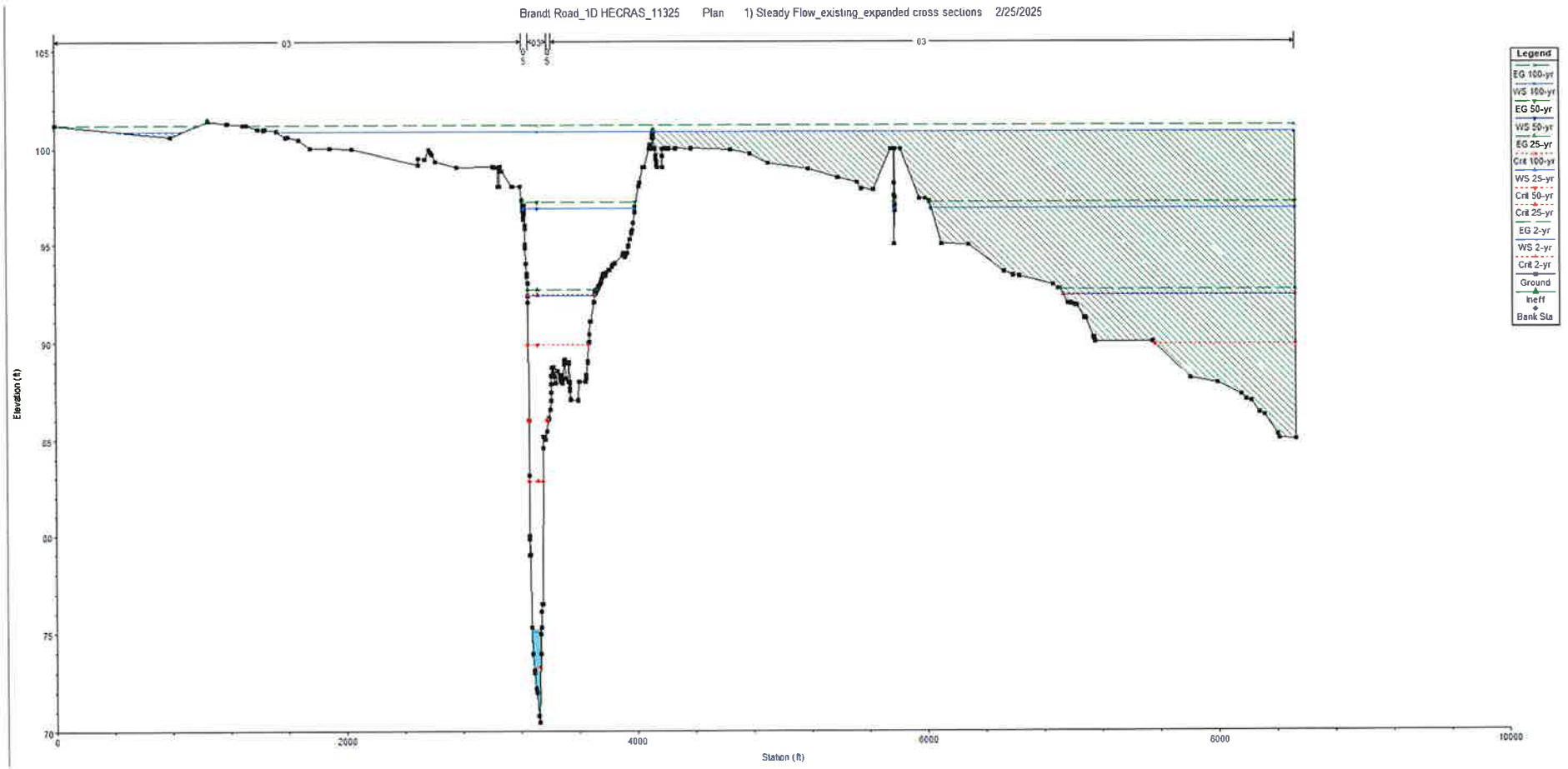
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05
03
05
03
Legend
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 100-yr
EG 25-yr
WS 25-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
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110
100
90
80
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3000
4000
5000
6000
7000
Station (ft)

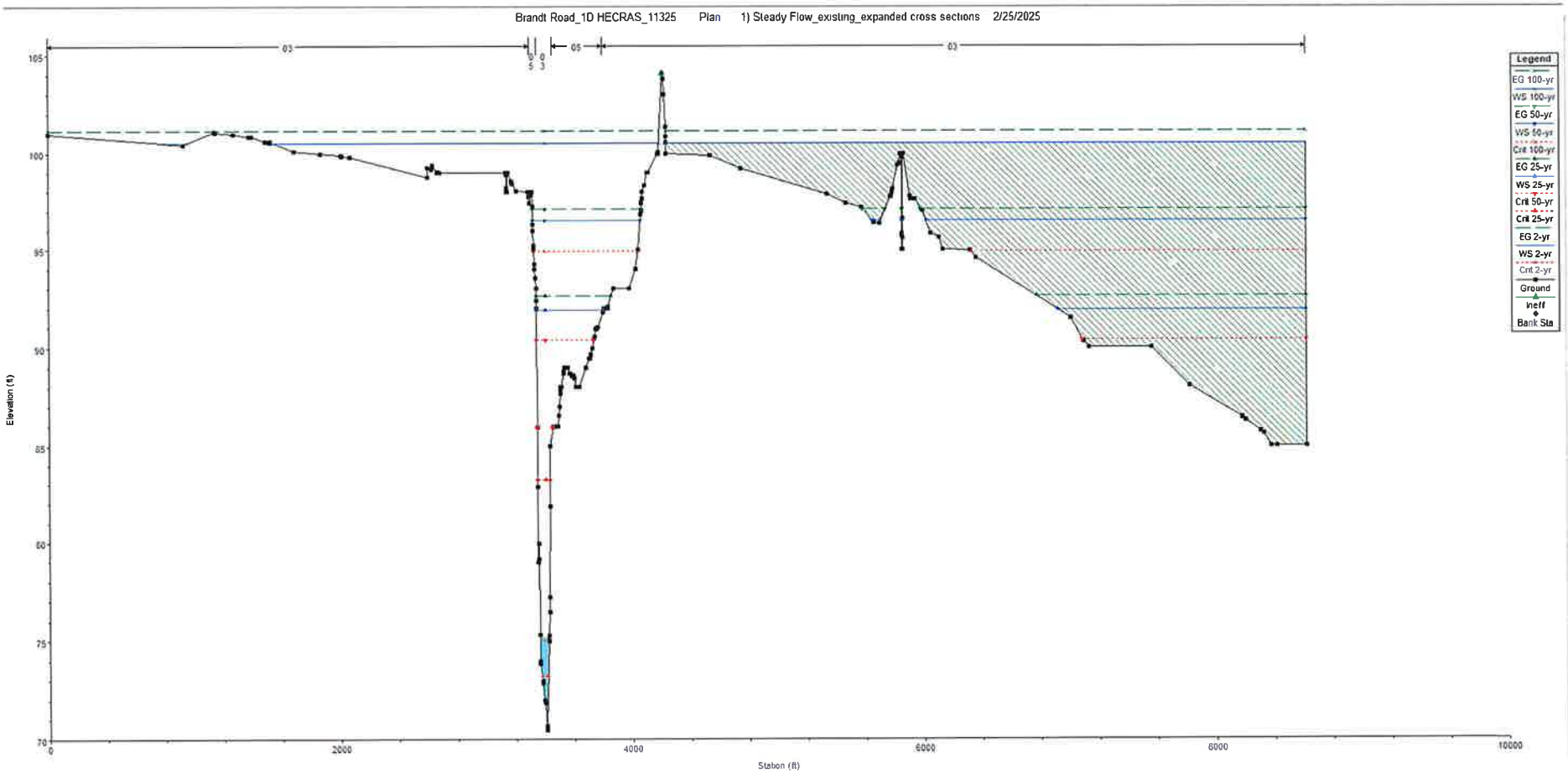
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03
03
Legend
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EG 50-yr
WS 50-yr
Crit 100-yr
EG 25-yr
WS 25-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
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6000
8000
10000
Station (ft)

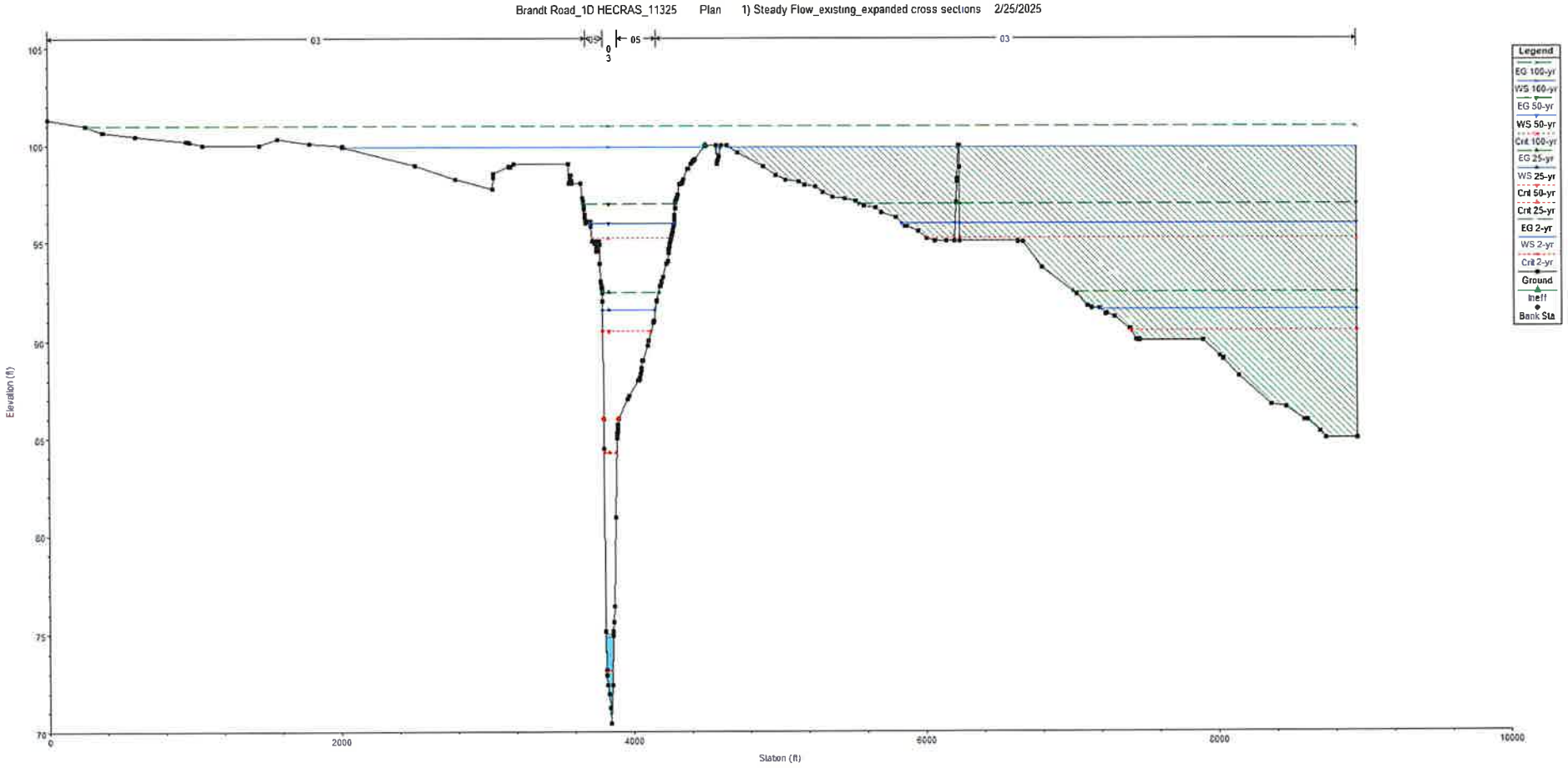
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EG 25-yr
Crit 100-yr
WS 25-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
105
100
95
90
85
80
75
70
0
2000
4000
6000
8000
10000

XS 300


Brandt Road_1D HECRAS_11325 Plan 1) Steady Flow_existing_expanded cross sections 2/25/2025
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WS 100-yr
EG 50-yr
WS 50-yr
Crit 100-yr
EG 25-yr
WS 25-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

XS 150


Brandt Road_1D HECRAS_11325 Plan 1) Steady Flow_existing_expanded cross sections 2/25/2025
03
05
05
03
Legend
EG 100-yr
WS 100-yr
EG 50-yr
WS 50-yr
Crit 100-yr
EG 25-yr
WS 25-yr
Crit 50-yr
Crit 25-yr
EG 2-yr
WS 2-yr
Crit 2-yr
Ground
Ineff
Bank Sta
Elevation (ft)
105
100
95
90
85
80
75
70
0
2000
4000
6000
8000
10000
Station (ft)

APPENDIX E

Alternative Schematics

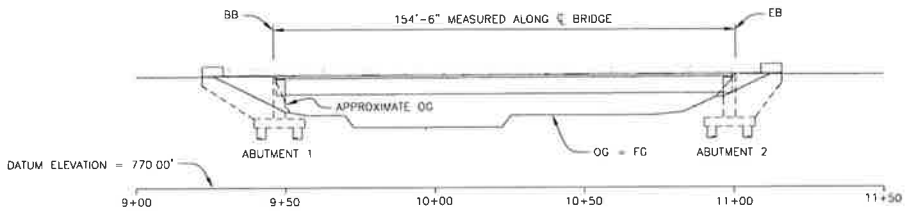
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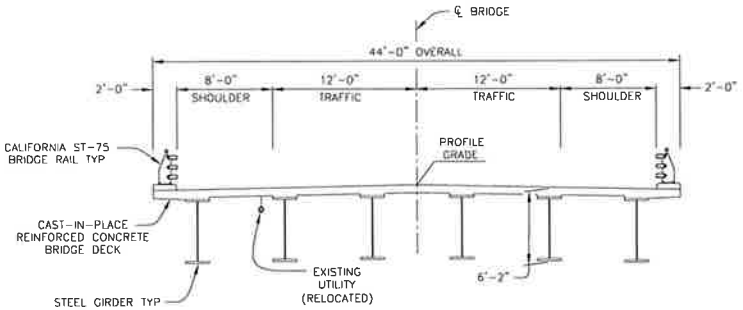
PROFILE GRADE

NO SCALE



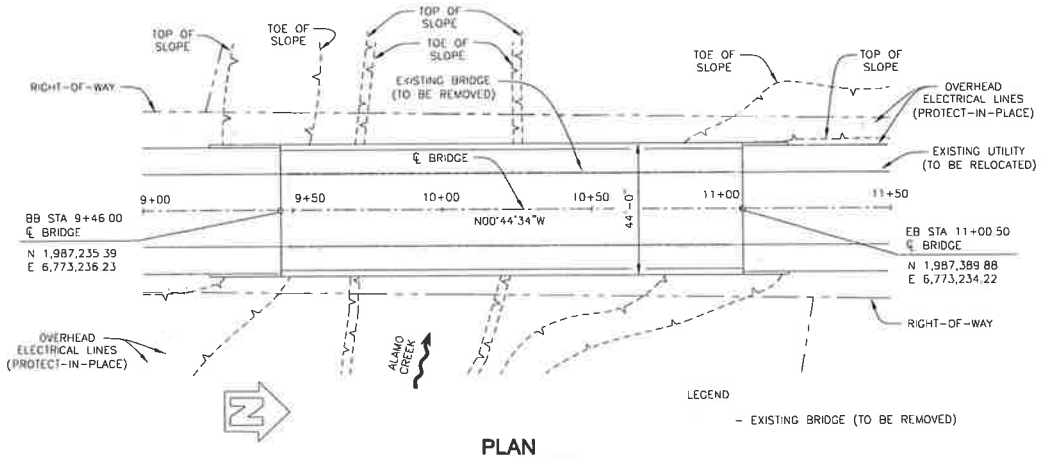
ELEVATION

1" = 20'-0"



TYPICAL SECTION

1" = 5'-0"



PLAN

1" = 20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

REVISION	DESCRIPTION	APPROVED	DATE

SCALE: AS SHOWN
ROAD FILE NO
PROJECT NO

DESIGNED: S MEGALLY | DRAWN: T. BRITTAIN | CHECKED: K BURNELL
ENGINEER OF WORK | R.C.E. NO. | DATE

KLEINFELDER
Bright people. Right Solutions.

APPROVED
PUBLIC WORKS DIRECTOR | DATE

IMPERIAL COUNTY
BRANDT ROAD BRIDGE OVER ALAMO RIVER
BRIDGE REPLACEMENT
GENERAL PLAN – ALTERNATIVE 1

SHEET A1
1 OF 1

ORIGINAL SCALE:

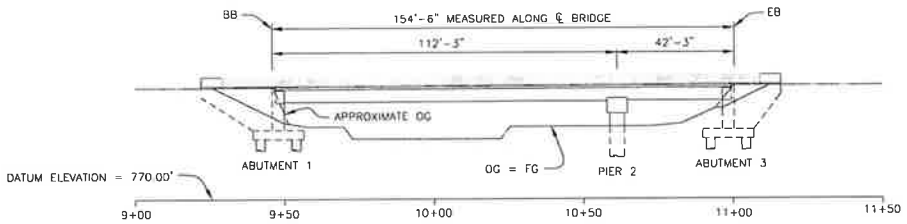
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PLOT DATE: 3/20/2025 11:20 AM



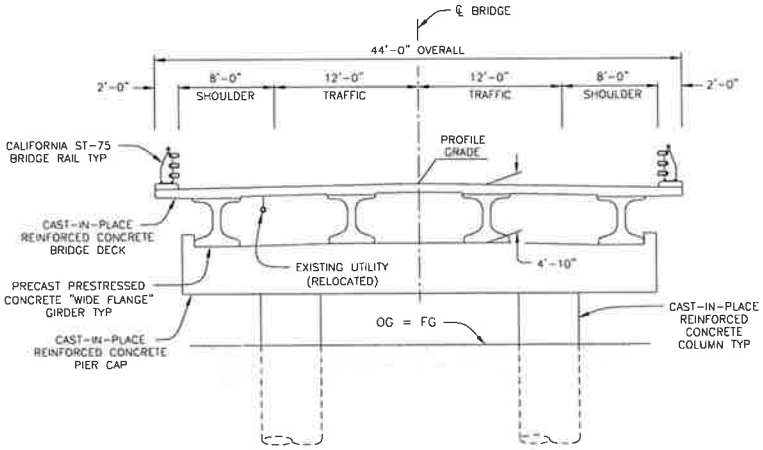
PROFILE GRADE

NO SCALE



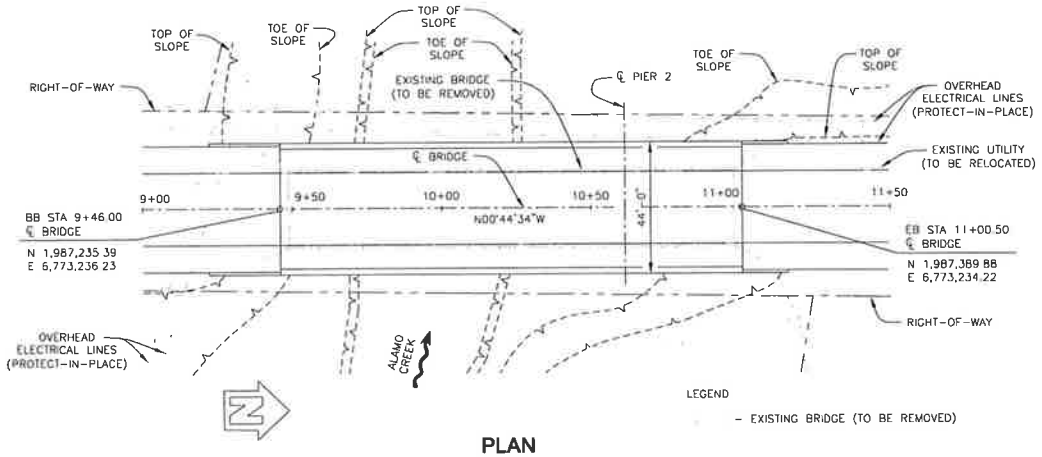
ELEVATION

1" = 20'-0"



TYPICAL SECTION

1" = 5'-0"



PLAN

1" = 20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

REVISION	DESCRIPTION	APPROVED	DATE

SCALE: AS SHOWN
ACAD FILE NO
PROJECT NO

DESIGNED: S MEGALLY | DRAWN: T. BRITTAIN | CHECKED: K BURNELL

ENGINEER OF WORK | R.C.E. NO | DATE

KLEINFELDER
Bright people. Right Solutions.

APPROVED
PUBLIC WORKS DIRECTOR | DATE

IMPERIAL COUNTY

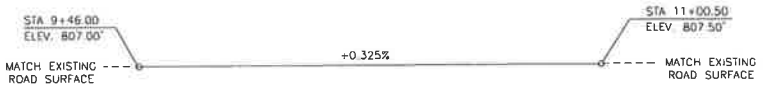
BRANDT ROAD BRIDGE OVER ALAMO RIVER
BRIDGE REPLACEMENT
GENERAL PLAN - ALTERNATIVE 2

SHEET A2
1 OF 1

ORIGINAL SCALE:

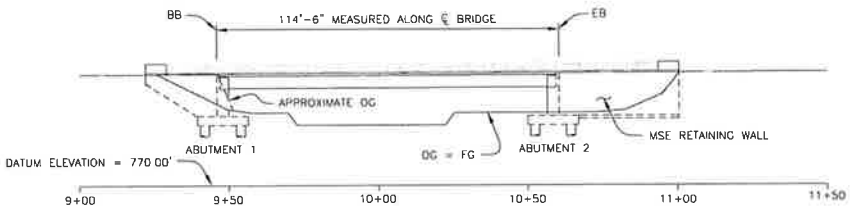
FILE PATH: C:\Users\TBritain\OneDrive - Kleinfelder\Desktop\KLF Folders\2500 1840 Brandt Road Bridge\Brandt Alternatives 3-20-25.dwg

PLOT DATE: 3/20/2025 11:20 AM



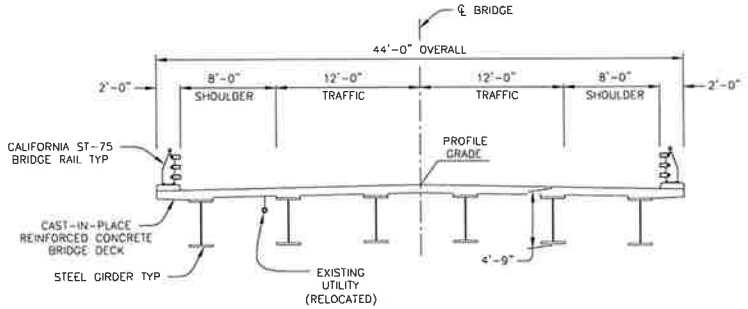
PROFILE GRADE

NO SCALE



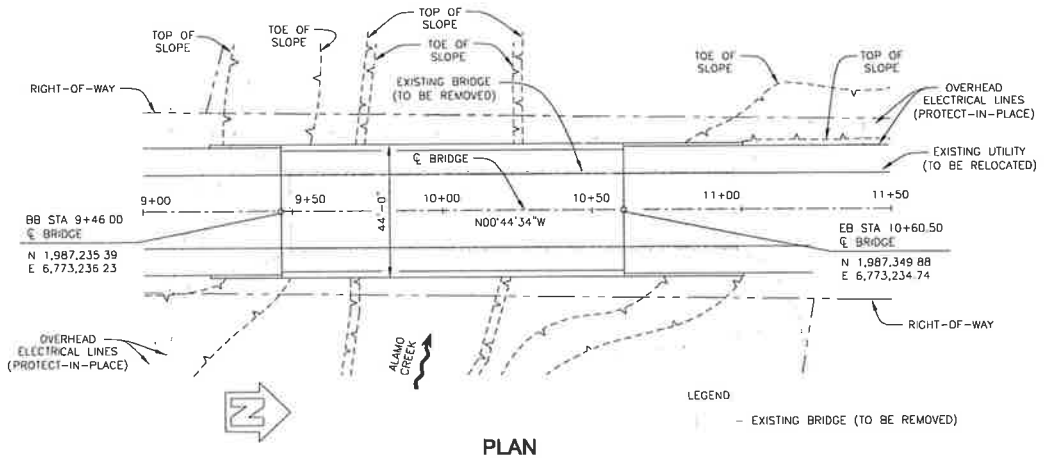
ELEVATION

1" = 20'-0"



TYPICAL SECTION

1" = 5'-0"



PLAN

1" = 20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

REVISION	DESCRIPTION	APPROVED	DATE

SCALE: AS SHOWN
ACAD FILE NO.
PROJECT NO.

DESIGNED: S. MEGALLY | DRAWN: T. BRITTAIN | CHECKED: K. BURNELL
ENGINEER OF WORK | R.C.E. NO. | DATE

KLEINFELDER
Bright people. Right Solutions.

APPROVED
PUBLIC WORKS DIRECTOR | DATE

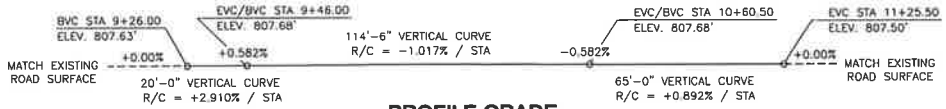
IMPERIAL COUNTY
BRANDT ROAD BRIDGE OVER ALAMO RIVER
BRIDGE REPLACEMENT
GENERAL PLAN - ALTERNATIVE 3A

SHEET A3
1 OF 1

ORIGINAL SCALE:

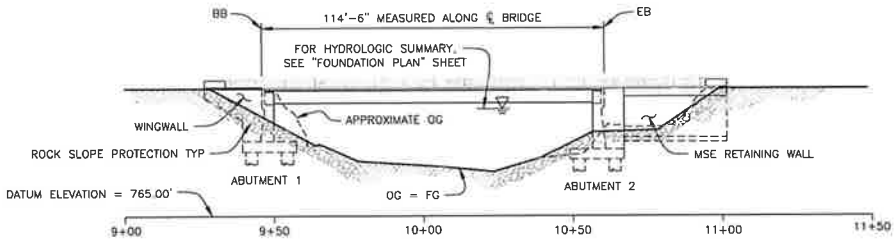
FILE PATH: C:\Users\TBrittain\OneDrive - Kleinfelder\Desktop\KLF Folders\2500 1840 Brandt Road Bridge\Brandt Alternatives 3-20-25.dwg

PLOT DATE: 3/20/2025 11:20 AM



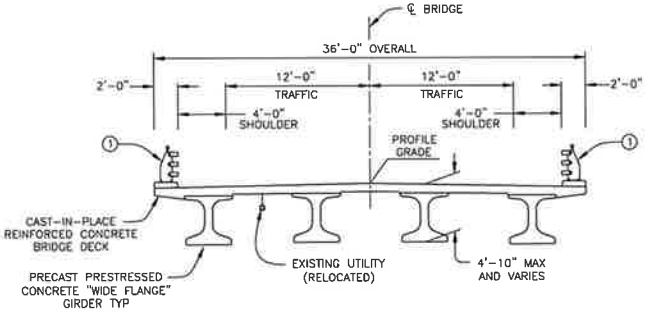
PROFILE GRADE

NO SCALE



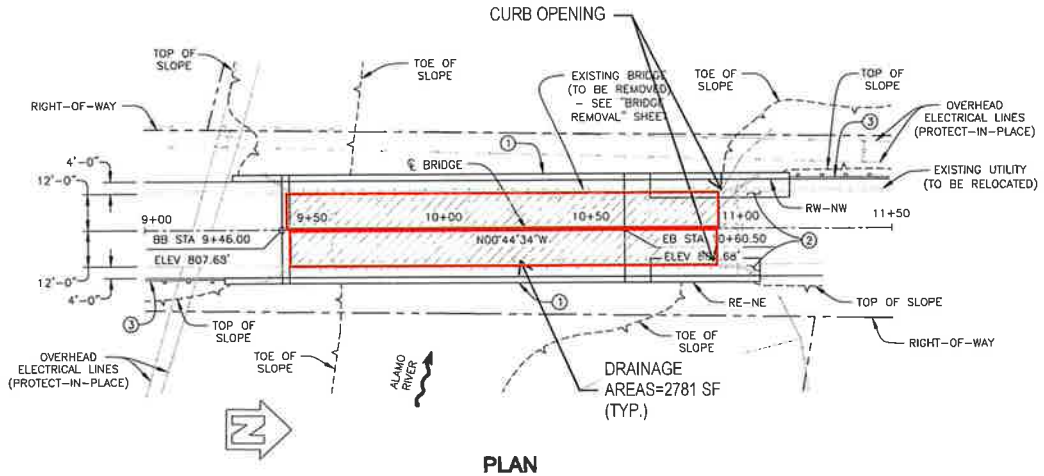
ELEVATION

1" = 20'-0"



TYPICAL SECTION

1" = 5'-0"



PLAN

1" = 20'-0"

LEGEND:

- EXISTING BRIDGE (TO BE REMOVED)
- INDICATES NEW STRUCTURE

NOTES:

1. CALIFORNIA ST-75 BRIDGE RAIL
2. BARRIER SLAB
3. MGS - SEE "ROADWAY PLANS"

NOTE
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

REVISION	DESCRIPTION	APPROVED	DATE

SCALE: AS SHOWN
ACAD FILE NO
PROJECT NO

DESIGNED: S. MEGALLY | DRAWN: T. BRITTAIN | CHECKED: K. BURNELL

ENGINEER OF WORK | R.C.E. NO. | DATE

KLEINFELDER
770 FIRST AVENUE, SUITE 402 SAN DIEGO, CA. 92101 (619) 831-4600

APPROVED

PUBLIC WORKS DIRECTOR | DATE

IMPERIAL COUNTY

BRANDT ROAD BRIDGE OVER ALAMO RIVER
BRIDGE REPLACEMENT
GENERAL PLAN

SHEET S-01
12 OF 34

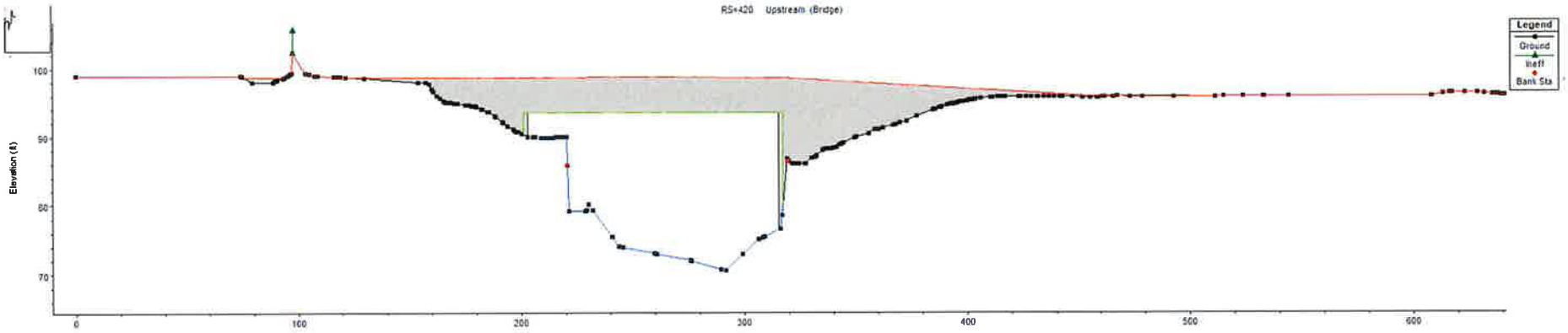
ORIGINAL SCALE:

65% SUBMITTAL - NOT FOR CONSTRUCTION

FILE PATH: C:\Users\TBrittain\OneDrive - Kleinfelder\Desktop\KLF Folders\2500 1840 Brandt Road Bridge\Brandt Sheets 8-21-25.dwg

PLOT DATE: 8/21/2025 9:58 AM

ALTERNATIVE 3B- HEC-RAS



Deck/Roadway Data Editor

Distance	Width	Weir Coef
50.	36.	2.6

Clear | Del Row | Ins Row | Copy US to DS

	Upstream			Downstream		
	Station	high chord	low chord	Station	high chord	low chord
1	50	98.68	80	3400	98.68	75
2	200.99	98.68	80	3480.99	98.68	75
3	200.99	98.68	93.58	3480.99	98.68	93.58
4	258	98.85	93.58	3539	98.85	93.58
5	317.51	98.68	93.58	3597.51	98.68	93.58
6	317.51	98.68	80	3597.51	98.68	80
7	455	96	80	3983	96	80
8	500	96	80	4050	90	80

U.S Embankment SS: 0 D.S Embankment SS: 0

Weir Data

Max Submergence: 0.95 Min Weir Flow El:

Weir Crest Shape

(•) Broad Crested

( ) Ogee

OK | Cancel

Enter distance between upstream cross section and deck/roadway. (ft)

APPENDIX F

Peak Flow Calculations

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Percent Annual Exceedance Probability	Storm Event	Desert (region 6) (cfs)
50	2 year storm	346.76
20	5 year storm	2019.95
10	10 year storm	5083.53
4	25 year storm	13567.31
2	50 year storm	25585.99
1	100 year storm	45448.80
0.5	200 year storm	76421.31
0.2	500 year storm	144089.53

Drainage Area	1042.7	sq mi
	667328	acres

Percent annual exceedance probability	Hydrologic region (shown in pl. 1)		
	Central Coast (Region 4)	South Coast (Region 5)	Desert (Region 6)
50	$0.00459(DRNAREA)^{0.856}(PRECIP)^{2.58}$	$3.60(DRNAREA)^{0.672}(PRECIP)^{0.755}$	$10.3(DRNAREA)^{0.506}$
20	$0.0984(DRNAREA)^{0.852}(PRECIP)^{1.97}$	$7.43(DRNAREA)^{0.739}(PRECIP)^{0.872}$	$60.0(DRNAREA)^{0.506}$
10	$0.460(DRNAREA)^{0.846}(PRECIP)^{1.66}$	$6.56(DRNAREA)^{0.783}(PRECIP)^{1.07}$	$151(DRNAREA)^{0.506}$
4	$2.13(DRNAREA)^{0.842}(PRECIP)^{1.34}$	$4.71(DRNAREA)^{0.832}(PRECIP)^{1.32}$	$403(DRNAREA)^{0.506}$
2	$5.32(DRNAREA)^{0.840}(PRECIP)^{1.15}$	$3.84(DRNAREA)^{0.864}(PRECIP)^{1.47}$	$760(DRNAREA)^{0.506}$
1	$11.0(DRNAREA)^{0.840}(PRECIP)^{0.994}$	$3.28(DRNAREA)^{0.893}(PRECIP)^{1.59}$	$1,350(DRNAREA)^{0.506}$
0.5	$20.3(DRNAREA)^{0.840}(PRECIP)^{0.865}$	$2.84(DRNAREA)^{0.915}(PRECIP)^{1.70}$	$2,270(DRNAREA)^{0.506}$
0.2	$39.0(DRNAREA)^{0.842}(PRECIP)^{0.729}$	$2.31(DRNAREA)^{0.943}(PRECIP)^{1.83}$	$4,280(DRNAREA)^{0.506}$

Brandt Road

Region ID: CA
Workspace ID: CA20241031175614202000
Clicked Point (Latitude, Longitude): 33.11793, -115.56285
Time: 2024-10-31 10:56:39 -0700



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
DRNAREA	Area that drains to a point on a stream	1042.7	square miles

Peak-Flow Statistics

Peak-Flow Statistics Parameters [2012 5113 Region 6 Desert]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1042.7	square miles	0.04	173

Peak-Flow Statistics Disclaimers [2012 5113 Region 6 Desert]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Peak-Flow Statistics Flow Report [2012 5113 Region 6 Desert]

Statistic	Value	Unit
50-percent AEP flood	347	ft^3/s
20-percent AEP flood	2020	ft^3/s
10-percent AEP flood	5080	ft^3/s
4-percent AEP flood	13600	ft^3/s
2-percent AEP flood	25600	ft^3/s
1-percent AEP flood	45400	ft^3/s

Statistic	Value	Unit
0.5-percent AEP flood	76400	ft^3/s
0.2-percent AEP flood	144000	ft^3/s

Peak-Flow Statistics Citations

Gotvald, A.J., Barth, N.A., Veilleux, A.G., and Parrett, Charles,2012, Methods for determining magnitude and frequency of floods in California, based on data through water year 2006: U.S. Geological Survey Scientific Investigations Report 2012–5113, 38 p., 1 pl. (http://pubs.usgs.gov/sir/2012/5113/)

Bankfull Statistics

Bankfull Statistics Parameters [95.0 Percent (991 square miles) Intermontane Plateau D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1042.7	square miles	3.62934	7579.9152

Bankfull Statistics Parameters [95.0 Percent (991 square miles) Basin and Range P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1042.7	square miles	3.949803	5008.971825

Bankfull Statistics Parameters [95.0 Percent (991 square miles) USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1042.7	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [95.0 Percent (991 square miles) Intermontane Plateau D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	96.7	ft
Bieger_D_channel_depth	3.09	ft
Bieger_D_channel_cross_sectional_area	284	ft^2

Bankfull Statistics Flow Report [95.0 Percent (991 square miles) Basin and Range P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	112	ft
Bieger_P_channel_depth	2.94	ft
Bieger_P_channel_cross_sectional_area	313	ft^2

Bankfull Statistics Flow Report [95.0 Percent (991 square miles) USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	143	ft
Bieger_USA_channel_depth	5.3	ft
Bieger_USA_channel_cross_sectional_area	729	ft^2

Bankfull Statistics Citations

Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_campaign=PDFCoverPages)

Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [92.0 Percent (963 square miles) Crippen Bue Region 16]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1042.7	square miles	0.1	1000

Maximum Probable Flood Statistics Disclaimers [92.0 Percent (963 square miles) Crippen Bue Region 16]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors. Weighted flows were not calculated. Users should be careful to evaluate the applicability of the provided estimates. Percentage of area falls outside where region is undefined. Whole estimates have been provided using available regional equations.

Maximum Probable Flood Statistics Flow Report [92.0 Percent (963 square miles) Crippen Bue Region 16]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	985000	ft^3/s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D.1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (https://pubs.usgs.gov/wsp/1887/report.pdf)

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Application Version: 4.24.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

APPENDIX G

HEC-RAS Results

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HEC-RAS River: Alamo River Reach: Alamo River

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Alamo River	600	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.55	75.43	73.14	75.46	0.000285	1.57	220.49	84.30	0.17
Alamo River	600	2-yr	Steady Flow_Alt 3B	347.00	70.55	75.30	73.14	75.34	0.000329	1.65	209.82	83.07	0.18
Alamo River	600	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.55	86.23	77.59	86.36	0.000155	2.87	1770.40	179.21	0.15
Alamo River	600	10-yr	Steady Flow_Alt 3B	5084.00	70.55	85.89	77.59	86.02	0.000170	2.96	1714.84	177.78	0.16
Alamo River	600	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.55	93.21	81.03	93.44	0.000182	4.06	4053.12	678.02	0.18
Alamo River	600	25-yr	Steady Flow_Alt 3B	13567.00	70.55	92.96	81.03	93.22	0.000202	4.24	3899.86	662.30	0.19
Alamo River	600	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.55	99.18	84.35	99.29	0.000085	3.41	11604.15	3537.00	0.13
Alamo River	600	50-yr	Steady Flow_Alt 3B	25586.00	70.55	98.93	84.35	99.07	0.000108	3.82	11180.55	3528.12	0.14
Alamo River	600	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.55	101.82	89.01	101.97	0.000106	4.10	16942.08	5361.71	0.14
Alamo River	600	100-yr	Steady Flow_Alt 3B	45449.00	70.55	101.61	89.01	101.80	0.000136	4.65	16469.65	5293.62	0.16
Alamo River	550	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.54	75.39	73.24	75.45	0.000398	1.87	185.78	70.33	0.20
Alamo River	550	2-yr	Steady Flow_Alt 3B	347.00	70.54	75.26	73.24	75.32	0.000459	1.97	176.58	69.04	0.22
Alamo River	550	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.54	86.19	78.10	86.33	0.000195	3.18	1600.51	164.43	0.17
Alamo River	550	10-yr	Steady Flow_Alt 3B	5084.00	70.54	85.84	78.10	86.01	0.000216	3.28	1549.60	163.83	0.18
Alamo River	550	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.54	93.12	81.60	93.43	0.000232	4.64	3701.66	611.50	0.20
Alamo River	550	25-yr	Steady Flow_Alt 3B	13567.00	70.54	92.88	81.60	93.20	0.000247	4.76	3559.70	597.35	0.20
Alamo River	550	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.54	99.12	85.10	99.28	0.000119	4.05	11026.23	3453.01	0.15
Alamo River	550	50-yr	Steady Flow_Alt 3B	25586.00	70.54	98.89	85.10	99.07	0.000129	4.21	10631.93	3307.65	0.15
Alamo River	550	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.54	101.77	92.43	101.96	0.000146	4.82	17068.13	5532.25	0.17
Alamo River	550	100-yr	Steady Flow_Alt 3B	45449.00	70.54	101.59	92.42	101.80	0.000155	4.96	16559.07	5446.62	0.17
Alamo River	500	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.52	75.37	73.20	75.43	0.000385	1.87	185.71	68.45	0.20
Alamo River	500	2-yr	Steady Flow_Alt 3B	347.00	70.52	75.24	73.20	75.30	0.000446	1.97	176.54	67.36	0.21
Alamo River	500	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.52	86.11	78.14	86.33	0.000270	3.79	1342.20	132.56	0.20
Alamo River	500	10-yr	Steady Flow_Alt 3B	5084.00	70.52	85.75	78.14	85.99	0.000298	3.91	1301.85	132.23	0.21
Alamo River	500	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.52	92.92	82.01	93.40	0.000362	5.76	3036.58	531.87	0.24
Alamo River	500	25-yr	Steady Flow_Alt 3B	13567.00	70.52	92.67	82.01	93.17	0.000390	5.92	2905.90	515.43	0.25
Alamo River	500	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.52	99.07	86.00	99.27	0.000164	4.71	10172.99	2690.53	0.17
Alamo River	500	50-yr	Steady Flow_Alt 3B	25586.00	70.52	98.83	86.00	99.05	0.000181	4.91	9767.21	2492.72	0.18
Alamo River	500	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.52	101.74	94.22	101.95	0.000181	5.30	16566.85	4774.18	0.18
Alamo River	500	100-yr	Steady Flow_Alt 3B	45449.00	70.52	101.55	94.22	101.78	0.000195	5.47	16031.97	4745.35	0.19
Alamo River	460.9	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.51	75.35	73.23	75.41	0.000421	1.93	180.24	68.03	0.21
Alamo River	460.9	2-yr	Steady Flow_Alt 3B	347.00	70.51	75.21	73.23	75.28	0.000489	2.03	170.89	66.69	0.22
Alamo River	460.9	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.51	86.00	78.25	86.31	0.000369	4.43	1146.91	102.91	0.23
Alamo River	460.9	10-yr	Steady Flow_Alt 3B	5084.00	70.51	85.62	78.25	85.95	0.000410	4.58	1109.49	98.55	0.24
Alamo River	460.9	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.51	92.64	82.70	93.35	0.000507	7.00	2423.15	391.34	0.29
Alamo River	460.9	25-yr	Steady Flow_Alt 3B	13567.00	70.51	92.30	82.70	93.07	0.000553	7.23	2293.75	370.71	0.30
Alamo River	460.9	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.51	98.98	87.29	99.26	0.000214	5.55	9066.84	1659.71	0.20
Alamo River	460.9	50-yr	Steady Flow_Alt 3B	25586.00	70.51	98.70	87.29	99.02	0.000241	5.85	8614.60	1643.04	0.21
Alamo River	460.9	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.51	101.63	96.58	101.93	0.000242	6.32	13440.00	2455.38	0.21
Alamo River	460.9	100-yr	Steady Flow_Alt 3B	45449.00	70.51	101.42	96.58	101.75	0.000260	6.52	13098.56	2446.17	0.22
Alamo River	420			Bridge									
Alamo River	386.2	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.49	75.11	73.24	75.18	0.000583	2.17	159.94	64.45	0.24
Alamo River	386.2	2-yr	Steady Flow_Alt 3B	347.00	70.49	75.11	73.24	75.18	0.000583	2.17	159.96	64.45	0.24
Alamo River	386.2	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.49	85.54	78.32	85.85	0.000548	4.46	1140.75	141.78	0.28
Alamo River	386.2	10-yr	Steady Flow_Alt 3B	5084.00	70.49	85.53	78.32	85.84	0.000548	4.46	1139.36	141.68	0.28
Alamo River	386.2	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.49	92.30	82.77	92.73	0.000392	5.54	3026.05	1592.62	0.26
Alamo River	386.2	25-yr	Steady Flow_Alt 3B	13567.00	70.49	92.28	82.77	92.71	0.000395	5.56	3013.89	1590.14	0.26
Alamo River	386.2	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.49	96.75	87.74	97.28	0.000393	6.64	5476.58	2846.74	0.27
Alamo River	386.2	50-yr	Steady Flow_Alt 3B	25586.00	70.49	96.73	87.74	97.26	0.000395	6.65	5461.23	2844.67	0.27
Alamo River	386.2	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.49	100.71	93.32	101.30	0.000402	7.63	9904.58	5632.85	0.28
Alamo River	386.2	100-yr	Steady Flow_Alt 3B	45449.00	70.49	100.69	93.32	101.28	0.000404	7.65	9863.94	5632.01	0.28
Alamo River	350	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.48	75.09	73.22	75.16	0.000589	2.19	158.21	63.04	0.24
Alamo River	350	2-yr	Steady Flow_Alt 3B	347.00	70.48	75.09	73.22	75.16	0.000589	2.19	158.21	63.04	0.24
Alamo River	350	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.48	85.48	78.38	85.82	0.001060	4.71	1078.66	258.00	0.28
Alamo River	350	10-yr	Steady Flow_Alt 3B	5084.00	70.48	85.47	78.38	85.81	0.000576	4.72	1077.34	266.95	0.28
Alamo River	350	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.48	92.37	82.86	92.68	0.000569	4.98	3305.21	2050.48	0.23
Alamo River	350	25-yr	Steady Flow_Alt 3B	13567.00	70.48	92.29	82.86	92.67	0.000362	5.43	3269.76	2043.50	0.25
Alamo River	350	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.48	96.89	89.87	97.20	0.000453	5.28	6236.27	3272.40	0.21
Alamo River	350	50-yr	Steady Flow_Alt 3B	25586.00	70.48	96.78	89.74	97.19	0.000327	6.14	6153.07	3264.12	0.24
Alamo River	350	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.48	100.88	92.43	101.20	0.000396	5.59	11874.15	7429.08	0.20
Alamo River	350	100-yr	Steady Flow_Alt 3B	45449.00	70.48	100.75	92.47	101.19	0.000318	6.85	11555.08	7193.47	0.23
Alamo River	300	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.46	75.06	73.20	75.13	0.000588	2.21	157.29	61.68	0.24
Alamo River	300	2-yr	Steady Flow_Alt 3B	347.00	70.46	75.06	73.20	75.13	0.000588	2.21	157.29	61.68	0.24
Alamo River	300	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.46	85.33	78.40	85.77	0.000609	5.33	954.09	359.31	0.29
Alamo River	300	10-yr	Steady Flow_Alt 3B	5084.00	70.46	85.33	78.40	85.77	0.000609	5.33	954.09	359.31	0.29
Alamo River	300	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.46	91.90	83.29	92.61	0.000636	7.20	2722.14	2152.53	0.32
Alamo River	300	25-yr	Steady Flow_Alt 3B	13567.00	70.46	91.90	83.29	92.61	0.000636	7.20	2722.14	2152.53	0.32
Alamo River	300	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.46	96.53	90.37	97.15	0.000505	7.63	5757.65	3400.32	0.30
Alamo River	300	50-yr	Steady Flow_Alt 3B	25586.00	70.46	96.53	90.37	97.15	0.000505	7.63	5757.54	3400.32	0.30
Alamo River	300	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.46	100.54	94.93	101.15	0.000483	8.43	11074.75	7174.71	0.30
Alamo River	300	100-yr	Steady Flow_Alt 3B	45449.00	70.46	100.54	94.93	101.15	0.000483	8.43	11073.95	7173.39	0.30
Alamo River	150	2-yr	Steady Flow_existing_expanded cross sections	347.00	70.42	74.88	73.13	74.99	0.000800	2.66	130.68	48.71	0.29
Alamo River	150	2-yr	Steady Flow_Alt 3B	347.00	70.42	74.88	73.13	74.99	0.000800	2.66	130.68	48.71	0.29
Alamo River	150	10-yr	Steady Flow_existing_expanded cross sections	5084.00	70.42	85.07	78.91	85.62	0.000802	5.95	854.33	310.89	0.34
Alamo River	150	10-yr	Steady Flow_Alt 3B	5084.00	70.42	85.07	78.91	85.62	0.000802	5.95	854.33	310.89	0.34
Alamo River	150	25-yr	Steady Flow_existing_expanded cross sections	13567.00	70.42	91.57	84.25	92.45	0.000801	7.98	2358.53	2111.89	0.36
Alamo River	150	25-yr	Steady Flow_Alt 3B	13567.00	70.42	91.57	84.25	92.45	0.000801	7.98	2358.53	2111.89	0.36
Alamo River	150	50-yr	Steady Flow_existing_expanded cross sections	25586.00	70.42	95.94	90.51	96.98	0.000801	9.47	4347.21	3652.00	0.38
Alamo River	150	50-yr	Steady Flow_Alt 3B	25586.00	70.42	95.94	90.51	96.98	0.000801	9.47	4347.21	3652.00	0.38
Alamo River	150	100-yr	Steady Flow_existing_expanded cross sections	45449.00	70.42	99.91	95.18	100.98	0.000801	10.72	8869.93	6770.52	0.39
Alamo River	150	100-yr	Steady Flow_Alt 3B	45449.00	70.42	99.91	95.18	100.98	0.000801	10.72	8869.93	6770.52	0.39

APPENDIX H

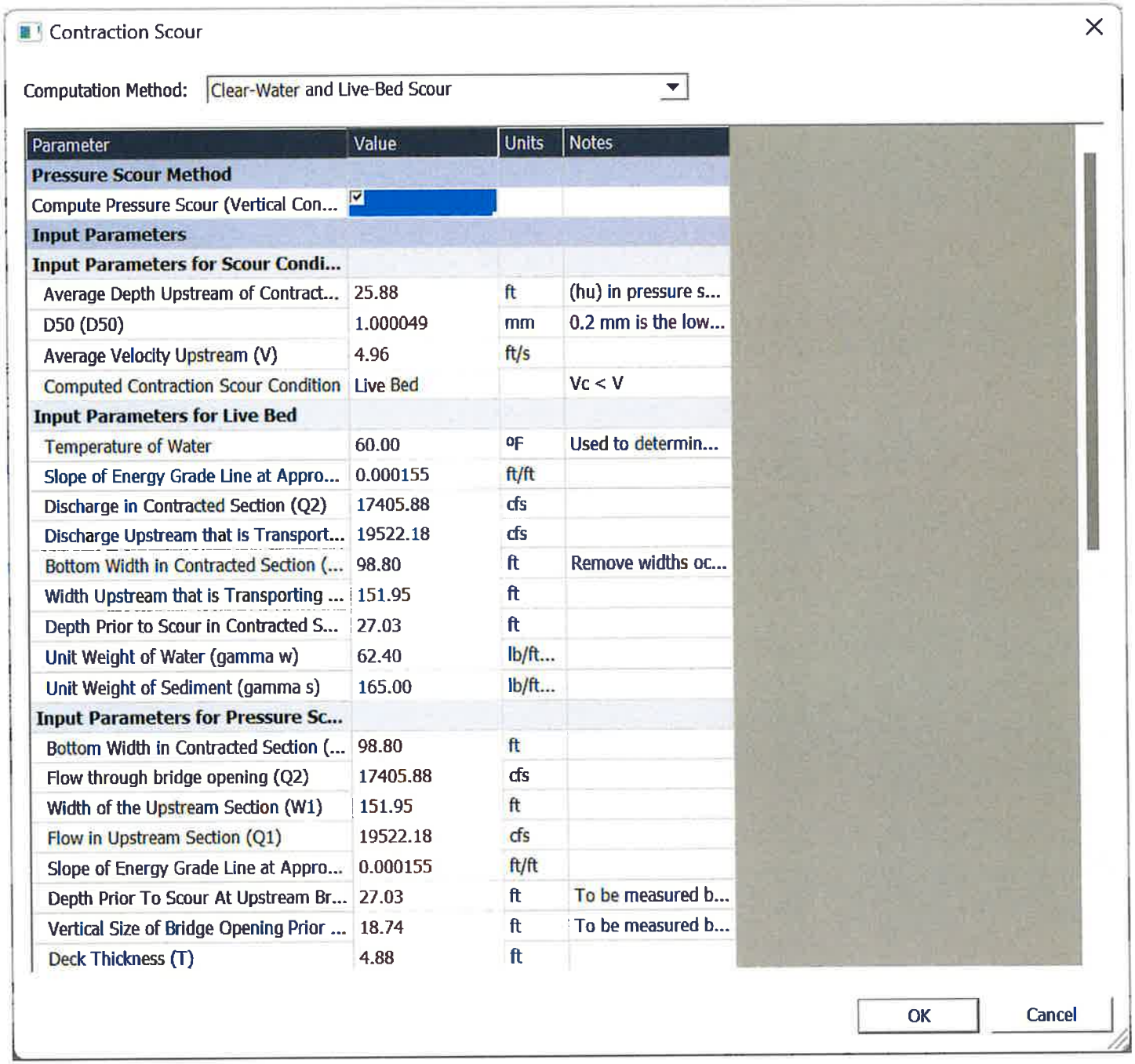
Scour Calculations and Results

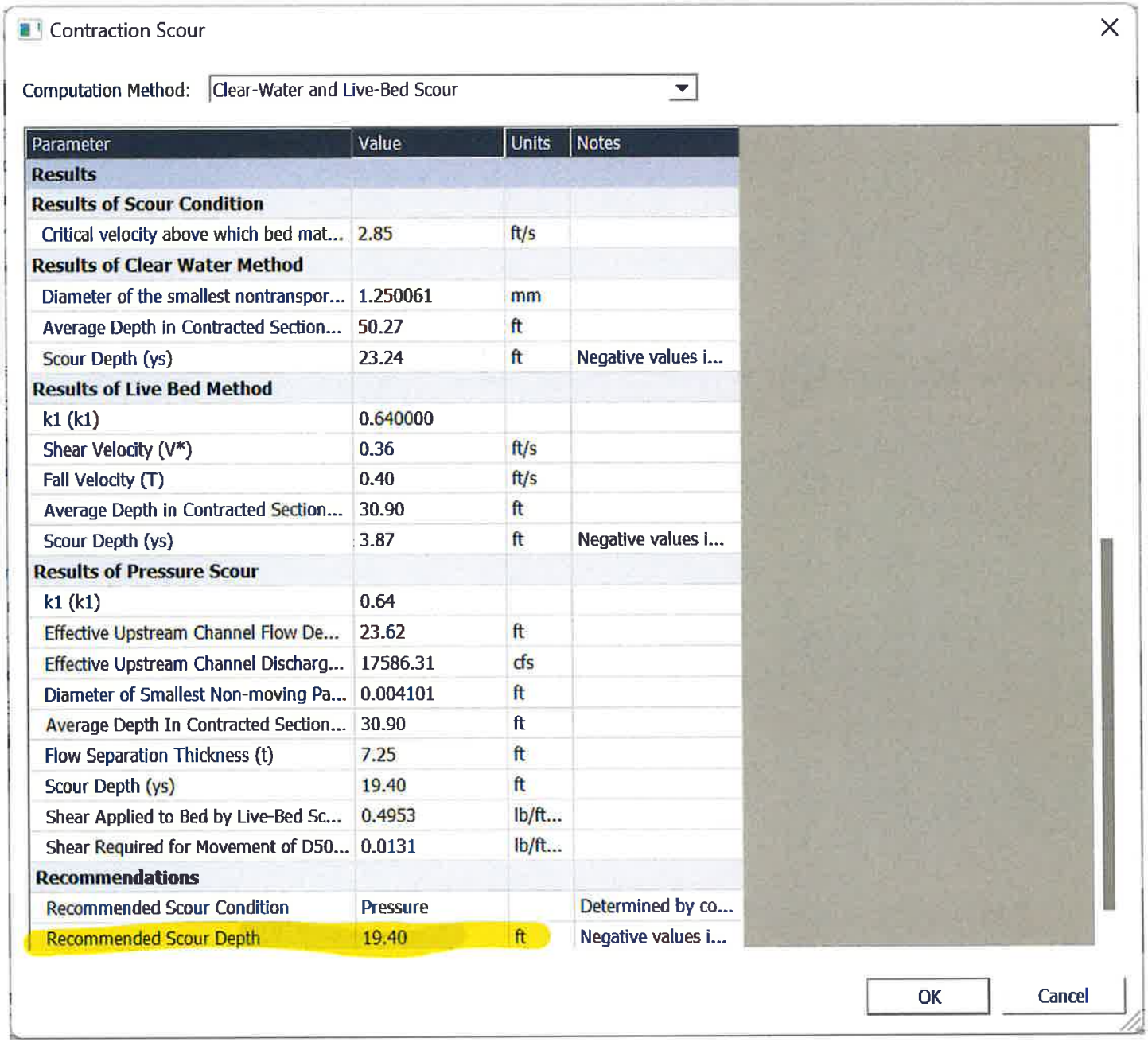
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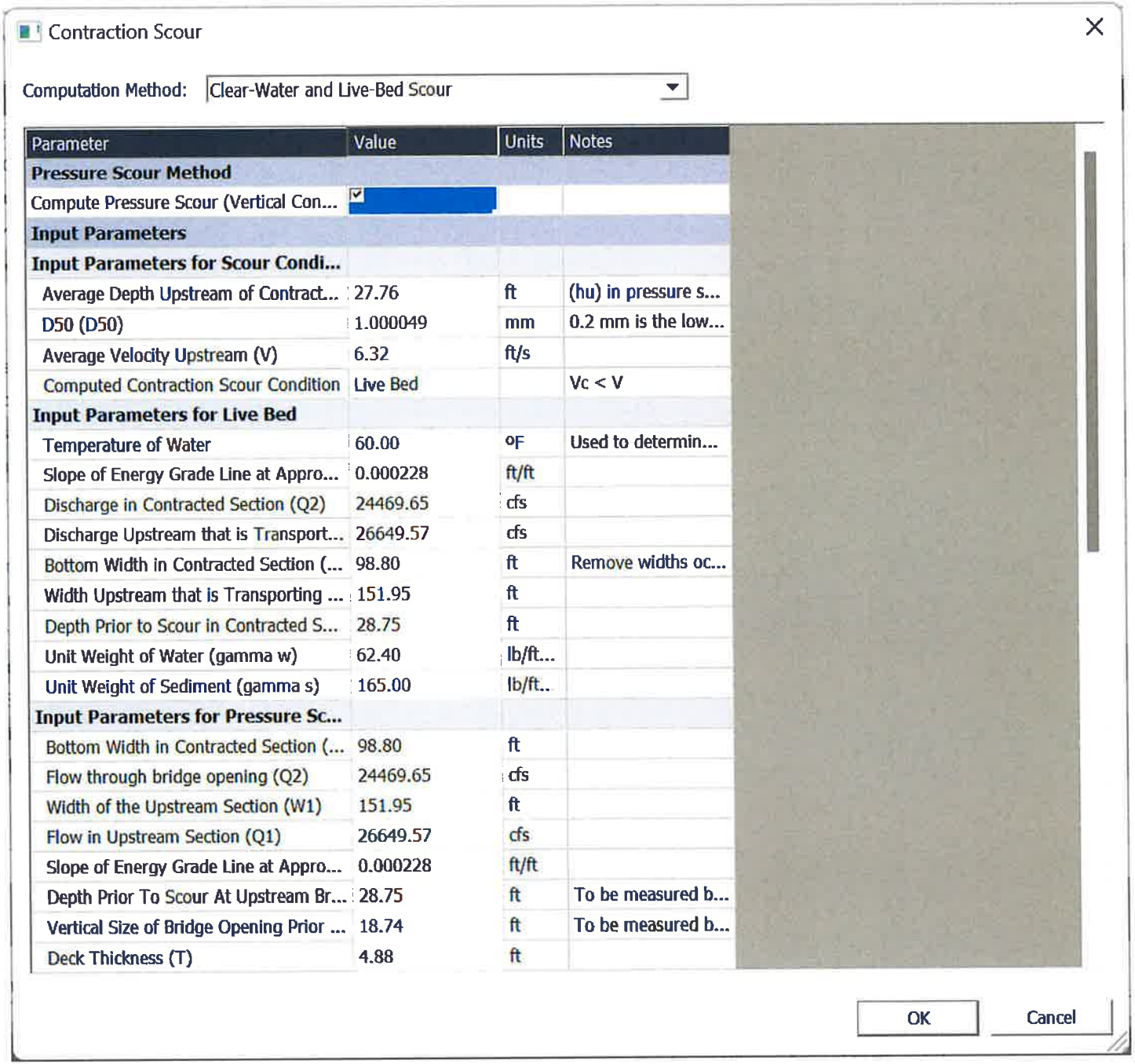
KLEINFELDER 770 First Ave, Suite 400, San Diego, CA 92101 p | 619.831.4600

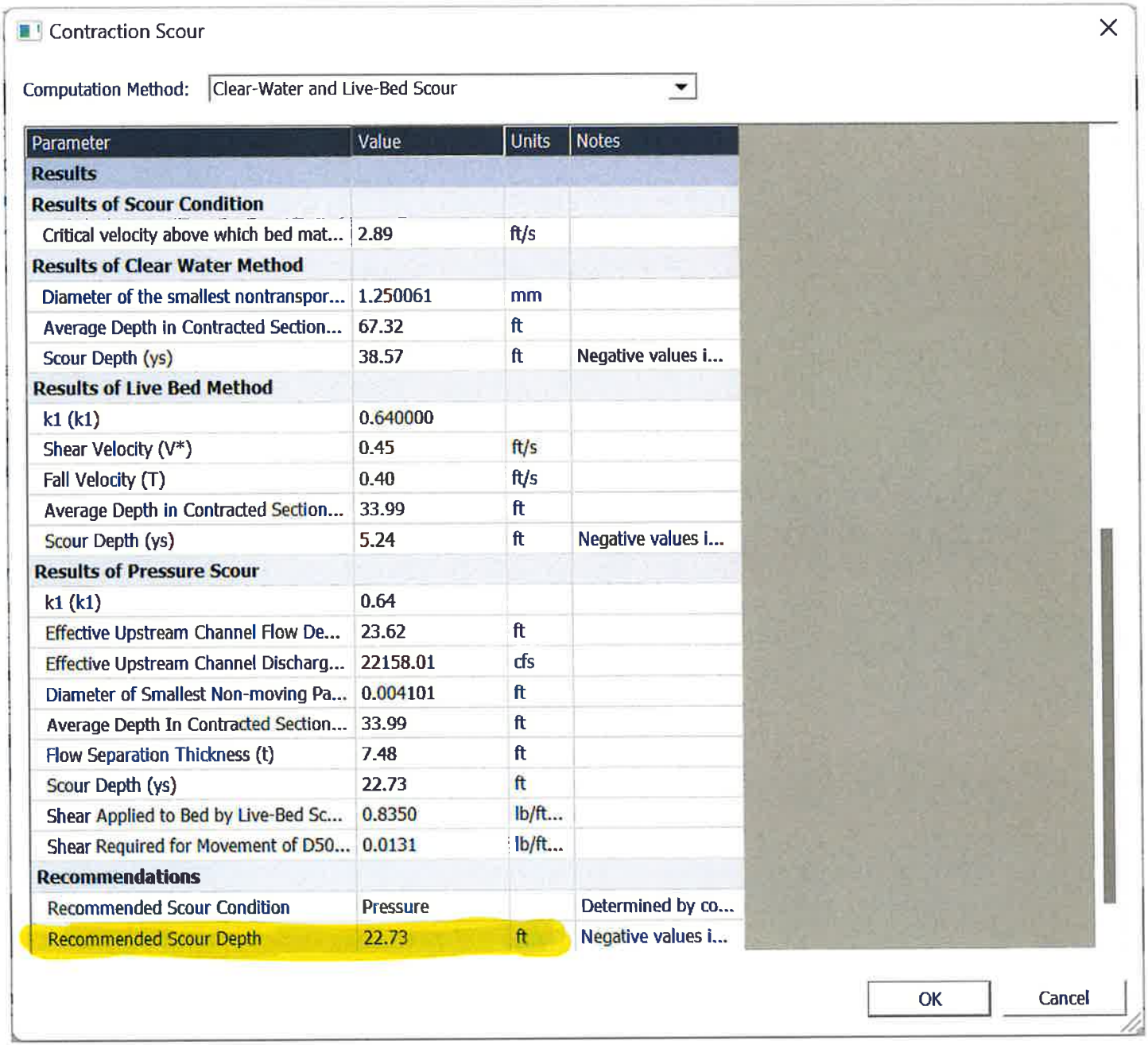
HEC-RAS Plan: Steady Flow_Alt 3B River: Alamo River Reach: Alamo River

Reach	River Sta	Profile	Area	E.G. Slope	W.S. Elev	Q Channel	Top W Chnl	Vel Chnl	Hydr Depth C	Q Left	Top W Left	Vel Left	Hydr Depth L	Q Right	Top W Right	Vel Right	Hydr Depth R
			(sq ft)	(ft/ft)	(ft)	(cfs)	(ft)	(ft/s)	(ft)	(cfs)	(ft)	(ft/s)	(ft)	(cfs)	(ft)	(ft/s)	(ft)
Alamo River	600	100-yr	28714.82	0.000138	101.61	20994.74	180.96	4.65	24.95	1053.55	1006.39	0.85	1.79	23400.71	4106.27	2.19	7.60
Alamo River	600	200-yr	39270.26	0.000210	103.49	29276.16	180.96	6.03	26.83	5407.60	1451.24	1.37	2.73	41737.24	4181.07	3.12	9.44
Alamo River	550	100-yr	27715.38	0.000155	101.59	19522.18	151.95	4.96	25.88	2168.05	1257.76	1.01	1.71	23758.77	4036.91	2.27	7.38
Alamo River	550	200-yr	38352.30	0.000228	103.47	26649.57	151.95	6.32	27.76	7665.90	1571.14	1.59	3.08	42105.53	4113.36	3.20	9.23
Alamo River	500	100-yr	21808.01	0.000195	101.55	17252.37	117.41	5.47	26.85	3063.56	1379.37	1.15	1.93	25133.07	3248.57	2.46	7.14
Alamo River	500	200-yr	31103.05	0.000270	103.45	22755.57	117.41	6.74	28.74	9888.83	1622.91	1.79	3.40	43776.61	3330.87	3.39	8.99
Alamo River	460.9	100-yr	14298.74	0.000260	101.42	17405.88	98.80	6.52	27.03	1341.25	218.92	1.88	5.89	26701.87	2128.45	2.75	6.77
Alamo River	460.9	200-yr	18588.32	0.000418	103.15	24469.65	98.80	8.61	28.75	2573.61	220.79	2.78	7.51	49377.74	2213.13	4.05	8.46
Alamo River	420		Bridge														
Alamo River	386.2	100-yr	31142.40	0.000404	100.69	26067.10	150.11	7.65	22.71	1246.88	1177.77	1.03	1.03	18135.02	4304.13	3.46	6.15
Alamo River	386.2	200-yr	41931.19	0.000588	102.60	35948.60	150.11	9.73	24.62	8204.67	1193.14	2.36	2.91	32267.73	4321.87	4.68	7.97
Alamo River	350	100-yr	40057.58	0.000318	100.75	21029.89	130.37	6.85	23.54	2553.34	1924.17	1.09	1.38	21865.78	5138.93	3.56	8.43
Alamo River	350	200-yr	56426.07	0.000420	102.72	27603.53	130.37	8.30	25.51	13216.03	3260.00	2.04	2.94	35601.44	5144.13	4.69	10.37
Alamo River	300	100-yr	41501.12	0.000483	100.54	21660.91	106.52	8.43	24.13	3044.50	1953.55	1.29	1.30	20743.59	5113.32	3.37	8.40
Alamo River	300	200-yr	58508.80	0.000586	102.57	27289.62	106.52	9.80	26.15	16464.61	3351.00	2.46	3.03	32666.77	5136.75	4.27	10.26
Alamo River	150	100-yr	39318.83	0.000801	99.91	25054.51	100.27	10.72	23.30	4400.55	1772.61	1.77	1.40	15993.95	4897.64	3.96	6.82
Alamo River	150	200-yr	58530.66	0.000801	102.16	29222.00	100.27	11.41	25.55	22202.72	3804.40	3.00	3.33	24996.28	5049.94	4.63	8.98


Contraction Scour
Computation Method:
Clear-Water and Live-Bed Scour
Parameter
Value
Units
Notes
Pressure Scour Method
Compute Pressure Scour (Vertical Con...
Input Parameters
Input Parameters for Scour Condi...
Average Depth Upstream of Contract... 25.88 ft (hu) in pressure s...
D50 (D50) 1.000049 mm 0.2 mm is the low...
Average Velocity Upstream (V) 4.96 ft/s
Computed Contraction Scour Condition Live Bed Vc < V
Input Parameters for Live Bed
Temperature of Water 60.00 oF Used to determin...
Slope of Energy Grade Line at Appro... 0.000155 ft/ft
Discharge in Contracted Section (Q2) 17405.88 cfs
Discharge Upstream that is Transport... 19522.18 cfs
Bottom Width in Contracted Section (... 98.80 ft Remove widths oc...
Width Upstream that is Transporting ... 151.95 ft
Depth Prior to Scour in Contracted S... 27.03 ft
Unit Weight of Water (gamma w) 62.40 lb/ft...
Unit Weight of Sediment (gamma s) 165.00 lb/ft...
Input Parameters for Pressure Sc...
Bottom Width in Contracted Section (... 98.80 ft
Flow through bridge opening (Q2) 17405.88 cfs
Width of the Upstream Section (W1) 151.95 ft
Flow in Upstream Section (Q1) 19522.18 cfs
Slope of Energy Grade Line at Appro... 0.000155 ft/ft
Depth Prior To Scour At Upstream Br... 27.03 ft To be measured b...
Vertical Size of Bridge Opening Prior ... 18.74 ft To be measured b...
Deck Thickness (T) 4.88 ft
OK
Cancel

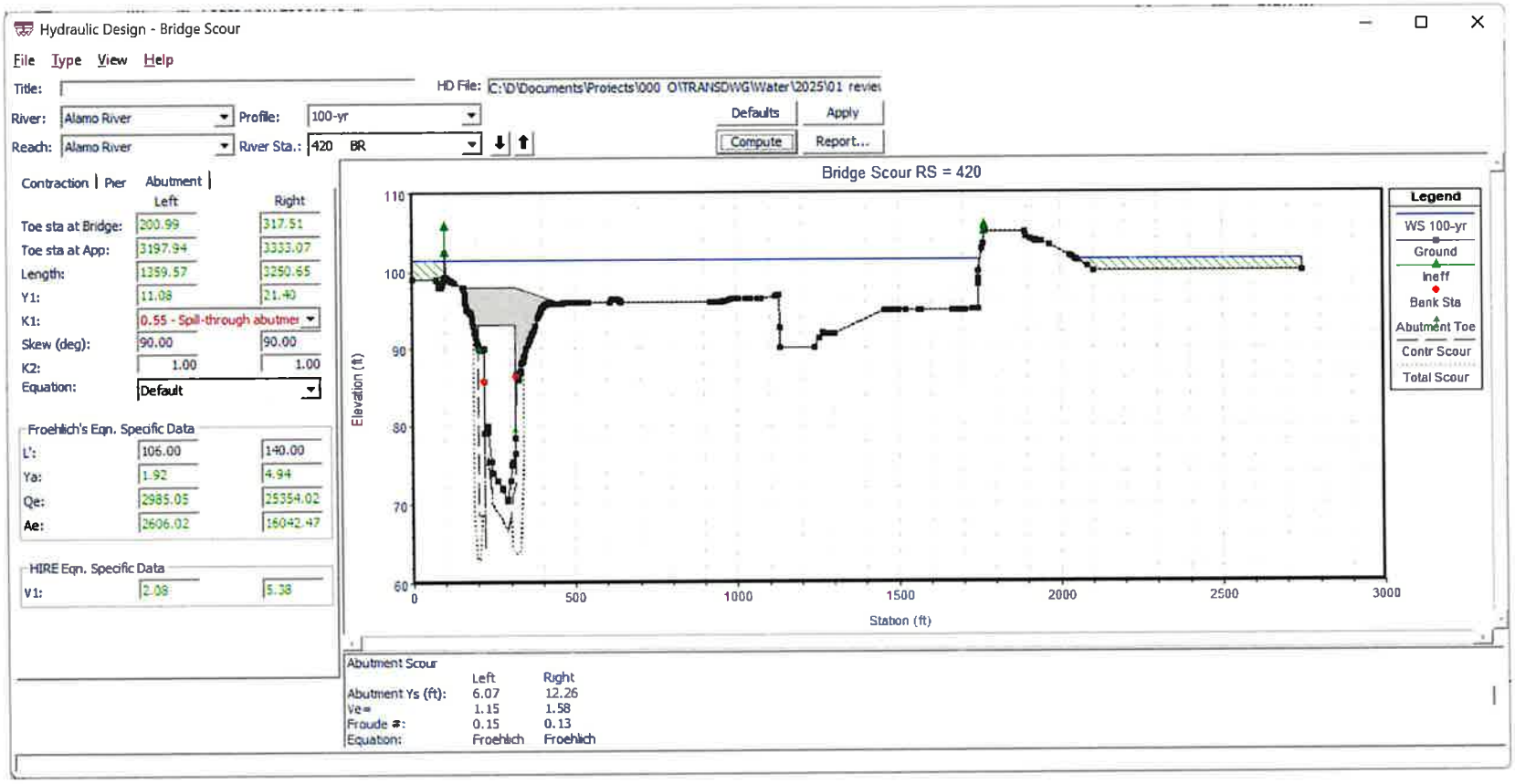

Contraction Scour
Computation Method: Clear-Water and Live-Bed Scour
Parameter | Value | Units | Notes
Results
Results of Scour Condition
Critical velocity above which bed mat... | 2.85 | ft/s
Results of Clear Water Method
Diameter of the smallest nontranspor... | 1.250061 | mm
Average Depth in Contracted Section... | 50.27 | ft
Scour Depth (ys) | 23.24 | ft | Negative values i...
Results of Live Bed Method
k1 (k1) | 0.640000
Shear Velocity (V*) | 0.36 | ft/s
Fall Velocity (T) | 0.40 | ft/s
Average Depth in Contracted Section... | 30.90 | ft
Scour Depth (ys) | 3.87 | ft | Negative values i...
Results of Pressure Scour
k1 (k1) | 0.64
Effective Upstream Channel Flow De... | 23.62 | ft
Effective Upstream Channel Discharg... | 17586.31 | cfs
Diameter of Smallest Non-moving Pa... | 0.004101 | ft
Average Depth In Contracted Section... | 30.90 | ft
Flow Separation Thickness (t) | 7.25 | ft
Scour Depth (ys) | 19.40 | ft
Shear Applied to Bed by Live-Bed Sc... | 0.4953 | lb/ft...
Shear Required for Movement of D50... | 0.0131 | lb/ft...
Recommendations
Recommended Scour Condition | Pressure | | Determined by co...
Recommended Scour Depth | 19.40 | ft | Negative values i...
OK
Cancel


Contraction Scour
Computation Method:
Clear-Water and Live-Bed Scour
Parameter
Value
Units
Notes
Pressure Scour Method
Compute Pressure Scour (Vertical Con...
Input Parameters
Input Parameters for Scour Condi...
Average Depth Upstream of Contract...
27.76
ft
(hu) in pressure s...
D50 (D50)
1.000049
mm
0.2 mm is the low...
Average Velocity Upstream (V)
6.32
ft/s
Computed Contraction Scour Condition
Live Bed
Vc < V
Input Parameters for Live Bed
Temperature of Water
60.00
°F
Used to determin...
Slope of Energy Grade Line at Appro...
0.000228
ft/ft
Discharge in Contracted Section (Q2)
24469.65
cfs
Discharge Upstream that is Transport...
26649.57
cfs
Bottom Width in Contracted Section (...
98.80
ft
Remove widths oc...
Width Upstream that is Transporting ...
151.95
ft
Depth Prior to Scour in Contracted S...
28.75
ft
Unit Weight of Water (gamma w)
62.40
lb/ft...
Unit Weight of Sediment (gamma s)
165.00
lb/ft..
Input Parameters for Pressure Sc...
Bottom Width in Contracted Section (...
98.80
ft
Flow through bridge opening (Q2)
24469.65
cfs
Width of the Upstream Section (W1)
151.95
ft
Flow in Upstream Section (Q1)
26649.57
cfs
Slope of Energy Grade Line at Appro...
0.000228
ft/ft
Depth Prior To Scour At Upstream Br...
28.75
ft
To be measured b...
Vertical Size of Bridge Opening Prior ...
18.74
ft
To be measured b...
Deck Thickness (T)
4.88
ft
OK
Cancel


Contraction Scour
Computation Method:
Clear-Water and Live-Bed Scour
Parameter
Value
Units
Notes
Results
Results of Scour Condition
Critical velocity above which bed mat...
2.89
ft/s
Results of Clear Water Method
Diameter of the smallest nontranspor...
1.250061
mm
Average Depth in Contracted Section...
67.32
ft
Scour Depth (ys)
38.57
ft
Negative values i...
Results of Live Bed Method
k1 (k1)
0.640000
Shear Velocity (V*)
0.45
ft/s
Fall Velocity (T)
0.40
ft/s
Average Depth in Contracted Section...
33.99
ft
Scour Depth (ys)
5.24
ft
Negative values i...
Results of Pressure Scour
k1 (k1)
0.64
Effective Upstream Channel Flow De...
23.62
ft
Effective Upstream Channel Discharg...
22158.01
cfs
Diameter of Smallest Non-moving Pa...
0.004101
ft
Average Depth In Contracted Section...
33.99
ft
Flow Separation Thickness (t)
7.48
ft
Scour Depth (ys)
22.73
ft
Shear Applied to Bed by Live-Bed Sc...
0.8350
lb/ft...
Shear Required for Movement of D50...
0.0131
lb/ft...
Recommendations
Recommended Scour Condition
Pressure
Determined by co...
Recommended Scour Depth
22.73
ft
Negative values i...
OK
Cancel

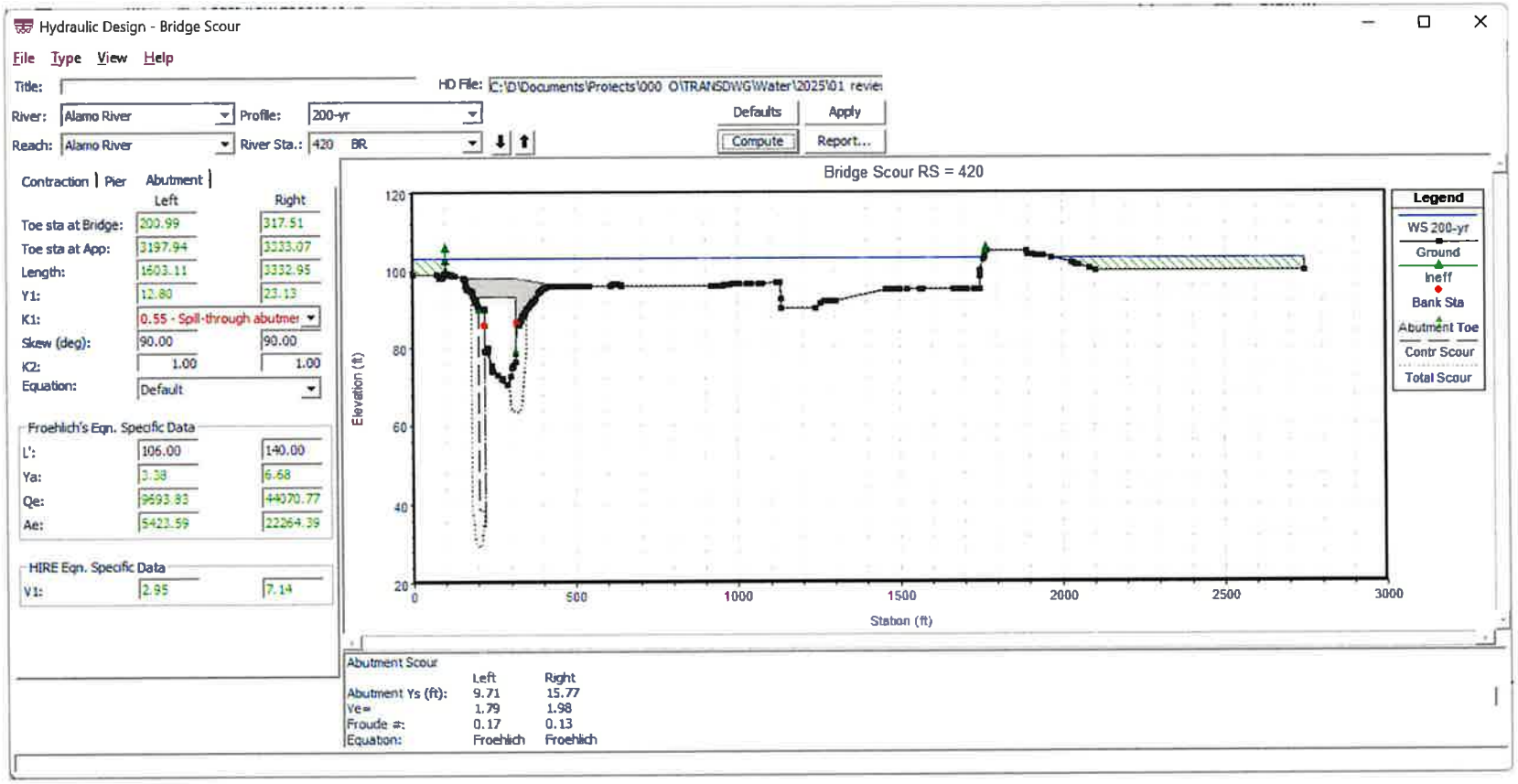
Abutment Scour Computation Using Froehlich's Abutment Scour Equation

100-year Storm Event



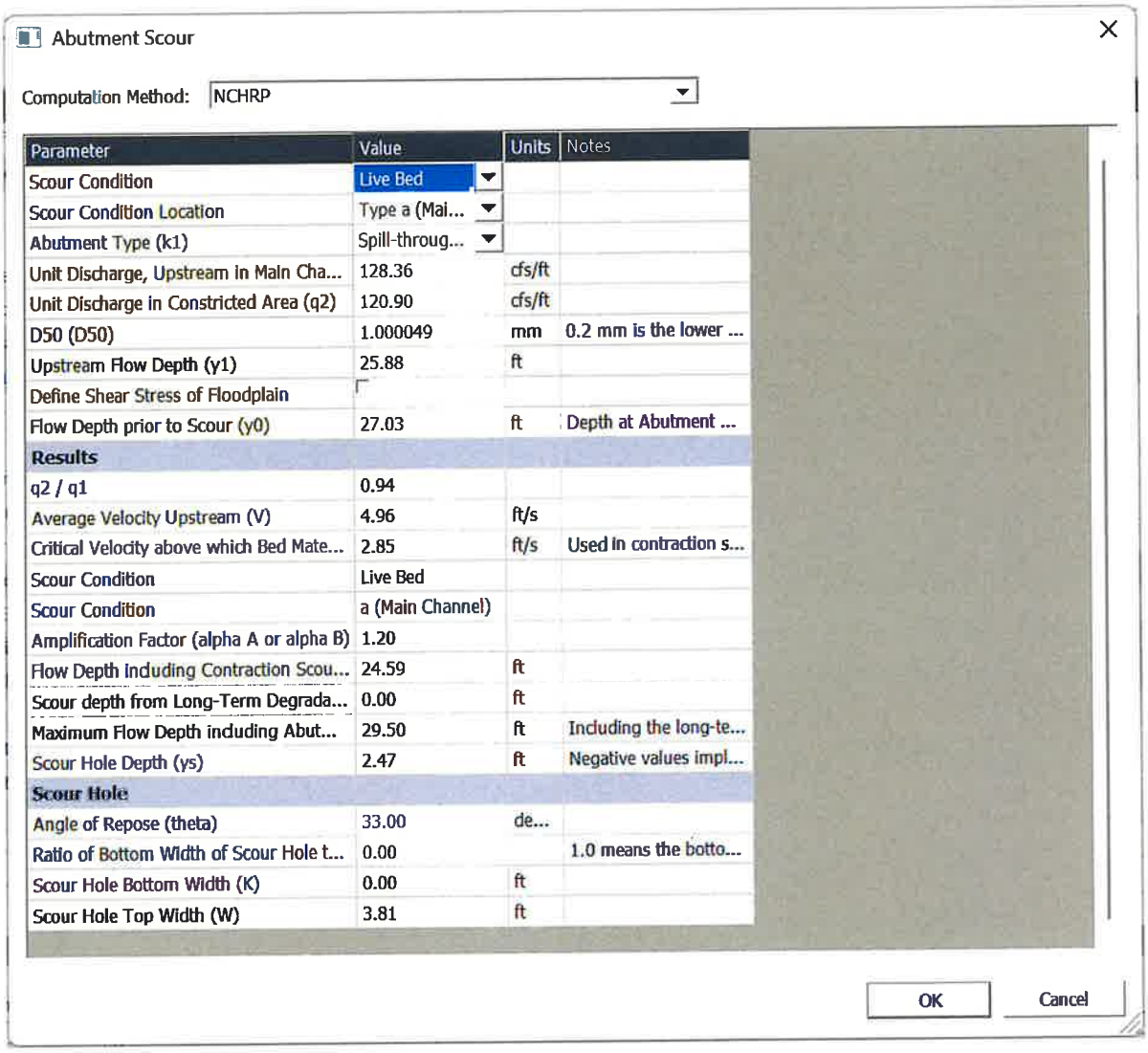
Abutment Scour Computation Using Froehlich's Abutment Scour Equation

200-year Storm Event



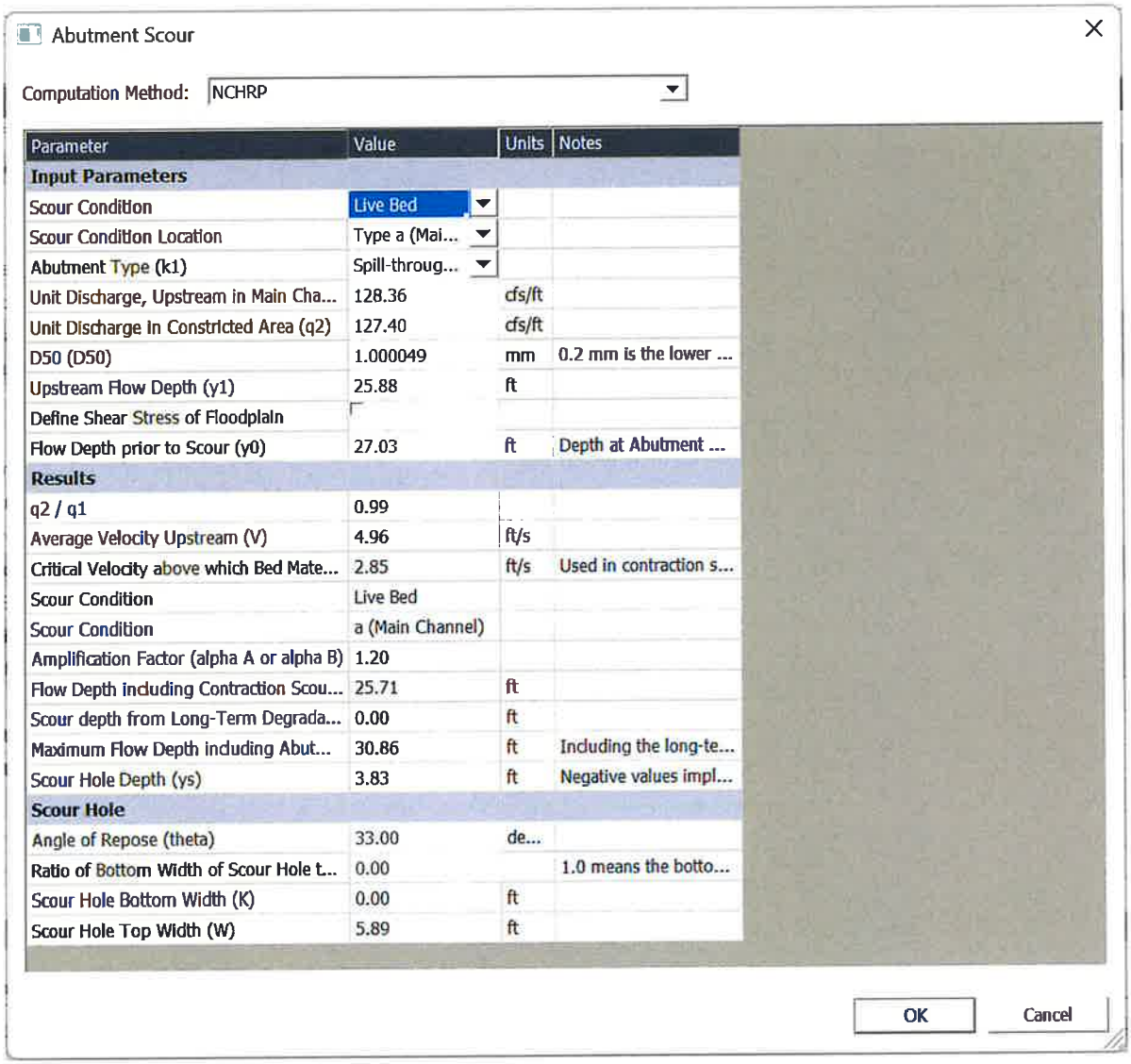
Abutment Scour Computation Using NCHRP Method

100-year Storm Event, Left Abutment



Abutment Scour Computation Using NCHRP Method

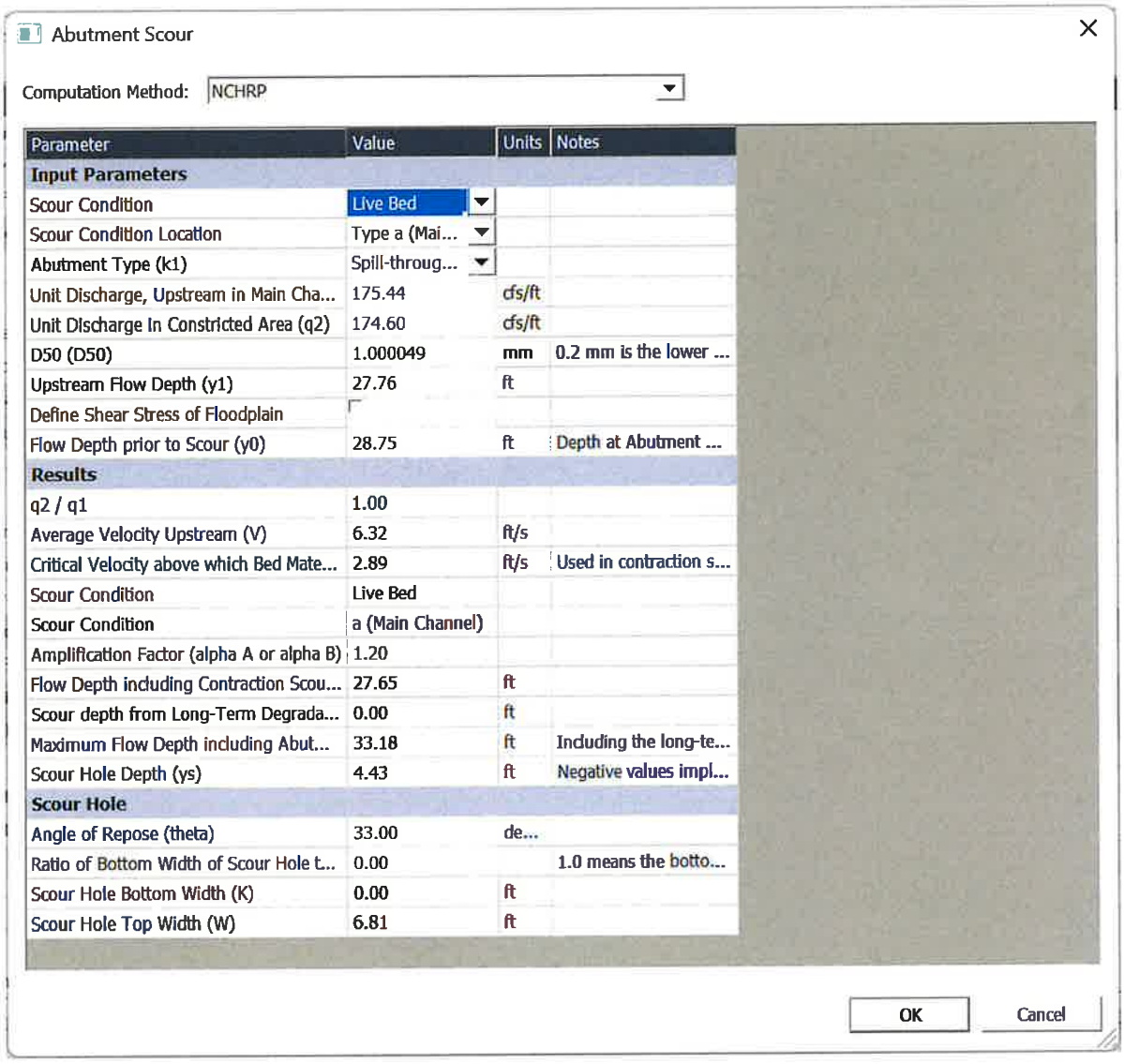
100-year Storm Event, Right Abutment



Parameter	Value	Units	Notes
Input Parameters			
Scour Condition	Live Bed		
Scour Condition Location	Type a (Mai...		
Abutment Type (k1)	Spill-throug...		
Unit Discharge, Upstream in Main Cha...	128.36	cfs/ft	
Unit Discharge in Constricted Area (q2)	127.40	cfs/ft	
D50 (D50)	1.000049	mm	0.2 mm is the lower ...
Upstream Flow Depth (y1)	25.88	ft	
Define Shear Stress of Floodplain			
Flow Depth prior to Scour (y0)	27.03	ft	Depth at Abutment ...
Results			
q2 / q1	0.99		
Average Velocity Upstream (V)	4.96	ft/s	
Critical Velocity above which Bed Mate...	2.85	ft/s	Used in contraction s...
Scour Condition	Live Bed		
Scour Condition	a (Main Channel)		
Amplification Factor (alpha A or alpha B)	1.20		
Flow Depth including Contraction Scou...	25.71	ft	
Scour depth from Long-Term Degrada...	0.00	ft	
Maximum Flow Depth including Abut...	30.86	ft	Including the long-te...
Scour Hole Depth (ys)	3.83	ft	Negative values impl...
Scour Hole			
Angle of Repose (theta)	33.00	de...	
Ratio of Bottom Width of Scour Hole t...	0.00		1.0 means the botto...
Scour Hole Bottom Width (K)	0.00	ft	
Scour Hole Top Width (W)	5.89	ft	

Abutment Scour Computation Using NCHRP Method

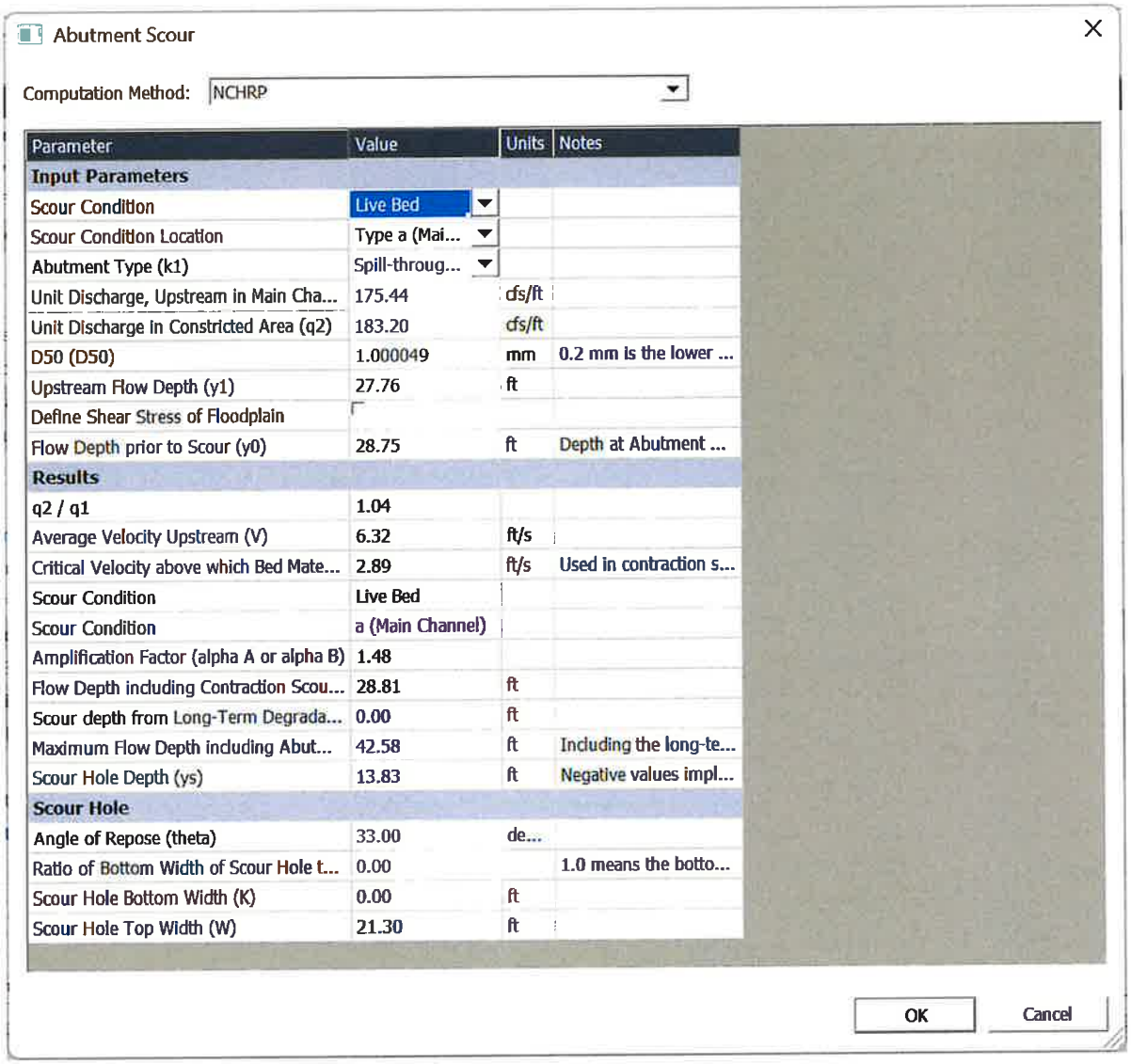
200-year Storm Event, Left Abutment



Parameter	Value	Units	Notes
Input Parameters			
Scour Condition	Live Bed		
Scour Condition Location	Type a (Mai...		
Abutment Type (k1)	Spill-throug...		
Unit Discharge, Upstream in Main Cha...	175.44	cfs/ft	
Unit Discharge In Constricted Area (q2)	174.60	cfs/ft	
D50 (D50)	1.000049	mm	0.2 mm is the lower ...
Upstream Flow Depth (y1)	27.76	ft	
Define Shear Stress of Floodplain			
Flow Depth prior to Scour (y0)	28.75	ft	Depth at Abutment ...
Results			
q2 / q1	1.00		
Average Velocity Upstream (V)	6.32	ft/s	
Critical Velocity above which Bed Mate...	2.89	ft/s	Used in contraction s...
Scour Condition	Live Bed		
Scour Condition	a (Main Channel)		
Amplification Factor (alpha A or alpha B)	1.20		
Flow Depth including Contraction Scou...	27.65	ft	
Scour depth from Long-Term Degrada...	0.00	ft	
Maximum Flow Depth including Abut...	33.18	ft	Including the long-te...
Scour Hole Depth (ys)	4.43	ft	Negative values impl...
Scour Hole			
Angle of Repose (theta)	33.00	de...	
Ratio of Bottom Width of Scour Hole t...	0.00		1.0 means the botto...
Scour Hole Bottom Width (K)	0.00	ft	
Scour Hole Top Width (W)	6.81	ft	

Abutment Scour Computation Using NCHRP Method

200-year Storm Event, Right Abutment



APPENDIX I

NOAA Precipitation Intensity

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NOAA Atlas 14, Volume 6, Version 2
Location name: Calipatria, California, USA*
Latitude: 33.1178°, Longitude: -115.5629°
Elevation: -207 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.744 (0.624-0.888)	1.16 (0.984-1.40)	1.81 (1.51-2.18)	2.41 (2.00-2.93)	3.37 (2.71-4.25)	4.24 (3.32-5.45)	5.23 (4.01-6.91)	6.42 (4.76-8.72)	8.29 (5.90-11.8)	10.0 (6.86-14.7)
10-min	0.534 (0.450-0.636)	0.834 (0.702-1.00)	1.30 (1.09-1.56)	1.73 (1.44-2.10)	2.42 (1.94-3.04)	3.04 (2.38-3.91)	3.75 (2.87-4.96)	4.60 (3.41-6.25)	5.95 (4.23-8.44)	7.16 (4.92-10.6)
15-min	0.428 (0.360-0.516)	0.672 (0.564-0.808)	1.04 (0.876-1.26)	1.40 (1.16-1.70)	1.95 (1.56-2.45)	2.45 (1.92-3.15)	3.02 (2.32-3.99)	3.71 (2.76-5.04)	4.79 (3.41-6.80)	5.78 (3.96-8.51)
30-min	0.300 (0.252-0.358)	0.470 (0.394-0.564)	0.728 (0.612-0.878)	0.972 (0.808-1.18)	1.36 (1.09-1.71)	1.71 (1.34-2.19)	2.11 (1.61-2.78)	2.58 (1.92-3.51)	3.34 (2.38-4.74)	4.03 (2.76-5.93)
60-min	0.208 (0.175-0.249)	0.326 (0.274-0.392)	0.506 (0.425-0.610)	0.675 (0.561-0.821)	0.944 (0.758-1.19)	1.18 (0.931-1.52)	1.47 (1.12-1.94)	1.80 (1.33-2.44)	2.32 (1.65-3.30)	2.80 (1.92-4.12)
2-hr	0.143 (0.120-0.172)	0.215 (0.181-0.258)	0.324 (0.272-0.391)	0.427 (0.355-0.518)	0.588 (0.472-0.740)	0.732 (0.575-0.942)	0.899 (0.688-1.19)	1.10 (0.814-1.49)	1.41 (1.00-2.00)	1.69 (1.16-2.49)
3-hr	0.111 (0.093-0.133)	0.164 (0.138-0.197)	0.245 (0.205-0.295)	0.320 (0.266-0.389)	0.439 (0.352-0.552)	0.545 (0.428-0.701)	0.667 (0.510-0.881)	0.810 (0.602-1.10)	1.04 (0.737-1.47)	1.24 (0.852-1.83)
6-hr	0.070 (0.059-0.084)	0.102 (0.086-0.123)	0.151 (0.127-0.182)	0.196 (0.163-0.239)	0.267 (0.214-0.337)	0.330 (0.259-0.425)	0.402 (0.307-0.531)	0.486 (0.361-0.660)	0.617 (0.439-0.876)	0.735 (0.504-1.08)
12-hr	0.040 (0.034-0.049)	0.060 (0.050-0.072)	0.089 (0.075-0.108)	0.116 (0.097-0.141)	0.158 (0.126-0.199)	0.194 (0.152-0.250)	0.235 (0.180-0.311)	0.283 (0.210-0.385)	0.357 (0.253-0.507)	0.422 (0.289-0.621)
24-hr	0.026 (0.023-0.030)	0.039 (0.034-0.045)	0.058 (0.051-0.068)	0.076 (0.066-0.089)	0.103 (0.087-0.124)	0.126 (0.105-0.155)	0.153 (0.124-0.192)	0.183 (0.145-0.236)	0.229 (0.174-0.307)	0.269 (0.198-0.372)
2-day	0.014 (0.013-0.017)	0.022 (0.020-0.026)	0.034 (0.029-0.039)	0.044 (0.038-0.051)	0.059 (0.050-0.071)	0.072 (0.060-0.089)	0.087 (0.071-0.110)	0.104 (0.082-0.134)	0.129 (0.098-0.173)	0.151 (0.111-0.209)
3-day	0.010 (0.009-0.012)	0.016 (0.014-0.018)	0.024 (0.021-0.027)	0.031 (0.027-0.036)	0.042 (0.035-0.050)	0.051 (0.042-0.063)	0.061 (0.050-0.077)	0.073 (0.057-0.094)	0.090 (0.068-0.121)	0.105 (0.077-0.145)
4-day	0.008 (0.007-0.009)	0.012 (0.011-0.014)	0.018 (0.016-0.021)	0.024 (0.021-0.028)	0.032 (0.027-0.039)	0.040 (0.033-0.049)	0.048 (0.039-0.060)	0.056 (0.045-0.073)	0.070 (0.053-0.094)	0.081 (0.060-0.113)
7-day	0.005 (0.004-0.005)	0.007 (0.006-0.008)	0.011 (0.010-0.013)	0.014 (0.012-0.017)	0.019 (0.016-0.023)	0.024 (0.019-0.029)	0.028 (0.023-0.036)	0.033 (0.026-0.043)	0.041 (0.031-0.056)	0.048 (0.035-0.067)
10-day	0.003 (0.003-0.004)	0.005 (0.004-0.006)	0.008 (0.007-0.009)	0.010 (0.009-0.012)	0.014 (0.011-0.017)	0.017 (0.014-0.021)	0.020 (0.016-0.025)	0.024 (0.019-0.031)	0.029 (0.022-0.039)	0.034 (0.025-0.047)
20-day	0.001 (0.001-0.002)	0.002 (0.002-0.003)	0.004 (0.003-0.005)	0.005 (0.004-0.006)	0.007 (0.006-0.009)	0.009 (0.007-0.011)	0.010 (0.008-0.013)	0.012 (0.010-0.016)	0.015 (0.011-0.021)	0.018 (0.013-0.025)
30-day	0.001 (0.001-0.001)	0.002 (0.001-0.002)	0.003 (0.002-0.003)	0.004 (0.003-0.004)	0.005 (0.004-0.006)	0.006 (0.005-0.008)	0.007 (0.006-0.009)	0.009 (0.007-0.011)	0.011 (0.008-0.014)	0.012 (0.009-0.017)
45-day	0.000 (0.000-0.001)	0.001 (0.001-0.001)	0.002 (0.002-0.002)	0.003 (0.002-0.003)	0.004 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.004-0.007)	0.006 (0.005-0.008)	0.008 (0.006-0.010)	0.009 (0.006-0.012)
60-day	0.000 (0.000-0.000)	0.001 (0.001-0.001)	0.001 (0.001-0.002)	0.002 (0.002-0.002)	0.003 (0.002-0.003)	0.003 (0.003-0.004)	0.004 (0.003-0.005)	0.005 (0.004-0.006)	0.006 (0.004-0.008)	0.007 (0.005-0.010)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

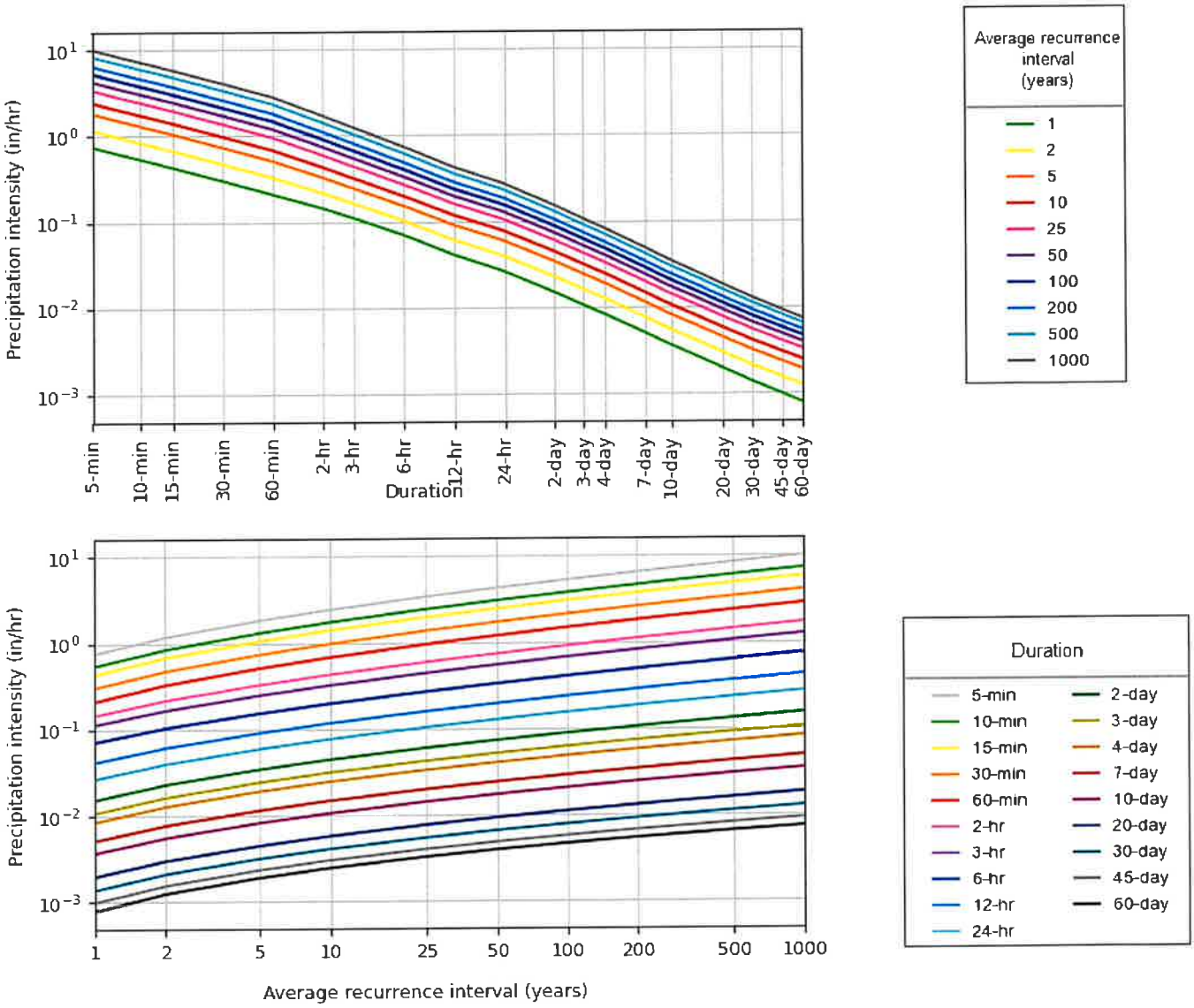
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 33.1178°, Longitude: -115.5629°



NOAA Atlas 14, Volume 6, Version 2

Created (GMT): Fri Feb 21 18:25:40 2025

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Maps & aerials

Small scale terrain



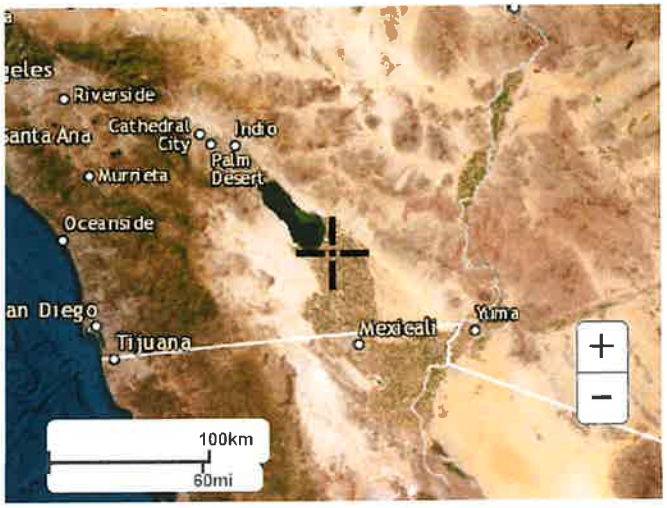
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX J

Stormwater Design Schematic

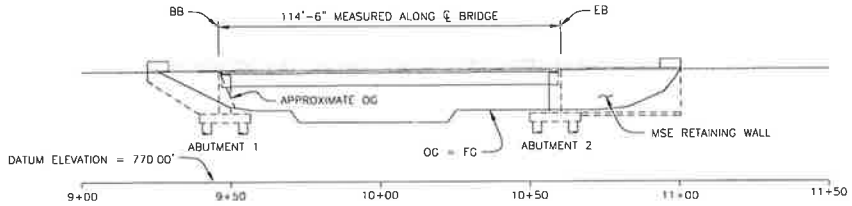
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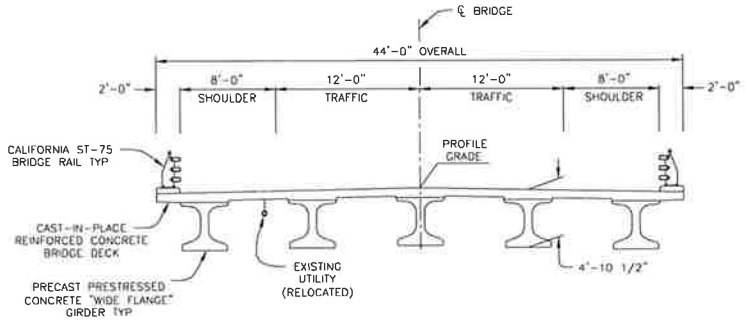
PROFILE GRADE

NO SCALE



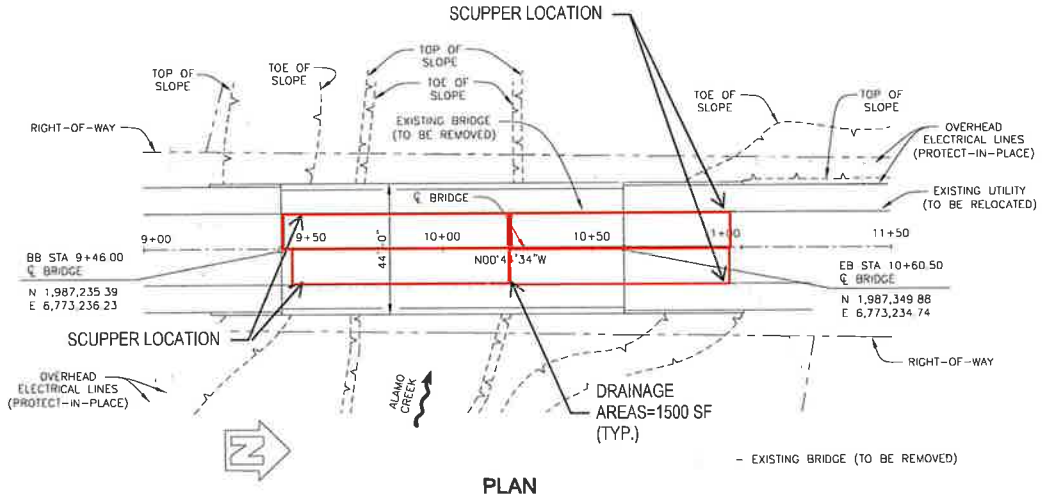
ELEVATION

1" = 20'-0"



TYPICAL SECTION

1" = 5'-0"



PLAN

1" = 20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

REVISION	DESCRIPTION	APPROVED	DATE

SCALE: AS SHOWN
ACAD FILE NO.
PROJECT NO.

DESIGNED: S. MCCALLY | DRAWN: T. BRITTAIN | CHECKED: K. BURNELL
ENGINEER OF WORK | R.C.E. NO. | DATE

KLEINFELDER
Bright people. Right Solutions.

APPROVED
PUBLIC WORKS DIRECTOR | DATE

IMPERIAL COUNTY

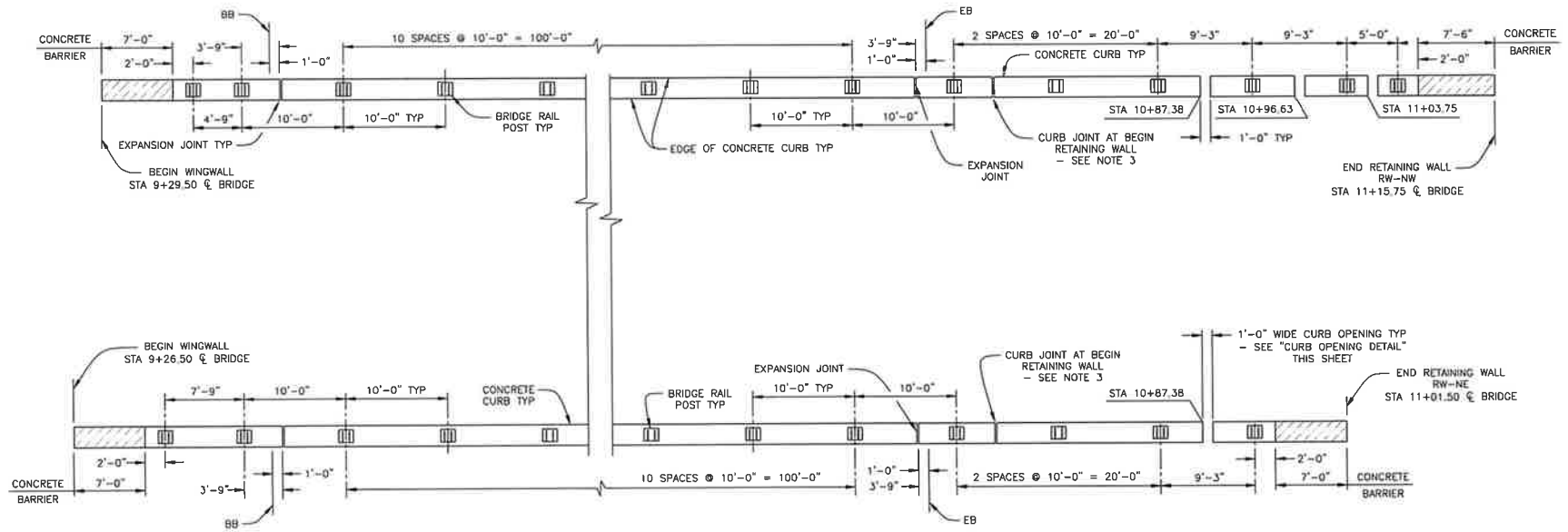
BRANDT ROAD BRIDGE OVER ALAMO RIVER
BRIDGE REPLACEMENT
GENERAL PLAN – ALTERNATIVE 3B

SHEET A4
1 OF 1

ORIGINAL SCALE:

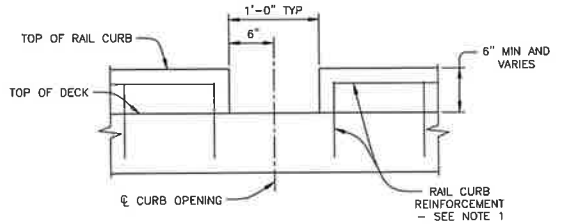
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PLOT DATE: 3/20/2025 11:20 AM



BRIDGE RAIL POST LAYOUT

NO SCALE



CURB OPENING DETAIL

1 1/2" = 1'-0"

NOTES:

1. FOR BRIDGE RAIL DETAILS, SEE CALTRANS STANDARD PLANS SHEETS B11-200, B11-201, AND B11-202.
2. FOR ADDITIONAL RAIL AND POST DETAILS, SEE CALTRANS STANDARD PLANS SHEETS B11-220, B11-221, AND B11-222.
3. NO SPLICES ARE PROVIDED IN RAILINGS AT LOCATION OF BEGINNING OF RETAINING WALLS.

REVISION	DESCRIPTION	APPROVED	DATE

SCALE: AS SHOWN
ACAD FILE NO.
PROJECT NO.

DESIGNED: S. MEGALLY | DRAWN: T. BRITTAIN | CHECKED: K. BURNELL

ENGINEER OF WORK — R.C.E. NO. — DATE

KLEINFELDER

APPROVED

PUBLIC WORKS DIRECTOR — DATE

IMPERIAL COUNTY

BRANDT ROAD BRIDGE OVER ALAMO RIVER
BRIDGE REPLACEMENT
MISCELLANEOUS DETAILS NO. 2

SHEET S-17
28 OF 34

ORIGINAL SCALE: 65% SUBMITTAL - NOT FOR CONSTRUCTION

FILE PATH: C:\Users\TBrittain\OneDrive – Kleinfelder\Desktop\KLF Folders\2500 1840 Brandt Road Bridge\Brandt Sheets 8-21-25.dwg

PLOT DATE: 8/21/2025 9:55 AM

APPENDIX K

Riprap Calculations

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Abutment Riprap				
d50	0.887532497	10.65039 inches	12	Class III
d30	0.739610414			
K1	0.717953455	side slope correction factor		
y	27	Full depth of channel		
Cv	1.199763107	outside of bend Highway design manual		
Rc	395	Radius of Curvature		
W	151.5	width of bridge		
Vdes	10.51273015	from highway design manual		
Vavg	6.9	Average Velocity		
S_{Bank}	1.5	bank slope (H/V)		
θ	33.7	bank angle in degrees		

Thickness

1.5d50	18	inches
d100	24	inches

$$K_1 = \sqrt{1 - \left[\frac{\sin(\theta - 14°)}{\sin 32°}\right]^{1.6}}$$

Where:

θ =is the bank angle in degrees.

Table 873.3A

RSP Class by Median Particle Size[3]

Nominal RSP Class by Median Particle Size[3]		d_{15} (in)		d_{50} (in)		d_{100} (in)	Placement Method
Class [1] [2]	Size (in)	Min	Max	Min	Max	Max	
I	6	3.7	5.2	5.7	6.9	12.0	B
II	9	5.5	7.8	8.5	10.5	18.0	B
III	12	7.3	10.5	11.5	14.0	24.0	B
IV	15	9.2	13.0	14.5	17.5	30.0	B
V	18	11.0	15.5	17.0	20.5	36.0	B
VI	21	13.0	18.5	20.0	24.0	42.0	A or B
VII	24	14.5	21.0	23.0	27.5	48.0	A or B
VIII	30	18.5	26.0	28.5	34.5	48.0	A or B
IX	36	22.0	31.5	34.0	41.5	52.8	A
X	42	25.5	36.5	40.0	48.5	60.5	A
XI	46	28.0	39.4	43.7	53.1	66.6	A

NOTES:

[1] Rock grading and quality requirements per Standard Specifications.

[2] RSP-fabric Type of geotextile and quality requirements per Section 96 Rock Slope Protection Fabric of the Standard Specifications. For RSP Classes I thru VIII, use Class 8 RSP-fabric which has lower weight per unit area and it also has lower toughness (tensile x elongation, both at break) than Class 10 RSP-fabric. For RSP Classes IX thru XI use Class 10 RSP-fabric.

[3] Intermediate, or B dimension (i.e., width) where A dimension is length, and C dimension is thickness.

Stone Size. Where stream velocity governs, rock size may be estimated from the following formula, which can be used with uniform or gradually varying flow. Coefficients are included to account for the desired safety factor for design, specific gravity of the riprap stone, bank slope, and bendway character:

$$d_{30} = y(S_f C_S C_V C_T)\left[\frac{V_{des}}{\sqrt{K_1(S_s - 1)gy}}\right]^{2.5}$$

Where:

d_{30} =Particle size for which 30% is finer by weight, ft;

y = Local depth of flow, ft;

S_f = Safety factor (typically = 1.1);

C_S =Stability coefficient (for blanket thickness $1.5d_{50}$ or d_{100}, whichever is greater) = 0.30 for angular rock;

C_V =Velocity distribution coefficient:

=1.0 for straight channels or the inside of bends;

=1.283 – 0.2 log (R_c/W) for the outside of bends (1.0 for R_c/W > 26);

=1.25 downstream from concrete channels;

=1.25 at the end of dikes;

C_T =Blanket thickness coefficient = 1.0;

S_s =Specific gravity of stone (2.5 minimum);

g =Acceleration due to gravity, 32.2 ft/s^2;

V_{des} =Characteristic velocity for design, defined as the depth-averaged velocity at a point 20% upslope from the toe of the revetment, ft/s;

For natural channels,

$V_{des}=V_{avg}$ (1.74 – 0.52 log (R_c/W))

$V_{des}=V_{avg}$ for R_c/W > 26

For trapezoidal channels,

$V_{des}=V_{avg}$ (1.71 – 0.78 log (R_c/W))

$V_{des}=V_{avg}$ for R_c/W > 8

Where:

R_c = Centerline radius of curvature of channel bend, ft;

W = Width of water surface at upstream end of channel bend, ft;

V_{avg} = Channel cross-sectional average velocity, ft/s;

K_1 = Side slope correction factor;

10513 Brandt Road Bridge Reconstruction
SoundPLAN Data - Construction

Source name	Reference	Noise Level			Corrections		
		Demolition	Construction	Paving	Cwall	CI	CT
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
Construction	Lw/unit	116.8	114.4	116.2	-	-	-

Noise Source

10513 Brandt Road Bridge Reconstruction

SoundPLAN Data - Construction

No.	Coordinates X (meters)	Y (meters)	Height (meters)	Noise Level Demolition dB(A)	Construction dB(A)	Paving dB(A)
1	634159.37	3665335.70	246.71	67.4	65	66.8
2	634119.69	3665326.17	246.71	74.7	72.3	74.1
3	634116.11	3665363.48	246.71	67.1	64.7	66.5

Receivers