YOLO COUNTY
COMMUNITY SERVICES DEPARTMENT

Draft Initial Study/
Mitigated Negative Declaration
File #PW2023-01

County Road 96 over Union School Slough
Bridge Replacement Project

County Work Order 4595
Federal Project Number BRLO-5922 (103)
June 2023

Table of Contents

1. Introduction 1
   1.1 Regulatory Framework 1
2. Environmental Checklist Form 2
   2.1 Project Description 4
3. Environmental Factors Potentially Affected 9
4. Determination 9
5. Evaluation of Environmental Impacts 10
   5.1 Aesthetics 11
   5.2 Agricultural and Forestry Resources 13
   5.3 Air Quality 16
   5.4 Biological Resources 22
   5.5 Cultural Resources 36
   5.6 Energy 39
   5.7 Geology and Soils 40
   5.8 Greenhouse Gas Emissions 43
   5.9 Hazards and Hazardous Materials 44
   5.10 Hydrology and Water Quality 49
   5.11 Land Use and Planning 52
   5.12 Mineral Resources 53
   5.13 Noise 54
   5.14 Population and Housing 57
   5.15 Public Services 58
   5.16 Recreation 59
   5.17 Transportation 60
   5.18 Tribal Cultural Resources 62
   5.19 Utilities/ Service Systems 64
   5.20 Wildfire 66
   5.21 Mandatory Findings of Significance 68
6. Summary of Mitigation Measures 69

7. Supporting Information Sources 75
7.1 Report Preparation 75
7.2 References 75

Figures

Figure 1. Project Location Map 5
Figure 2. Aerial Photograph 6

Tables

Table 1. Attainment Status for SVAB in Yolo County 17
Table 2. Construction Equipment and Use Assumptions. 19
Table 3. Estimated Construction Emissions with Mitigation Options 20
Table 4. Impacts to Land Cover Types 25

Appendix

Appendix A: Farmlands Study Memo

Appendix B: Road Construction Emissions Model Output

Appendix C: Natural Environment Study

Appendix D: Draft Delineation of Waters of the U.S. Map

Appendix E: Archaeological Survey Report / Historic Property Survey Report

Appendix F: Floodplain Evaluation Report

Appendix G: Construction Noise Technical Memorandum

Appendix H: Initial Site Assessment

1. Introduction

The Yolo County Department of Community Services, Public Works Division (County), and the California Department of Transportation (Caltrans) Division of Local Assistance is proposing to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough with funding made available through the FHWA Highway Bridge Program and administered by Caltrans. The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9. The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has exacerbated the documented scouring at the site.

The proposed Project will construct a new bridge south of the existing structure, such that Union School Slough can flow straight east under CR 96. The bridge has a long history of debris build-up which is exacerbated by the 180-degree bend in the creek as it crosses under CR 96 on the north end. Removal of the bends in the creek will alleviate debris build-up. A pipe culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur.

The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is a 46.5 foot long, 29.5 foot wide, single-span structure. The structure type is cast-in-place, post-tensioned concrete slab.

1.1 **Regulatory Framework**

The Yolo County Department of Community Services has determined that the County Road 96 over Union School Slough Bridge Replacement Project meets the California Environmental Quality Act (CEQA) Guidelines Section 15378 definition of a Project. CEQA Guidelines Section 15378 defines a Project as the following:

> *"Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.*

In accordance with the CEQA (Public Resources Code Sections 21000-21177), this Initial Study has been prepared to identify potentially significant impacts upon the environment resulting from the construction, operation, and maintenance of the County Road 96 over Union School Slough Bridge Replacement Project (Project or proposed Project). In accordance with Section 15063 of the State CEQA Guidelines, this Initial Study is a preliminary analysis prepared by the Yolo County Department of Community Services as Lead Agency to inform the Lead Agency decision makers, other affected agencies, and the public, of potential environmental impacts associated with the implementation of the Project.

2. Environmental Checklist Form

Project Title	County Road 96 over Union School Slough Bridge Replacement Project (Project)
Lead Agency Name and Address	Yolo County Department of Community Services 292 West Beamer Street Woodland, CA, 95695-2598
Contact Person and Phone Number	Ahmad Aleaf, P.E. Senior Civil Engineer 530-666-8437
Project Location	The Project is located on County Road 96, north of County Road 31, west of the City of Davis, in Yolo County, California.
Project Sponsor's Name and Address	Vin Cay, Director Public Works Division Yolo County Department of Community Services 292 W. Beamer St. Woodland, CA 95695
General Plan Designation	Agriculture (AG)
Zoning	County Road Right of Way Agricultural Intensive (A-N): 040-180-012, 040-170-001, 040-170-003, 040-180-013

Project Description Summary: The Yolo County Department of Community Services, Public Works Division (County), and the California Department of Transportation (Caltrans) Division of Local Assistance are proposing to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough with funding made available through the FHWA Highway Bridge Program and administered by Caltrans. The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The Project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. County Road (CR) 96 is a rural local roadway that extends between Russell Boulevard to the south and CR 27 on the north.

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has longitudinal and shear cracking along the girders and evidence of water penetration through the deck. Additionally, the bridge railing is in poor condition with spalling and exposed rebar.

The proposed Project will construct a new bridge to the south of the existing structure. The new structure will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is a 46.5 foot long, 29.5 foot wide, single-span structure. The structure type is cast-in-place, post-tensioned concrete slab.. The roadway and bridge profile will be raised slightly to clear the 100-year storm event.

Surrounding Land Uses and Setting: Land uses/types surrounding (within 5 miles) the Project area consist of valley foothill riparian, undeveloped grazing land, orchards, agricultural facilities, other park uses, open space, Yolo County Airport, rural and urban residences.

Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, or participation agreement.):

- Caltrans — National Environmental Policy Act (NEPA) Categorical Exclusion
- U.S. Army Corps of Engineers — Section 404 Clean Water Act Nationwide Permit
- Central Valley Regional Water Quality Control Board — Section 401 Water Quality Certification
- California Department of Fish and Wildlife — Section 1602 Streambed Alteration Agreement
- Yolo Habitat Conservancy

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.?

All Tribes requesting notification in Yolo County were delivered a letter via email on February 9, 2022, giving formal notice and invitation by Yolo County to initiate AB 52 consultation on the proposed Project and to request participation of interested parties. The Yocha Dehe Wintun Nation (Tribe) responded to the request in a letter dated February 24, 2022, indicating the project is within the aboriginal territories of the Tribe. Though the Tribe is not aware of any known cultural resources near the project site, cultural sensitivity training is recommended for any pre-project personnel.

The Yocha Dehe Wintun Nation representatives also attended a field review meeting on February 20, 2020, to visit the Project site and to better understand the proposed Project activities. Yocha Dehe Wintun Nation requested to be included in property owner and utility owner discussions so they can provide cultural resources education.

2.1 **Project Description**

Location

The Project is located within unincorporated Yolo County, California on County Road (CR) 96 over Union School Slough, approximately 0.65 miles north of CR 29 (Figures 1 and 2). The Project is located within the US Geological Survey (USGS) "Merritt" Quadrangle; Sections 26 and 27, Township 09N, Range 01E.

History

Yolo County (County) proposes to replace the existing bridge on CR 96 over Union School Slough with funding made available through the Federal Highway Administration (FHWA) Highway Bridge Program and administered by the California Department of Transportation (Caltrans). The bridge was determined to be structurally deficient obsolete by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The Project site is located within the southern region of Yolo County, northeast of the Yolo County Airport. County Road 96 is a rural local roadway that extends between Russell Boulevard to the south and CR 27 to the north. County Road 96 is paved and has a constructed width of approximately 20 feet and no shoulders. The bridge, with an Average Daily Traffic count of 200 vehicles, is bordered primarily by agricultural land. There are no posted speed limits within the Project vicinity.

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has exacerbated the documented scouring at the site.

Project Purpose and Need

The purpose of the Project is to improve public safety while traveling on CR 96. The need for the Project arises from the poor condition of the bridge (longitudinal and deck cracking, bridge railing in poor condition). The bridge has been programmed for replacement in the Highway Bridge Program (HBP).

Figure 1. Project Location Map



NORTH

1:24,000

0 0.25 0.5 Miles

Data Sources: ESRI, USGS

County Road 96 over Union School Slough
Bridge Replacement Project
Regional Location
Figure 1

gallaway ENTERPRISES

GE: #17-013B Map Date: 05/23/2023

Figure 2. Aerial Photograph



1:2,200
0 50 100 Feet
Data Sources: ESRI, County of Yolo, USGS

NORTH

County Road 96 Union School Slough
Project Location
Figure 2

gallaway ENTERPRISES

GE: #17-013B Map Date: 10/12/2021

Project Description

The Project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. County Road (CR) 96 is a rural local roadway that extends between Russell Boulevard on the south and CR 27 on the north. Within the Project vicinity, CR 96 is paved and has a constructed width of approximately 20 feet and no shoulders. The bridge has an Average Daily Traffic count of 200 vehicles and is bordered by four large agricultural parcels, APN 040-180-012 (160 acres) to the west, APN 040-170-001 (80 acres) to the east, and APN 040-180-013 (160 acres) to the southwest. A smaller agricultural parcel, APN 040-170-003 (40 acres) borders the southeast portion of the Project site. There is a residential structure approximately 0.15 miles south of the Project Site (located on APN: 040-170-004). There are no posted speed limits within the Project vicinity.

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has exacerbated the documented scouring at the site. The bridge has a long history of debris build-up caused by the 180-degree bend in the creek as it crosses under CR 96 on the north end. Removal of the bends in the creek will alleviate debris build-up.

The proposed Project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A pipe culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is a 46.5 foot long, 29.5 foot wide, single-span structure. The structure type is cast-in-place, post-tensioned concrete slab. Construction of the bridge will involve excavation for and construction of concrete abutments, founded on driven piles. Construction of the roadway approaches will involve the placement of new roadway fill material, aggregate base, hot mix asphalt pavement, and installation of guard rail. As a result, permanent acquisitions will be needed from the following (4) parcels: (040-170-001 – 0.05 acre), (040-170-003 – 0.03 acre), (040-180-012 – 0.02 acre), and (040-180-013 – 0.12 acre), totaling an approximate 0.22 acre. All parcels are under Williamson Act contracts.

Temporary work within Union School Slough includes removal of the existing structure, installation of a pipe culvert at the existing bridge location, falsework erection and removal, and installation of scour countermeasures at the abutments. Temporary slough diversion is anticipated in order to complete activities within the waterway. Tree removal and removal of other vegetation along the slough will be necessary for the Project.

Relocation of overhead electrical lines, including two utility poles, along the east side of CR 96 is anticipated as part of the Project. A (Sacramento Municipal Utility District) SMUD gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be southerly of the proposed bridge location and therefore not in conflict. Temporary construction easements will be needed from four (4) parcels adjacent to the bridge to facilitate driveway conforms, utility relocations, and allow construction access.

During construction, this section of CR 96 will be closed to through traffic and a detour route made available. Vehicular traffic will be able to utilize CR 95, 98, 27, and 29 as alternative routes. Construction is anticipated to begin in Spring 2024 and have a duration of approximately 8 months.

Yolo HCP/NCCP Avoidance and Minimization Measures

The proposed Project is required to follow the conditions of the Yolo County Habitat Conservation Plan & Natural Community Conservation Plan (Yolo HCP/NCCP) with the incorporation of Avoidance and Minimization Measures (AMMs) that are applicable to the proposed Project activities. The following AMMs were identified during the development of the Natural Environment Study (Appendix C) prepared for the Project.

- **AMM1 - Establish Buffers**
- **AMM2 - Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces**
- **AMM3 - Confine and Delineate Work Area**
- **AMM4 - Cover Trenches and Holes during Construction and Maintenance**
- **AMM5: Control Fugitive Dust**
- **AMM6: Conduct Worker Training**
- **AMM7: Control Nighttime Lighting of Project Construction Sites**
- **AMM8 - Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas**
- **AMM9 - Establish Buffers around Sensitive Natural Communities**
- **AMM10 – Avoid and Minimize Effects on Wetlands and Waters**
- **AMM14 - Minimize Take and Adverse Effects on Habitat of Western Pond Turtle**
- **AMM16 - Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite**
- **AMM21 - Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird**

The application of the aforementioned AMMs and integration within specific Mitigation Measures is described in detail in the Biological Resources section of this document.

3. Environmental Factors Potentially Affected

This Initial Study has determined that, in the absence of mitigation, the proposed Project could have the potential to result in significant impacts associated with the factors checked below. Mitigation measures are identified in this Initial Study that would reduce all potentially significant impacts to less-than-significant levels.

	Aesthetics		Land Use and Planning
	Agricultural Resources		Mineral Resources
	Air Quality	✓	Noise
✓	Biological Resources		Population and Housing
	Cultural Resources		Public Services
✓	Tribal Cultural Resources		Recreation
	Energy		Transportation/Traffic
	Geology and Soils		Utilities and Service Systems
	Greenhouse Gas Emissions		Wildfire
✓	Hazards and Hazardous Materials	✓	Mandatory Findings of Significance
✓	Hydrology and Water Quality		None Identified

4. Determination

On the basis of this initial evaluation:

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

☒ I find that although the proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because the Project-specific mitigation measures described in Section III have been added to the Project. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

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

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

Signature:  **Date:** 6.9.2023

Name and Title: Stephanie Cormier, Principal Planner

5. Evaluation of Environmental Impacts

- Responses to the following questions and related discussion indicate if the proposed Project will have or potentially have a significant adverse impact on the environment.

- A brief explanation is required for all answers except "No Impact" answers that are adequately supported by referenced information sources. A "No Impact' answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the Project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors or general standards.

- 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.

- Once it has been 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 is at least one "Potentially Significant Impact" entry when the determination is made an EIR is required.

- Negative Declaration: "Less than Significant with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study will describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 4, "Earlier Analysis," may be cross-referenced).

- Earlier analyses may be used where, pursuant to tiering, a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 15063(c)(3)(D)].

- Initial studies may incorporate references to information sources for potential impacts (e.g. the general plan or zoning ordinances, etc.). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated. A source list attached, and other sources used, or individuals contacted are cited in the discussion.

- 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.

5.1 **Aesthetics**

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

Environmental Setting

The following information is from the 2030 Countywide General Plan CEQA Environmental Impact Report (EIR, Yolo County 2009b). The General Plan EIR characterizes the unincorporated area of the County as having seven separate subareas of distinct natural resources, geographic, or developed qualities to describe the varying visual and scenic resources found within the County.

Yolo County is predominantly rural, having an agricultural character throughout most of the eastern portion of the County and a more topographically varied foothill/mountain character in the western portion of the County.

The Valley Floor subarea where the proposed Project is located generally includes those lands south of the Cache Creek subarea and north of the Putah Creek/Lake Berryessa subarea as well as lands east of the Dunnigan Hills subarea and west of the Sacramento River subarea. The area includes the City of Woodland and the City of Davis, as well as the towns of Esparto and Madison and the Monument Hills community. These lands are almost entirely agricultural in land use and include vast stretches of alfalfa, rice, and tomato fields as well as other varieties of field crops and tree crops. The landscape within this subarea is predominantly flat, with expansive views of cultivated fields uninterrupted by natural or constructed landforms or significant development. Adding to the visual character of this subarea are intermittent farm implement storage and agricultural industrial buildings, including barns, processing facilities, and storage areas, which give the Valley Floor subarea a truly rural character.

Currently, Yolo County has no designated federal or State Scenic Highways; however, State Route 128 is state listed as eligible for designation as a State Scenic Highway. There are no local scenic highways designated or eligible by Yolo County within the Project area.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The landscapes and visual features of the County are of predominantly local importance and the County does not host significant numbers of viewers (Yolo County 2009a). The County's scenic areas, vistas, and views are predominantly accessible by the County's locally designated scenic highways. The Project is located approximately 5.5 miles from State Route 16, a County designated scenic highway from the Colusa County line to Capay. Views from the Project location include the valley-foothill riparian vegetation associated with Union School Slough. Construction of the Project is anticipated to require the removal of native and non-native trees and vegetation associated with Union School Slough.

The proposed vegetation removal will result in a minor change to the views of the Project site. Upon completion of the Project, existing views will be maintained. The proposed improvements are consistent with the existing land use and aesthetic features of the area. The proposed bridge replacement will not result in a substantial adverse impact to any scenic vistas. Project impacts are less than significant.

b) ***Less Than Significant Impact.*** Currently Yolo County has no designated federal or State Scenic Highways. However, State Route 128 is state listed as eligible for designation as a State Scenic Highway. See also discussion under item a) above. The Project is not expected to substantially damage scenic resources.

c) ***Less Than Significant Impact.*** The Project site is in a rural setting comprised primarily of unpaved roadway and lands used for agriculture. The majority of vegetation proposed for removal is located within the Slough and will not adversely impact the surrounding visual aesthetic features. Upon completion of the Project, existing views will be maintained. Publicly accessible vantage points include views from the road by through traffic. Project activities will not degrade the quality of public views or visual character of the Site, therefore impacts will be less than significant.

d) ***No Impact.*** The Project does not include lighting or surfaces which would contribute to glare, therefore there is no impact.

Mitigation Measures: None required.

5.2 **Agricultural and Forestry Resources**

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The Project is located in a rural area of the County and has the potential to impact lands used for agriculture. To evaluate potential impacts, a Farmlands Study Memo was developed for the proposed Project (Appendix A). Project activities are anticipated to permanently impact 0.05 acres of Prime Farmland, as defined by the Farmland Mapping and Monitoring Program (FMMP), and 0.26 acres of Farmland of Statewide Importance, totaling 0.31 acres. Project activities are anticipated to temporarily impact 0.10 acres of Prime Farmland and 0.26 acres of Farmland of Statewide Importance, totaling 0.36 acres of temporary impacts to farmlands.

The surrounding parcels, northwest (APN 040-180-012), northeast (APN 040-170-001), southwest (APN-040-180-013), and southeast (APN 040-170-003) have contracts under the Williamson Act. It is anticipated that no Williamson Act contracts will be terminated, although the parcels under contract may require revisions due to temporary construction easements and minor loss of farmland resulting from right-of-way acquisitions. Temporary construction easements totaling 0.36 acres will occur on four of the parcels as follows: APN 040-170-001 – 0.13 acres, APN 040-170-003 - 0.07 acres, APN 040-180-012 – 0.08 acres, and APN 040-180-013

– 0.08 acres. Permanent right of way acquisition totaling 0.22 acres will occur on four of the parcels as follows: APN 040-170-001 – 0.05 acres, APN 040-170-003 - 0.03 acres, APN 040-180-012 – 0.02 acres, and APN 040-180-013 – 0.12 acres. Acreage totals are approximations and are subject to revision during the right-of-way acquisition process. The remaining acreages on all parcels will remain under Williamson Act contract.

Government Code §51295 states that when a public improvement project acquires or modifies only a portion of a parcel of land subject to a Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland removed. The remaining land continues to be subject to the contract unless it is adversely affected with property acquired by eminent domain or in lieu of eminent domain. Section 15206(b)(3) of the California Environmental Quality Act Guidelines identifies the cancellation of 100 acres or more of an open space contract under the Williamson Act by a project as constituting a project of statewide, regional, or areawide significance. As stated above, it is anticipated that no Williamson Act contracts will be terminated, although parcels currently enrolled (APNs 040-180-012, 040-170-001, 040-180-013, and 040-180-003) will require minor revisions to their contracts due to the new right of way acquisitions resulting from fill slope intrusions onto adjoining properties.

The Project will not result in any impacts to agricultural improvements that might be needed for the cultivation of the affected parcels, such as wells or canals. Title 49 of the Code of Federal Regulation Part 24 Uniform Relocation Assistance and Real Property Acquisition Act (URA) for Federal and Federally assisted Programs (section 24.102 Basic Acquisitions policies or section 24.103 Criteria for appraisals) would apply to the compensation for improvements and the need to pay for salvage value. These sections would apply to the compensation to landowners for any right of way acquisition due to Project activities. Accordingly, the landowners would be compensated to replace any affected improvements.

The Yolo County Agricultural Conservation and Mitigation Program (Yolo County Ordinance §8-2404) requires mitigation for conversion of agricultural lands to predominately non-agricultural use. Section 8-2404 (c)(2)(ii) of the ordinance allows for facilities and infrastructure that do not generate revenue to be exempt from farmland conversion mitigation requirements.

Yolo County does not have a specific threshold of significance to assess potentially significant impacts to farmland. However, the County has established different criteria for protecting farmland in different contexts. First, the County's Agricultural Conservation and Mitigation Program (Sec. 8-2.404 & 405) sets an impact threshold of 20 acres for projects to require the acquisition of a permanent conservation easement, rather than the payment of in-lieu fees. Second, the County's Agricultural Zoning Regulations (Sec. 8-2.302) sets forth minimum parcel size requirements for creating new parcels in the agricultural zones of 40 acres for irrigated parcels in permanent crops, 80 acres for irrigated parcels, and 160 acres for uncultivated and not irrigated. Similarly, the County does not allow new Williamson Act contracts that are less than 40 acres of irrigated farmland; 80 gross acres where the soils are capable of cultivation but are not irrigated; and 160 acres where the soils are not capable of cultivation. Finally, the County's Williamson Act Guidelines determine a project's compatibility with agriculture based on the principles of compatibility in Government Code section 51238.1:

> (1) The use will not significantly compromise the long-term productive agricultural capability of the subject contracted parcel or parcels or on other contracted lands in agricultural preserves.
>
> (2) The use will not significantly displace or impair current or reasonably foreseeable agricultural operations on the subject contracted parcel or parcels or on other contracted lands in agricultural preserves. Uses that significantly displace agricultural operations on the subject contracted parcel or

parcels may be deemed compatible if they relate directly to the production of commercial agricultural products on the subject contracted parcel or parcels or neighboring lands, including activities such as harvesting, processing, or shipping.

(3) The use will not result in the significant removal of adjacent contracted land from agricultural or open-space use.

Accordingly, significance under CEQA can be evaluated through a three-step evaluation: 1) does the Project remove more than 20 acres of farmland, 2) does the Project reduce the farmland to less than 40 acres, or 3) are there aspects of the Project that are incompatible with agriculture on the affected parcel(s) or neighboring farmland?

Potential Environmental Effects

a) ***Less Than Significant Impact.*** There are no known Farmland Conservation Easements that will be impacted by the proposed Project. These permanent impacts to farmland do not remove more than 20 acres of farmland, do not reduce the size of a parcel to the 40 acres applicable to irrigated farmland, and will not significantly compromise the long-term productive agricultural capability of any parcel, displace any current or foreseeable farming operations, or remove adjacent agricultural or open space land. Due to the relatively minor amount of farmland conversion, this impact is considered to be less than significant.

b) ***Less Than Significant Impact.*** The affected parcels within the Project area are zoned by Yolo County as Agricultural Intensive (A-N) and are designated for Agriculture (AG) in the Yolo County General Plan. Roads are not separately zoned and are included in any zone without the need for a special designation. The four parcels under Williamson Act contracts will sustain approximately 0.36 ac of temporary impacts and 0.22 ac of permanent impacts. The following describes impacts per parcel: APN 040-180-013 - 0.12 ac permanent, APN 040-180-012 - 0.02 ac permanent, APN 040-170-003 – 0.03 ac permanent, APN 040-017-001 - 0.05 ac permanent. APN 040-170-001 - 0.13 ac temporary, APN040-170-003 - 0.07 ac temporary, APN 040-180-012 - 0.08 ac temporary, and APN 040-180-013 - 0.08 ac temporary. The removal of Williamson Act contracted land to accommodate the Project is authorized by the California Land Conservation Act, and therefore does not conflict with the Williamson Act (California Department of Conservation 2020).

c) ***No Impact.*** The proposed Project consists solely of a bridge replacement and does not include any rezoning activities.

d) ***No Impact.*** The proposed Project will not result in the loss of, or conversion of, forest land.

e) ***No Impact.*** The Project does not include other activities that could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

Mitigation Measures: None required

5.3 **Air Quality**

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation 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?	☐	☐	☒	☐

Environmental Setting

The Project area is located in the Sacramento Valley Air Basin (SVAB). The air quality of a region is determined by the air pollutant emissions (quantities and type of pollutants measured by weight) and by ambient air quality (the concentration of pollutants within a specified volume of air). Air pollutants are characterized as primary and secondary pollutants. Primary pollutants are those emitted directly into the air, for example carbon monoxide (CO), and can be traced to a single pollutant source. Secondary pollutants are those pollutants that form through chemical reactions in the atmosphere, for example reactive organic gasses (ROG) and nitrogen oxides (NO_X) combine to form ground level ozone, or smog.

Congress established much of the basic structure of the Clean Air Act in 1970 and made major revisions in 1977 and 1990. The Federal Clean Air Act established national ambient air quality standards (NAAQS). These standards are divided into primary and secondary standards. Primary standards are designed to protect public health and secondary standards are designed to protect other values. Because of the health-based criteria identified in setting the NAAQS, the air pollutants are termed “criteria” pollutants. California has adopted its own, more stringent, ambient air quality standards (CAAQS). Table 1 lists the SVAB attainment status for federal and state criteria pollutants.

Table 1. Attainment Status for SVAB in Yolo County

Pollutant	National Designation	State Designation
Ozone	Nonattainment (8 hr.)	Nonattainment-Transitional
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Nonattainment	Unclassified
CO	Unclassified/ Attainment	Attainment
NO_2	Unclassified/ Attainment	Attainment
SO_2	Unclassified/ Attainment	Attainment
Sulfates	NA	Attainment
Lead	Unclassified/ Attainment	Attainment
Hydrogen Sulfide	NA	Unclassified
Visibility Reducing Particles	NA	Unclassified

(Source: CARB 2021)

Yolo County is currently in nonattainment status for the 8-hour ozone and $PM_{2.5}$ NAAQS. The County is in nonattainment-transitional status for the ozone and nonattainment status for the PM_{10} CAAQS.

The Yolo-Solano Air Quality Management District (YSAQMD) administers the state and federal Clean Air Acts in accordance with state and federal guidelines. The YSAQMD regulates air quality through its district rules and permit authority. It also participates in planning review of discretionary project applications and provides recommendations. The following YSAQMD rules may apply to the Project:

- **Rule 2.3 Visible Emissions:** The purpose of this rule is to limit the emissions of visible air contaminants to the atmosphere.
- **Rule 2.5 Nuisance:** Prohibits the discharge of air containments which cause injury, detriment, nuisance, or annoyance.
- **Rule 2.11 Particulate Matter:** The purpose of this rule is to protect the ambient air quality by establishing a particulate matter emission standard.
- **Rule 2.28 Cutback and Emulsified Asphalts:** The purpose of this Rule is to limit the emissions of organic compounds from the use of cutback and emulsified asphalts in paving materials, paving, and maintenance operations.
- **Rule 2.32 Stationary Internal Combustion Engines:** The purpose of this Rule is to limit the emission of oxides of nitrogen (NOx) and carbon monoxide (CO) from stationary internal combustion engines.
- **Rule 9.8 Asbestos – Serpentine Rock:** The purpose of this Rule is to limit asbestos emissions to the atmosphere from serpentine rock by prohibiting the use or sale of serpentine rock containing more than one percent (1%) asbestos for surfacing applications.

The YSAQMD sets threshold levels for use in evaluating the significance of criteria air pollutant emissions from Project-related mobile and area sources in the *Handbook for Assessing and Mitigating Air Quality*

Impacts (the Handbook, YSAQMD 2007). The Handbook identifies the following significance thresholds for use in evaluating criteria air pollutant emissions from Project-related activities.

- Reactive Organic Gases (ROG) 10 tons per year (approx. 54.8 pounds per day)
- Oxides of Nitrogen (NOx) 10 tons per year (approx. 54.8 pounds per day)
- Particulate Matter (PM10) 80 pounds per day
- Carbon Monoxide (CO) Violation of State ambient air quality standard

The Project will not increase the capacity of CR 96. Since the Project does not increase the capacity of CR 96, the Project will not result in increased operational vehicular emissions. The air quality analysis below is focused on potential construction related impacts.

Construction emissions were estimated for the Project using the Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM), Version 9.0.0 (Appendix B). The RCEM was developed to estimate emissions from linear project types including road and bridge construction. The RCEM divides the Project into four 'Construction Periods':

- Grubbing/Land Clearing
- Grading/Excavation
- Drainage/Utilities/Sub-Grade
- Paving

Based on similar road projects, the assumptions presented in Table 2 regarding type of construction equipment and use duration were used in the RCEM. Other Project assumptions used in the RCEM include an eight-month construction schedule starting in 2023, and equipment assumed to run eight hours per day. Results of the RCEM, based on the Project assumptions, are in Table 3.

Table 2. Construction Equipment and Use Assumptions.

Construction Period	Equipment	
	Quantity (Assumed Running Hrs Per Day)	**Type**
Grubbing/ Land Clearing	1(8) 2(8) 2(8)	Crawler Tractors Excavators Signal board
Grading/Excavation	1(8) 1(8) 2(8) 2(8) 1(8) 2(8) 2(8) 3(8) 1(8)	Crawler Tractors Excavators Graders Roller Rubber Tired Loader Scrapers Signal board Tractor/Loader Drill Rig
Drainage/Utilities/Sub-Grade	1(8) 1(8) 1(8) 1(8) 1(8) 2(8) 2(8) 2(8)	Air Compressor Generator Set Grader Plate Compactor Pump Scrapers Signal Board Backhoe
Paving	1(8) 1(8) 2(8) 2(8) 2(8)	Paver Paving Equipment Roller Signal Board Tractor/Loader

Table 3. Estimated Construction Emissions with Mitigation Options

Project Phases	ROG lbs/day	NOx lbs/day	PM10 Total lbs/day	CO lbs/day
Grubbing/ Land Clearing	0.97	9.34	5.41	9.86
Grading/excavation	4.86	50.18	7.10	40.17
Drainage/utilities/sub-grade	3.52	34.37	6.48	33.04
Paving	1.14	10.92	0.57	14.99
Maximum lbs/day	4.86	50.18	7.10	40.17
Significance Threshold (tons/year)	*10*	*10*	--	--
Significance Threshold lbs/day	*54.8*	*54.8*	*80*	--
Significant?	**No**	**No**	**No**	***N/A***

Notes: Data entered to emissions model: Project Start Year: 2023; Project Length (months): 8; Total Project Area (acres): 3.6; Total Soil Imported/Exported (yd^3/day): 20. PM10 estimates assume 50% control of fugitive dust from watering and associated dust control measures. Total PM10 emissions are the sum of *exhaust* and *fugitive dust* emissions.

Potential Environmental Effects

a) ***No Impact.*** A Project is inconsistent with the applicable air quality plan if it would result in population and/or employment growth that exceeds growth estimated in the applicable air quality plan. The proposed Project does not include development of new housing or employment centers and would not induce population or employment growth; therefore, the proposed Project would not conflict with or obstruct the implementation of any air quality plan.

b) ***Less Than Significant Impact.*** Yolo County is currently in nonattainment status for the 8-hour ozone and $PM_{2.5,}$ NAAQS as well as the ozone and PM_{10} CAAQS. Project construction would create short-term increases in ROG, NOx, and PM_{10} emissions from vehicle and equipment operation. The RCEM estimates are below the Yolo County CEQA significance threshold of 10 tons per year (54.8 lbs per day) each for ROG and NOx and 80 lbs/day PM_{10}. The Project would not generate additional traffic on CR 96, would not affect intersection operations, and would not result in a potential violation of the CO standard. This impact is considered less than significant.

c) ***Less Than Significant Impact.*** Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Sensitive land uses occur where sensitive individuals are most likely

to spend time (e.g., schools and schoolyards, parks and playgrounds, day care centers, nursing homes, hospitals, and residential communities). Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution.

The Project is located northwest of the City of Davis. The Project site is in proximity to agricultural and rural land uses. Potential receptors in the Project area consist of residential home sites south of the Project site. The nearest home-site is approximately 0.15 miles from the Project area. Sensitive individuals who may be in the vicinity of the proposed Project have the potential to be exposed to PM_{10}, $PM_{2.5}$, CO, ROG, and NOx during construction. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential air quality impacts on sensitive receptors. These impacts are considered less than significant.

d) ***Less Than Significant Impact.*** Construction activities would involve the use of construction equipment, which have distinctive odors. Odors from construction activities are considered less than significant because of the limited number of the public affected and the short-term nature of the emissions. The proposed Project would not result in increased production of odors causing compounds beyond the construction period. In accordance with district rule 3.1, the Yolo-Solano Air Quality Management District requires all contractors and subcontractors using portable generators above 50hp to obtain either a statewide Portable Equipment Registration Program (PERP) placard and sticker or a valid District Permit to Operate (PTO) permit. Obtaining a PERP or PTO permit will ensure regulated machinery associated with any other emissions, or odors, are accounted for. Impacts will be less than significant.

Mitigation Measures: None required.

5.4 **Biological Resources**

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

Environmental Setting

Potential impacts to biological and wetlands resources were evaluated in the following Project documents:

- **Natural Environment Study (NES):** The NES is a standard Caltrans report format for documenting and evaluating the potential Project impacts to biological resources (Gallaway Enterprises 2022).
- **Draft Delineation of Waters of the United States (WD)**: This report evaluates and delineates wetland and other waters of the U.S. in the Project area (Gallaway Enterprises 2021b).

Planning level surveys and protocol-level surveys were conducted June 23, 2020, and October 20, 2021, to identify any Yolo HCP/NCCP covered, rare, endangered, threatened, or sensitive species and their habitats, and their potential to occur within the Biological Survey Area (BSA). Additionally, surveys included land cover types and botanical habitat assessments. Survey results were included in the NES and WD. The documents conclude the following regarding biological resources:

- Modeled habitat for wildlife species covered under the Yolo HCP/NCCP includes western pond turtle (*Emys marmorata*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*),

tricolored blackbird (*Agelaius tricolor*), and western yellow-billed cuckoo (*Coccyzus americanus occidentalis*).

- There is suitable habitat within the BSA for Swainson's hawk, white-tailed kite, western pond turtle, tricolored blackbird, northern harrier, pallid bat (*Antrozous pallidus*), and migratory birds and raptors protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC).
- The Project area does not provide suitable habitat for special-status plant species.
- The Project will result in impacts to jurisdictional Waters of the United States (WOTUS) under §404 of the Clean Water Act (CWA).
- Permits and authorizations required for the Project include a §404 CWA Nationwide Permit from the U.S. Army Corps of Engineers (Corps), a §401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB), a National Pollutant Discharge Elimination System (NPDES) Permit from the RWQCB, and a Fish and Game Code §1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife (CDFW). The Project will seek coverage under the Yolo HCP/NCCP.

Yolo Habitat Conservation Plan/Natural Communities Conservation Plan (Yolo HCP/NCCP)

The Yolo HCP/NCCP is a comprehensive, county-wide plan to provide for the conservation of 12 sensitive species and the natural communities and agricultural land on which they depend, as well as a streamlined permitting process to address the effects of a range of future anticipated activities on these 12 species. The Yolo HCP/NCCP refers to the range of future anticipated activities as *covered activities* and the 12 sensitive species covered by this HCP/NCCP as *covered species*.

The Yolo HCP/NCCP Section 4.3, Avoidance and Minimization Measures (AMMs), describes conditions that project proponents must adopt to receive coverage under the Plans. These measures specify how project proponents will avoid and minimize take of covered species during implementation of covered activities and are referred to herein as AMMs. Section 4.3.1, General Project Design, describes AMMs that apply to the design of all development Projects. Section 4.3.2, General Construction and Operations and Maintenance, describes AMMs that apply to all construction and operations, and maintenance activities. Section 4.3.3, Sensitive Natural Communities, describes AMMs that are specific to rare or sensitive natural communities, such as the fresh emergent wetland natural community and other natural communities associated with aquatic features, and therefore warrant specific avoidance and minimization measures. Section 4.3.4, Covered Species, describes AMMs that are specific to each covered species.

Covered Species, as defined by the Yolo HCP/NCCP, refers to those species for which take authorization would be provided by the permits issued for the approved HCP/NCCP. The Yolo HCP/NCCP provides for the conservation and management of these species in the Plan Area to offset the effects of implementing the covered activities on these species.

Physical Conditions

The Project area is located within the Sacramento Valley, west of Davis in unincorporated Yolo County, California. The Project area is composed primarily of existing asphalt roadway, an existing bridge over Union School Slough, and gravel road shoulders. Land within the Project area that occurs outside of the gravel road shoulders is primarily composed of agricultural land. Soils within the Project area consist of silty clay loam.

The average annual precipitation for the area is 17.55 inches and the average temperature is 60.4° F (Western Regional Climate Center 2021). The Project area occurs at an elevation of approximately 78 feet above sea level and is sloped between 0 and 2 percent.

There is one drainage (Union School Slough) present within the Project area (See Appendix D: Draft Delineation of Waters of the U.S. Map). There are no wetland features present within the Project site.

Biological Conditions

Land cover types delineated by the Yolo HCP/NCCP within the Project area are Lacustrine and Riverine, Valley Foothill Riparian: Sandbar Willow, Himalayan Blackberry, Valley Oak, and Shining Willow, Semi-agricultural/Incidental to Agriculture, Cultivated Lands: Alfalfa, Other Agriculture, and Barren: Anthropogenic.

Per the Project NES, the Project has the potential to affect four (4) HCP/NCCP covered species:

- Western pond turtle (*Emys marmorata*), California Species of Special Concern
- Swainson's hawk (*Buteo swainsoni*), California listed as threatened
- White-tailed kite (*Elanus leucurus*), California Fully Protected species
- Tricolored blackbird (*Agelaius tricolor*), California listed as threatened

The Project also has the potential to affect nesting migratory birds and raptors protected by the MBTA and CFGC, as well as northern harrier and pallid bat, both California Species of Special Concern.

A comprehensive list of species that are known to occur in the region and were evaluated for their potential to occur in the Project area is included in the NES (Appendix C). Field surveys conducted by Conservancy-approved qualified biologists identified the presence of habitat that could support the wildlife listed above.

Yolo HCP/NCCP Designated Land Cover Types within the Project Area

Lacustrine and Riverine

The Lacustrine and Riverine SNC is defined by the Yolo HCP/NCCP as the open water portions of lakes, rivers, and streams. Within the BSA, there are two (2) drainages that qualify as Riverine habitat. The drainages within the Project area are Union School Slough and Union School Slough Diversion Channel. Union School Slough and Union School Slough Diversion Channel are intermittent drainages that are used to transport agricultural water. There are patches of fresh emergent vegetation within Union School Slough. Intermittent drainages convey precipitation and agricultural runoff during the wetter winter and spring months, and typically dry up during the summer and early fall. These drainages may experience summertime flows in association with the release of agricultural irrigation. Flowing water was observed within Union School Slough during the June 23, 2020 field visit.

Cultivated Lands: Alfalfa

The Cultivated Lands: alfalfa land cover type consists of a relatively low-growing perennial herbaceous legume species that is periodically irrigated and cut for hay, often five times during the growing season. The high protein content of its leaves makes alfalfa highly palatable for rodents such as ground squirrels, gophers, and voles, which are often present in high numbers in the fields. Alfalfa crops may support foraging habitat for Swainson's hawk and white-tailed kite per the Yolo HCP/NCCP.

Valley Foothill Riparian Natural Community

The Valley Foothill Riparian land cover type is designated as a SNC by the Yolo HCP/NCCP and consists of deciduous scrubby vegetation along streams and at the margins of rivers, dominated by willows, and areas dominated by herbaceous riparian vegetation if less than 1 acre in size. Within the Project area the riparian vegetation was dominated by a dense shrub canopy of sandbar willow (Salix exigua) and an understory of Himalayan blackberry (Rubus armeniacus). Also lining the channel was the occasional valley oak (Quercus lobata) and shining willow (Salix lasiandra). Valley foothill riparian habitats provide food, water, migration, and dispersal corridors for fish species, and escape, nesting, and thermal cover for an abundance of other wildlife species.

Semi-agricultural/Incidental to Agriculture

Semi agricultural areas include livestock feedlots, farmsteads, and miscellaneous semi agricultural features such as small roads, ditches, and unplanted areas of cropped fields (e.g., field edges).

Barren

The Barren land cover type consists of areas that are devoid of vegetation. Barren, rock outcrop, levee (tops and riprapped areas), and gravel/sand bars land cover types fall within this general definition. As opposed to the urban land cover type, which is dominated by structures and pavement, barren lands include areas that have been cleared of vegetation and are not closely associated with a human structure. Barren land does not typically support wildlife species, although some species such as killdeer (Charadrius vociferus) and western fence lizard (Sceloporus occidentalis) may be found breeding barren habitat.

Impacts to Yolo HCP/NCCP land cover types that occur within the Project area have been quantified below.

Table 4. Impacts to Land Cover Types

Impacts to Land Cover Types		
Land Cover Types	**Permanent Impacts Acres**	**Fee Buffer Acres**
Valley Foothill Riparian	0.22	0.04
Other Agriculture	0.05	0.07
Lacustrine/Riverine	0.17	0.24
Barren	1.03	0.15
Cultivated Lands - Alfalfa	0.09	0.07
Semiagricultural/Incidental to Agriculture	0.53	0.16
Totals =	**2.09**	**0.73**

Yolo HCP/NCCP Avoidance and Minimization Measures

The Project will implement the following required Yolo HCP/NCCP AMMs into the Project design and the mitigation measures (MM) presented in this document:

- **AMM1: Establish Buffers:** Addressed in MM BIO-6 (Wetlands and Waters)

- **AMM2: Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces**
- **AMM3: Confine and Delineate Work Area:** Addressed in MM BIO-6 (Wetlands and Waters), and AMM9 (Establish Buffers around Sensitive Natural Communities),
- **AMM4: Cover Trenches and Holes during Construction and Maintenance:** Addressed in MM BIO-1 (Western Pond Turtle).
- **AMM5: Control Fugitive Dust:** This Yolo HCP/NCCP AMM is addressed through adhering to YSAQMD Rules in section 5.3 above.
- **AMM6: Conduct Worker Training:** Addressed in MM BIO-8 (Worker Environmental Training Program).
- **AMM7: Control Nighttime Lighting of Project Construction Sites:** Addressed in MM BIO-10 (Control Nighttime Lighting).
- **AMM8: Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities).
- **AMM9: Establish Buffers around Sensitive Natural Communities:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities).
- **AMM10: Avoid and Minimize Effects on Wetlands and Waters:** Addressed in MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities).
- **AMM14: Minimize Take and Adverse Effects on Habitat of Western Pond Turtle:** Addressed in MM BIO-1 (Western Pond Turtle).
- **AMM16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite:** Addressed in MM BIO-2 (Swainson's Hawk and White-Tailed Kite).
- **AMM21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird:** Addressed in MM BIO-3 (Tricolored Blackbird).

Potential Environmental Effects

a) ***Less Than Significant with Mitigation Incorporated***

Special-Status Wildlife Species:

Western pond turtle (*Emys marmorata*): The western pond turtle is a Species of Special Concern (SSC) in California and is a covered species under the Yolo HCP/NCCP. There is suitable habitat for western pond turtle present within the Lacustrine and Riverine habitat types within the Project area. During the June 23, 2020 field visit Gallaway Enterprises observed a western pond turtle within the BSA.

Implementation of MM BIO-1 (Western Pond Turtle), which incorporates Yolo HCP/NCCP AMMs 4 and 14 (Cover Trenches and Holes during Construction and Maintenance; Minimize Take and Adverse Effects on Habitat of Western Pond Turtle), will reduce potential impacts to western pond turtle by minimizing potential entrapment to less than significant. Implementation of MM BIO-6

(Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities), and MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to western pond turtle by avoiding environmentally sensitive areas and sensitive natural communities, and requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

Nesting Migratory Birds and Raptors: The Project area provides potential nesting sites for birds listed under the federal MBTA, the State Migratory Bird Policy Act (MBPA) of 2019, and is regulated by the Yolo HCP/NCCP and the CFGC. Depending on the species, birds may nest in trees, shrubs, in or on the ground, and on artificial structures such as buildings, culverts, headwalls, poles, and signs.

The planning level surveys determined that potentially suitable habitat for Yolo HCP/NCCP-covered bird species including Swainson's hawk, white-tailed kite, and tricolored blackbird occurs within or adjacent to the Project area. The removal of trees in the Project site has the potential to impact nesting sites.

Implementation of MM BIO-2 (Swainson's Hawk and White-Tailed Kite) and MM BIO-3 (Tricolored Blackbird) will reduce potential impacts to Swainson's hawk, white-tailed kite, and tricolored blackbird by requiring preconstruction surveys to identify active nests and/or presence of species. Impacts will be reduced to a less than significant level.

MM BIO-4 below provides for preconstruction surveys for other birds protected by the MBTA or California Fish and Game Code. Implementation of MM BIO-4 will reduce potential impacts to nesting migratory birds and raptors by restricting Project activities and vegetation removal, thereby reducing impacts to a less than significant level.

Implementation of MM BIO-6 (Wetlands and Waters), and MM BIO-7 (Sensitive Natural Communities), and MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to Swainson's hawk, white-tailed kite, tricolored blackbird, and nesting migratory birds and raptors by avoiding environmentally sensitive areas and sensitive natural communities and requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

Pallid bat (*Antrozous pallidus*): Pallid bats are designated as a CDFW SSC. Pallid bats roost alone, in small groups (2 to 20 bats), or gregariously (100s of individuals). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Roosts generally have unobstructed entrances/exits, and are high above the ground, warm, and inaccessible to terrestrial predators.

Some mature trees within the BSA could potentially provide suitable roosting habitat for pallid bats. Evidence of roosting, during the June 23, 2020 site visit, (i.e., urine stains and guano) was not observed during the habitat assessment. There are two (2) CNDDB occurrences of pallid bat within 10 miles of the BSA; however, these occurrences are from 1964 and 1957 and are mapped only to the nearby cities

where they were found, with no further occurrence information. There are no other CNDDB occurrences within 20 miles of the BSA.

MM BIO-5 (Bat Avoidance and Minimization) below provides conditions on the timing of mature tree and bridge removal activities and measures such as preconstruction surveys prior to the start of construction to avoid and minimize impacts, thereby reducing impacts to a less than significant level.

b) ***Less Than Significant with Mitigation Incorporated.*** The Project area contains Sensitive Natural Communities designated by the Yolo HCP/NCCP: Lacustrine and Riverine and Valley Foothill Riparian. Drainages within the Project area are potential waters of the United States (WOTUS) and State. Impacts to Wetlands and Waters are discussed under Item c) below.

Valley Foothill Riparian: A narrow band of Valley Foothill Riparian associated with Union School Slough occurs within the BSA. Project implementation will result in 0.22 acre of permanent impacts to Valley Foothill Riparian SNC resulting from the installation of the bridge structure. The 2030 Countywide General Plan contains Conservation policies that protect biological resources, including Policy CO-2.3, which encourages the preservation and enhancement of biological communities such as heritage valley oaks, remnant valley oak groves and roadside tree rows. A heritage tree preservation ordinance has not yet been adopted by the County. Several trees (approximately 7 oak trees) in the Project corridor that are planned for removal as part of the proposed Project are not of composition to be considered a remnant valley oak grove. Some of the oak trees are situated in a row configuration along Union School Slough and meet the definition of an oak woodland as defined by the Oak Woodland Conservation Act (Fish and Game Code §1361). Some of the trees that are planned for removal are in a roadside tree row configuration, but do not embody the size or linear continuity characteristic of high value roadside tree rows found in other parts of the County. The final tree removal will be determined by the County during final design. In order to document the number of trees removed and to ensure that impacts to tree resources are minimized and mitigated, MM BIO-9 Tree Removal Documentation and Replacement is required. There will be no conflicts with local policies or ordinances that regulate or protect biological resources in the Project area; therefore, the Project would not conflict with any local policies or ordinances protecting biological resources. See also discussion below regarding the Yolo HCP/NCCP. With the implementation of MM BIO-9 Tree Removal Documentation and Replacement, the County will ensure that all trees proposed for removal will be documented, a plan for replacement will be developed and implemented, and trees retained will receive adequate avoidance and minimization measures during construction activities. As a result, impacts would be reduced to a less than significant level.

Yolo HCP/NCCP AMM9 (Establish Buffers around Sensitive Natural Communities, Valley Foothill Riparian) states that a 100 ft. buffer will be provided from the canopy dripline of Valley Foothill Riparian habitat. AMM9 then goes on to state that '*Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.*' This bridge replacement Project cannot completely avoid impacts to Valley Foothill Riparian in the Project area. The Project will implement all applicable Yolo HCP/NCCP AMMs as listed above and below.

Lacustrine and Riverine: The Project site contains a portion of Union School Slough which is categorized as Riverine SNC. Union School Slough has been altered for agricultural use and surrounding urbanization of the area; however, it is considered open water land cover type within the

Lacustrine and Riverine SNC when water is present. The proposed Project will be limited to the replacement of the existing bridge and conforming approach roadwork within the Project area. Approximately 0.17 acres of Lacustrine and Riverine SNC will be permanently impacted by project activities.

Implementation of MM BIO-6 (Wetlands and Waters) and MM BIO-7 (Sensitive Natural Communities) will reduce potential impacts to SNCs through avoidance and minimization of impacts, payment of Yolo HCP/NCCP fees, acquiring applicable permits and fulfilling compensatory mitigation requirements to less than significant level. Implementation of MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to Sensitive Natural Communities by requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

c) ***Less Than Significant with Mitigation Incorporated.*** The Project area contains 0.80 acres of potential waters of the U.S. and State, and the Project proposes to directly impact 0.17 acres of potentially jurisdictional waters as a result of the Project.

Construction has the potential to temporarily impact water quality and fill state and federally protected waters. During construction, water quality will be protected by implementation of Best Management Practices. Implementation of MM BIO-6 (Wetlands and Waters) will reduce potential impacts to state and federally protected waters and wetlands through avoidance and minimization of impacts, payment of Yolo HCP/NCCP fees, acquiring applicable permits and fulfilling compensatory mitigation requirements to less than significant level. Implementation of MM BIO-7 (Sensitive Natural Communities) and MM BIO-8 (Worker Environmental Training Program) will also reduce potential impacts to state and federally protected waters by requiring that all construction personnel be properly trained in avoidance measures. Thus, impacts would be reduced to a less than significant level.

d) ***Less Than Significant with Mitigation Incorporated.*** Construction of the Project could temporarily disrupt movement of native wildlife species that occur in or adjacent to the Project area. In the event that lighting is required for either nighttime work or security reasons, lighting may be detrimental to native species. Both short- and long-term light exposure could affect wildlife. Short-term exposure to bright lights could temporarily reduce visual capacity in some species, making them vulnerable to predation. Longer-term night lighting could disorient wildlife, alter foraging and reproductive behaviors, increase predation risk, and inhibit movement to and from breeding areas by stimulating light-seeking behavior During project construction, wildlife will be able to move around the Project area or move through it at night. Additionally, once construction is complete the Project area will be restored and wildlife will continue to be able to move around the Project area, similar to existing conditions. Therefore, the Project would not interfere substantially with the movement of native fish and wildlife, resulting in a less than significant impact. Although construction disturbance may temporarily hinder wildlife movements within the Project area, the impact is less than significant due to its short-term nature and its alignment on the existing roadway. Due to the potential use of nighttime lighting, there may be interference with wildlife species visual capacity, foraging and reproductive behaviors resulting in a potential impact. With the implementation of MM BIO-10 Control Nighttime Lighting which implements Yolo HCP/NCCP AMM7 (Control Nighttime Lighting of Project Construction Sites) potential impacts from nighttime lighting on species and adjacent habitats will be minimized. Impacts would be reduced to a less than significant level.

e) ***Less Than Significant with Mitigation Incorporated.*** The 2030 Countywide General Plan contains Conservation policies that protect biological resources, including Policy CO-2.3, which encourages the preservation and enhancement of biological communities such as heritage valley oaks, remnant valley oak groves and roadside tree rows. A heritage tree preservation ordinance has not yet been adopted by the County. Several trees in the Project corridor that are planned for removal as part of the proposed Project are not of composition to be considered a remnant valley oak grove. In order to document the number of trees removed and to ensure that impacts to tree resources are minimized and mitigated, MM BIO-9 Tree Removal Documentation and Replacement is required. There will be no conflicts with local policies or ordinances that regulate or protect biological resources in the Project area; therefore, the Project would not conflict with any local policies or ordinances protecting biological resources. The Project does not conflict with any local policies or ordinances protecting biological resources. See also discussion below regarding the Yolo HCP/NCCP. With the implementation of MM BIO-9 Tree Removal Documentation and Replacement, the County will ensure that all trees proposed for removal will be documented, a plan for replacement will be developed and implemented and trees retained will receive adequate avoidance and minimization measures during construction activities. Thus, impacts would be reduced to a less than significant level.

f) ***No Impact.*** The Yolo HCP/NCCP addresses public and private activities and the protection of 12 covered species and the land on which these species depend within Yolo County. The Yolo HCP/NCCP ensures compliance with the federal Endangered Species Act (ESA), Natural Communities Conservation Planning Act (NCCPA), and CESA for covered activities that may affect the covered species. Pursuant to Section 10(a)(1)(B) of ESA and Section 2835 of the NCCPA chapter of the California Fish and Game Code (Fish & Game Code), the Yolo HCP/NCCP provides Permittees (i.e., Yolo County, the four incorporated cities, and the Conservancy) with incidental take permits for the 12 covered species.

The Project is a rural infrastructure Project and is a "covered activity" under the HCP/NCCP. The Project will be implemented in compliance with permit requirements and conditions as well as avoidance and minimization measures that are listed in the HCP/NCCP. As applicable, the Project will pay mitigation fees for the acreage of land-cover types that are impacted by the Project and implement Project-specific AMMs. The Project-specific Yolo HCP/NCCP AMMs that apply to the Project are AMMs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 14, 16, and 21, which are described above and noted with the associated mitigation measures as applicable. Through adherence to the terms of the HCP/NCCP, which include payment of mitigation fees and implementation of the listed AMMs, there will be no conflict with the HCP/NCCP and therefore no impact as it relates to this topic.

Mitigation Measures:

MM BIO-1 – Western Pond Turtle

Implements Yolo HCP/NCCP AMMs 4 and 14: Cover Trenches and Holes during Construction and Maintenance; Minimize Take and Adverse Effects on Habitat of Western Pond Turtle

The following measures will reduce potential impacts to western pond turtles:

- A pre-construction survey for western pond turtle shall be conducted by a qualified biologist. If a western pond turtle nest is identified during the survey, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. The County will inform CDFW if the nest cannot be avoided and such an activity must occur.
- If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground-disturbing activity for nests that may be unearthed during the disturbance, and will move out of harm's way any turtles or hatchlings found.
- To prevent injury and mortality of western pond turtle, workers will cover open trenches and holes associated with implementation of covered activities that affect habitat for these species or design the trenches and holes with escape ramps that can be used during non-working hours. The construction contractor will inspect open trenches and holes prior to filling and contact a qualified biologist to remove or release any trapped wildlife found in the trenches or holes.

MM BIO-2 – Swainson's Hawk and White-Tailed Kite

Implements Yolo HCP/NCCP AMM16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on Swainson's hawk and white-tailed kite to the maximum extent possible:

- The Project proponent will retain a qualified biologist to conduct preconstruction surveys for active nests consistent with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 1 and August 30, with the final survey conducted no more than 3 days prior to the beginning of the construction activity. The results of the survey(s) will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If Project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the Project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

MM BIO-3 – Tricolored Blackbird

Implements Yolo HCP/NCCP AMM21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on tricolored blackbird to the maximum extent possible:

- The qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).
- If active colony is present or has been present within the last 5 years, implement a species protection buffer within 1,300 feet of the colony site(s) from March 1 to July 30, unless a shorter distance is approved, based on site-specific conditions, by the Conservancy and CDFW.

MM BIO-4 – Special-Status Bird Species, Migratory Birds, and Raptors

The following measures will be implemented to further reduce the potential for impacts on special-status and migratory birds and raptors that may nest in or near the Project area, including northern harrier:

- Project activities and vegetation removal within the Project area shall be initiated outside of the bird nesting season (February 1 – August 31).
- If Project activities and vegetation removal cannot be initiated outside of the bird nesting season then the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 3 days prior to the initiation of Project activities.
    - If an active avian nest (i.e., with egg[s] or young) is observed within 250 feet of the Project area during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

MM BIO-5 – Bat Avoidance and Minimization

The following measures will be implemented to further reduce the potential for impacts on bats that may roost in the Project area.

- Mature trees should be removed and/or fallen between March 1 – April 15, or between September 1 – October 15 (or when evening temperatures are above 45° and rainfall is less than ½ inch in 24 hours). Trees should be removed at dusk to minimize impacts to roosting bats.
- If tree removal cannot be performed outside of the maternity season, a qualified biologist shall conduct a preconstruction survey of suitable roosting habitat within 5 days prior to construction activities.

- If bats are found, a qualified biologist shall establish a no-disturbance buffer and develop a bat exclusion plan for the passive removal of bats. The plan shall be submitted to CDFW for review prior to implementation.
- If no roosting bats and no potential for roosting bats are found, tree removal can proceed.
- If potential for roosting bats has been determined and no bats are discovered, a qualified biologist should monitor tree removal activities to ensure the avoidance and minimization of take of regulated species.

MM BIO-6 – Wetlands and Waters

Implements Yolo HCP/NCCP AMMs 1, 2, 3, 8, 9, and 10: Establish Buffers around Sensitive Natural Communities; Confine and Delineate Work Area to Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas; Avoid and Minimize Effects on Wetlands and Waters

The following measures shall be implemented to avoid or minimize the potential for Project-related impacts on wetlands and waters:

- The County will comply with the terms of a Clean Water Act Section 404 permit issued by the Corps and Section 401 water quality certification issued by the RWQCB for activities involving the discharge of fill material into jurisdictional drainages. The County will also comply with terms of a Streambed Alteration Agreement with the CDFW (if determined necessary by the CDFW). Prior to any discharge into drainages, the required permits and authorizations will be obtained from the respective agencies. All terms and conditions of the required permits and authorizations will be implemented.
- Water quality BMPs will be installed around Union School Slough, and Union School Slough Diversion Channel, in a manner that prevents water, sediment, and chemicals from draining into the feature, and all staging, storage, stockpile areas, and off-road travel routes will be located as far as practicable away from the drainage.
- Mitigation for 0.17 acres (919.4 linear feet) of permanent impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.
- Impacts to Riverine Sensitive Natural Community will be mitigated for through the Yolo HCP/NCCP Natural Community and Land Cover Impacts Mitigation Fees. The specific acreage of compensatory mitigation credits is subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-7 – Sensitive Natural Communities

Implements Yolo HCP/NCCP AMM9, Establish Buffers around Sensitive Natural Communities

Environmentally Sensitive Area (ESA) fencing will be established around the following Sensitive Natural Communities where they occur within or adjacent to the Project area, when feasible. These areas will be

identified on construction drawings and demarcated in the field with flagging and/or signs identifying the area as off limits to all personnel, equipment, and ground-disturbing activities.

Per Yolo HCP/NCCP AMM9, the buffers for each Sensitive Natural Community are as follows:

- Valley foothill riparian: 100 feet from canopy dripline. If avoidance is infeasible, a lesser buffer than is stipulated in the AMMs may be approved by the Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the Project purpose (e.g., if the purpose of the Project is to provide a stream crossing or replace a bridge, the Project may encroach into the buffer and the natural community or species habitat to the extent that is necessary to fulfill the Project purpose). Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.
- Lacustrine and riverine: Outside urban planning units, 100 feet from the top of banks. Within urban planning units, 25 feet from the top of the banks.

MM BIO-8 – Worker Environmental Training Program

Implements Yolo HCP/NCCP AMM6: Conduct Worker Training

- All construction personnel will participate in a worker environmental training program approved/authorized by the Conservancy and administered by a qualified biologist. The training will provide education regarding sensitive natural communities and covered species and their habitats, the need to avoid adverse effects, state and federal protection, and the legal implications of violating the FESA and NCCPA Permits. A pre-recorded video presentation by a qualified biologist shown to construction personnel may fulfill the training requirement.

MM BIO-9 – Tree Removal Documentation and Replacement

The following measures shall be implemented to compensate for the removal of trees and to avoid or minimize the potential for Project-related impacts on tree resources.

- Final plans will identify the number, size, and species of trees to be removed and include a planting plan, to ensure replacement of trees in a manner consistent with County and Resource Agencies policies. If replanting cannot completely compensate for the number of trees removed within the Project site or on County managed land, purchase of compensatory mitigation credits will be required for the remainder of trees. The replanting plan must be approved by the County and any compensatory mitigation credits for tree resources must be purchased prior to vegetation clearing activities.
- A plan for avoidance and minimization of trees that are in the area of direct impact, but not removed, shall be developed by an International Society of Arboriculture (ISA) Arborist and implemented by the County prior to vegetation clearing activities and throughout the construction of the Project.

MM BIO-10 - Control Nighttime Lighting

Implements Yolo HCP/NCCP AMM7: (Control Nighttime Lighting of Project Construction Sites)

- Workers will direct all lights for nighttime lighting of Project construction sites into the Project construction area and minimize the lighting of natural habitat areas adjacent to the Project construction area.

5.5 **Cultural Resources**

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

Environmental Setting

Record Search

An Archeological Survey Report (ASR) and a Historical Property Survey Report (HPSR) (Gallaway Enterprises 2021a) were prepared for the Project (Appendix E).

Gallaway Enterprises conducted a cultural resources study of the Project area. Gallaway Enterprises requested a records search from the Northwest Information Center (NWIC) of the California Historical Resources Information System on November 20, 2020. The search included all previously recorded cultural resources and reports within a half mile radius of the APE. The record search was conducted to determine if any portion of the Project had been previously surveyed and if any cultural resources have been previously recorded within the Project APE. Additional archival research included the California Register of Historic Resources, the National Register of Historic Places, historic topographic maps, historical documentation, and BLM GLO records.

Results of the record search indicate no previous cultural resource assessments occur within a half mile of the APE or within the APE.

Archival Research

In addition to the record search, various historical maps, topographic quadrangles, land grants, and patents, Gallaway Enterprises reviewed the following resources:

- National Register of Historic Places (NRHP)
- California Register of Historic Resources (CRHR)
- General Land Office Plat maps and land patents
- Historic United States Geological Survey (USGS) topographic maps
- Yolo Historical Society
- Hattie Weber Museum
- Yolo County Library

Archival research indicates the bridge was previously assessed as part of the Caltrans statewide historic bridge inventory program. As a result of the Caltrans historic bridge inventory program, the bridge at CR 96 over Union School Slough Bridge # 22C0126, was determined not eligible for the National Register as a category 5 bridge. No properties listed within the NRHP and CRHR fall within the Project boundary.

Native American Consultation

Gallaway Enterprises contacted the Native American Heritage Commission (NAHC) to request sacred lands file search and contact list. On October 27, 2020, the NAHC returned a negative result for sacred lands within the Project APE. Additionally, the NAHC listed three Native American tribes who may have knowledge of sites or traditionally cultural properties that may be affected by Project-related activities. All tribes listed were contacted via email in a letter dated October 30, 2020, informing them of the proposed Project and to request participation of interested parties.

One response was received by the Yocha Dehe Wintun Nation on November 23, 2020. The Project boundary lies within the aboriginal territories of the Yocha Dehe Wintun Nation who claimed authority over the proposed Project area. The Tribe is not aware of any known cultural resources near the Project APE and a cultural monitor is not needed. Should cultural material or new information be discovered during the course of the Project, the Tribe requests notification. Additionally, the Tribe recommended cultural sensitivity training prior to construction related activities. Sensitivity training is addressed in the Tribal Cultural Resources section as MM TCR-1 (Sensitivity Training).

Pedestrian Survey

Gallaway Enterprises conducted a pedestrian survey of the Project area on December 10, 2020. Due to the narrow Project boundary, the pedestrian survey was completed in 5 meter transects and consisted of walking the entire APE. The APE has been heavily modified and disturbed by construction and agricultural activities and is comprised of unpaved road and agricultural land. Ongoing disturbance and agricultural activities within the APE greatly reduce the likelihood of intact cultural deposits. No cultural resources or archaeological sites were identified as a result of the pedestrian survey.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Research and evaluation of historical resources were conducted as part of the ASR and HPSR documents. The research and findings contained within the aforementioned documents concluded that no resources required evaluation. Archival research indicates the bridge was previously assessed as part of the Caltrans statewide historic bridge inventory program. As a result of the Caltrans historic bridge inventory program, the bridge at CR 96 over Union School Slough Bridge # 22C0126, was determined not eligible for the National Register as a category 5 bridge. No properties listed within the NRHP and CRHR fall within the Project boundary. California Public Resources Code Section 5097.5 ensures protection of cultural resources in the event of inadvertent discovery. Impacts will remain less than significant.

b) ***Less Than Significant Impact.*** Research and evaluation of archaeological resources were conducted as part of the ASR document. The research and findings contained within the aforementioned document concluded that no resources required evaluation. Due to the developed character of the site, the potential to encounter surface-level archaeological resources is considered low. However, there is the potential for accidental discovery of archaeological resources. In the event that resources are inadvertently discovered, California Public Resources Code Sections 5097.5 prohibits further

excavation, removal, or destruction of any historic or prehistoric ruins, burial grounds, archaeological or historical feature and requires the County to follow the professional standards for determining commercial and archaeological value, in accordance with those procedures established in the federal Archaeological Resources Protection Act of 1979 (Public Law 96-95), as amended, and in compliance with the Uniform Regulations set forth in Subpart A (commencing with Section 7.1) of Part 7 of Title 43 of the Code of Federal Regulations. Adherence to California Public Resources Code Sections 5097.5 and incorporation of recommendations provided by Tribal consultation will ensure that archaeological and cultural resources will remain protected in the event of inadvertent discoveries. Impacts are expected to be less than significant.

c) ***Less Than Significant Impact.*** The ASR and HPSR documents show that that no known cemeteries or burials occur within the Project area of direct impact. In the event of discovery or recognition of any human remains within the Project site, California Health and Safety Code Section 7050.5 requires excavation to cease in the vicinity of the discovery until the coroner of the County has determined that the remains are not subject to the provisions of Section 27491 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code. If the coroner determines that the remains are not subject to his or her authority and if the coroner recognizes the human remains to be those of a Native American, or has reason to believe that they are those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission. California Health and Safety Code Section 7050.5 and Section 5097.98 of the Public Resources Code will ensure human remains will be protected from any inadvertent discoveries. Impacts are expected to be less than significant.

Mitigation Measures: None Required

5.6 **Energy**

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

Potential Environmental Effects

a) ***Less Than Significant Impact.*** All construction equipment would be regulated per the California Air Resources Board (CARB) In-Use Off-Road Diesel Vehicle Regulation. CARB standards for construction equipment includes measures to reduce emissions from vehicles by subjecting fleet owners to retrofit or accelerated replacement/repower requirements and imposing idling limitations on owners, operators, renters, or lessees of off-road diesel vehicles, thereby having a secondary benefit of reducing energy consumption during construction activities.

Project construction would also be required to comply with all applicable YSAQMD rules and regulations. Future maintenance activities (e.g., vegetation control) would likely involve the use of electric or gas-powered equipment.

The Project would be required to comply with all applicable standards and regulations regarding energy conservation and fuel efficiency, which would ensure that the future activities would be energy efficient to the maximum extent practicable. The Project would not be considered to result in a wasteful, inefficient, or unnecessary use of energy, and impacts related to construction and operational energy would be considered less than significant.

b) ***Less Than Significant Impact.*** Yolo County has taken steps to reduce overall emissions in the County in an effort to reduce GHG emissions and address economic and social adaptation to the effects of climate change. The County's General Plan policies and their Climate Action Plan (CAP) address these issues. In order to demonstrate Project-level compliance with CEQA relevant to GHG emissions and climate change impacts, applications for discretionary projects must demonstrate consistency with the General Plan and CAP. Implementation of the proposed Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential construction related GHG impacts. These impacts are considered less than significant.

Mitigation Measures: None required.

5.7 **Geology and Soils**

Would the Project:	*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? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative 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?	☐	☐	☒	☐

Environmental Setting

The Project area is located on the floor of the Central Valley, where the topography is relatively flat and level and there are no nearby active faults.

According to the 2030 Countywide General Plan, the only fault in Yolo County that has been identified by the California Division of Mines and Geology (1997) to be subject to surface rupture (within an Alquist-Priolo Earthquake Fault Zone) is the Hunting Creek Fault, which is partly located in a sparsely inhabited area of the extreme northwest corner of the County. Most of the fault extends through Lake and Napa Counties. The other potentially active faults in the County are the Dunnigan Hills Fault, which extends west of I-5 between Dunnigan and northwest of Yolo, and the more recently identified West Valley and East Valley Faults (Fault Activity Map of California, California Geological Survey, 2010), which are also not in the vicinity of the proposed Project. These faults are not within an Alquist-Priolo Earthquake Fault Zone and are therefore not subject to surface rupture. The geologic conditions of the Project site were assessed in an Initial Site

Assessment (ISA), developed by Crawford & Associates, Inc 2021, and present the results of subsurface exploration and testing by way of exploratory borings drilled in the immediate vicinity of the proposed bridge.

Potential Environmental Effects

a) ***a-i) Less Than Significant Impact.*** The site does not lie within an Alquist-Priolo Earthquake Fault Zone and no known active faults are mapped within or through the Project area. The Hunting Creek Fault is the only fault in the County that has been identified by the CGS to be active and subject to surface rupture (i.e., is delineated as an Alquist-Priolo Earthquake Fault zone) (Yolo County 2009b). Based on the observed geological conditions of the Project (lack of faulting, springs, or seeps) and the distance to the known active fault location, impacts are considered less than significant.

a-ii) Less Than Significant Impact. Earthquake shaking hazards are calculated by projecting earthquake rates based on earthquake history and fault slip rates. The same data is used for calculating earthquake probabilities (California Department of Conservation 2020). Calculations of earthquake shaking hazard for California are part of a cooperative project between USGS and California Geologic Survey (CGS) and are part of the National Seismic Hazard Maps. Yolo County General Plan DEIR Figure IV.L-4 (Regional Ground Shaking Hazard) shows potential seismic shaking based on National Seismic Hazard Map calculations plus amplification of seismic shaking due to the near surface soils. Per Figure IV.L-4 the Project is located in a region where shaking hazards that are '*distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here.*' The ISA (Crawford & Associates, Inc. 2021) concluded no evidence of faulting, springs or seeps were observed within or immediately adjacent to the Project site during reconnaissance. Additionally, the Project site is not mapped within a regulatory Zone of Required Investigation with respect to known or suspected earthquake-triggered ground failures, including the Alquist-Priolo Earthquake Fault Zone. Impacts are considered less than significant.

a-iii) Less Than Significant Impact. The proposed Project involves the replacement of an existing bridge which will bring the structure up to current design and safety standards. The proposed Project will not directly or indirectly cause potential adverse effects including the risk of loss, injury or death involving seismic-related ground failure, including liquefaction. Impacts are considered less than significant.

a-iv) Less Than Significant Impact. The Project is located on relatively flat ground. No over-riding geologic hazards, including landslides, were identified by either published geologic mapping or observations made at the site. Impacts are considered less than significant.

b) ***Less Than Significant Impact.*** Construction of the proposed Project could introduce sediments and other contaminants typically associated with construction into stormwater runoff. Overall soil erosion and loss would be minimal with implementation of standard construction practices for dust control, erosion, and stormwater pollution prevention. Erosion and sediment control measures include the required Caltrans Standard Specifications (§13 Water Pollution Control and §21 Erosion Control) and a stormwater pollution prevention plan (SWPPP) will be implemented during construction to minimize the potential for erosion. Post-project, the potential for erosion to occur in the Project area would be like current conditions; therefore, the Project would result in less than significant impacts relating to soil erosion and loss of topsoil.

c) ***Less Than Significant Impact.*** The Project does not include activities that would result in soil units onsite becoming unstable and will not potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Impacts are considered less than significant.

d) ***Less Than Significant Impact.*** Expansive soils that may swell enough to cause problems with paved surfaces are generally clays falling into the AASHTO A-6 or A-7 groups, or classified as CH, MH, or OH by the Unified Soil Classification System (USCS), and with a Plasticity Index greater than about 25 as determined by ASTM D4318. Chapter 610 of the Caltrans Highway Design Manual (Seventh Edition) defines an expansive subgrade to include soils with a Plasticity Index greater than 12 (Caltrans 2020-2022).

The Project is being designed in accordance with the special engineering or construction considerations outlined in Chapter 610 *"Pavement Engineering Considerations"* of the Highway Design Manual, California Transportation Department. Because the Project is being designed in accordance with the Caltrans Highway Design Manual and will consider and address expansive soils, impacts are considered less than significant.

e) ***No Impact.*** The proposed Project does not include the use of septic tanks or alternative wastewater disposal systems. No impact will occur.

f) ***Less Than Significant*****:** Paleontological resources are known to occur in Yolo County, and the geological formations that underlie Yolo County are generally paleontologically sensitive. The Project would not likely impact paleontological features due to the general disturbed conditions at the site. There is the possibility of accidental paleontological discoveries during construction-related ground-disturbing activities. Caltrans Standard Specification (§14-7.03 Discovery of Unanticipated Paleontological Resources) requires that if unanticipated paleontological resources are discovered then work shall halt within 60 feet of the discovery and the engineer shall be notified. Caltrans Standard Specifications will ensure that paleontological resources will protect any inadvertent discoveries. Impacts are expected to be less than significant.

Mitigation Measures: None required.

5.8 **Greenhouse Gas Emissions**

Would the Project:	*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?	☐	☐	☒	☐

Environmental Setting

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The major GHGs that are released from human activity include carbon dioxide, methane, and nitrous oxide. The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (such as dairies and hog farms).

Greenhouse gas emissions for transportation projects can be divided into those produced during operations and those produced during construction. The proposed Project does not increase the capacity of CR 96 and would not increase operational GHG levels. The discussion below therefore focuses on construction related GHG emissions of the Project.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Off-site production of construction materials and onsite construction of the proposed Project would generate short-term emissions of greenhouse gases. Emissions of GHGs resulting from off-road heavy-duty diesel engines during construction activities would be short-term and minor. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential air quality impacts. These impacts are considered less than significant.

b) ***Less Than Significant Impact.*** Yolo County has taken steps to reduce overall emissions in the County to reduce GHG emissions and address economic and social adaptation to the effects of climate change. The County's General Plan policies and their Climate Action Plan (CAP) address these issues. In order to demonstrate Project-level compliance with CEQA relevant to GHG emissions and climate change impacts, applications for discretionary projects must demonstrate consistency with the General Plan and CAP. In addition, the County established a working group to implement the County's Climate Change Initiative, aimed at reducing transportation emissions by encouraging the use of electric vehicles, reducing County vehicle trips, and purchasing low-polluting construction equipment. Implementation of the proposed Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. Adherence to the YSAQMD rules (Rules 2.3, 2.5, 2.11, 2.28, 2.32, and 9.8 as applicable) will limit potential construction related GHG impacts. These impacts are considered less than significant.

Mitigation Measures: None required.

5.9 **Hazards and Hazardous Materials**

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

Environmental Setting

An Initial Site Assessment (ISA) was prepared for the proposed Project by Crawford & Associates, Inc. in May of 2021 (Appendix H). The purpose of the ISA is to identify recognized soil or groundwater contamination and hazardous material issues that may affect the planned project improvements. The ISA identifies Recognized Environmental Conditions (RECs) and general hazardous materials issues that may be present at the site, and provides recommendations for further investigation, as warranted. Based on the records search and site reconnaissance, Crawford & Associates, Inc. made the following observations and recommendations.

Observations:

- Hazardous concentrations of lead in flaking and peeling paint on the bridge.
- Potential for agricultural chemicals in the soils.
- Chemically treated wood present in two (2) utility poles identified for potential removal.
- Two (2) pole mounted transformers on a utility pole proposed for removal.
- The project site was not identified in the database records reviewed.

- The database records, aerial photographs, and historical topographic maps search did not identify any RECs or historical RECs that have potentially impacted the project site.
- Reconnaissance did not identify any other suspect sites in the project site vicinity.

Recommendations:

- Soil samples should be collected and analyzed prior to construction to evaluate residual concentrations of agricultural chemicals.
- Prior to demolition, the concrete culvert located ±750 ft south of the bridge, where the proposed bridge would be constructed, should be tested for asbestos. Alternatively, assume the culvert contains asbestos, handle accordingly, and properly dispose of the material.
- Lead-based paint was identified on the existing bridge. A lead compliance plan that protects workers and the environment from lead exposure will need to be prepared prior to implementation of demolition and construction activities within the project site. Painted bridge components will need to be removed, transported, and recycled or disposed of in a manner consistent with the lead compliance plan and applicable State and Federal law.

A hazardous material is defined by the California EPA, Department of Toxic Substances Control (DTSC), as a material that poses a significant present or potential hazard to human health and safety or the environment if released because of its quantity, concentration, or physical or chemical characteristics (26 California Code of Regulations (CCR) 25501).

According to Title 22 of the CCR (22 CCR) Section 66261.20, the term "hazardous substance" refers to both hazardous materials and hazardous wastes; both are classified according to four properties: toxicity, ignitability, corrosiveness, and reactivity.

A hazardous material is defined by 22 CCR Section 66261.10 as a substance or combination of substances that may cause or significantly contribute to an increase in serious, irreversible, or incapacitating illness or may pose a substantial presence or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

While public health and safety is potentially at risk whenever hazardous materials are or will be used, the risk is determined by the probability of exposure and the inherent toxicity of a material. Factors that can influence health effects when human beings are exposed to hazardous materials include the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (22 CCR Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific 22 CCR criteria.

Hazardous materials transport within California is subject to various federal, state, and local regulations including the California Vehicle Code and California and Occupational Health and Safety Administration (CalOSHA) requirements. The California Highway Patrol (CHP) designates routes to be used for the transportation of hazardous materials. Transportation of hazardous materials is generally restricted to these routes.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** Small amounts of hazardous materials would be used during construction and operation activities (i.e., equipment maintenance, fuel, and solvents). Implementation of the proposed Project would continue the use, transport, and disposal of potentially hazardous materials on and in the vicinity of the Project site, similar to existing conditions. The Project is required to comply with federal, state, and local regulations regarding the storage, handling, transportation, disposal, and cleanup of hazardous materials. Use of hazardous materials in accordance with applicable standards ensures that any exposure of the public to hazard materials would have a less than significant impact.

b) ***Less Than Significant with Mitigation Incorporated.*** The potential hazards and observations identified in the ISA, as mentioned above, will be addressed with the following mitigation measures. The potential for hazardous materials associated with the utility poles and transformers will be the responsibility of the utility owner and will be removed and re-located prior to Project commencement, and are therefore not part of the project. Integration of MM HAZ-3 (Asbestos) addresses compliance with the federal asbestos National Emissions Standards for Hazardous Air Pollutants regulations (NESHAP, 40 CFR Part 61, Subpart M), YSAQMD, and provides appropriate mitigation measures. A lead compliance plan, MM HAZ-1 (Lead Compliance Plan) that protects workers and the environment from lead exposure will need to be prepared prior to implementation of demolition and construction activities. Painted bridge components will need to be removed, transported, and recycled or disposed of in a manner consistent with the lead compliance plan and applicable state and federal law. MM HAZ-2 (Soils Testing) requires the preparation of a Limited Soils Assessment, prior to construction, thereby ensuring excavated soils generated during construction do not contain hazardous chemicals. Project construction and operation would not routinely generate any hazardous materials. Project operation would not involve the use or storage of any hazardous materials. Although construction would not generate any hazardous materials, a potential hazard to the public and the environment would be posed by using diesel or gasoline powered construction equipment (trucks, excavators, etc.) and lubricants such as oil and hydraulic fluids. The potential for such a hazard would be temporary and avoidable through the implementation of AMM3 (Confine and Delineate Work Area) and AMM8 (Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas), as required by the Yolo HCP/NCCP. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements. Adherence to the applicable federal, state, and local laws and the application of AMMs from the Yolo HCP/NCCP and implementation of MM HAZ-1 (Lead Compliance Plan), MM HAZ-2 (Soils Testing), and MM HAZ-3 (Asbestos) would reduce the potential impacts at a less than significant level through materials testing and developing protocols to handle potentially hazardous waste.

c) ***No Impact.*** No schools occur within 0.25 mile of the Project site.

d) ***No Impact.*** The Project area is not included on the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

e) ***Less Than Significant Impact.*** The Yolo County Airport, which is operated as a general aviation airport and is open to the public, is located approximately 1.5 miles southwest of the Project site. The Yolo County Airport Comprehensive Land Use Plan addresses public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive levels of noise as well as to prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utility of these airports into the future. The runways at the Yolo County Airport are oriented in a north-south direction. The arrangement of the runways is parallel to the direction of CR 96 and therefore it is not expected that airplane approaches and departures would be at low elevations over the Project site. The Project site is not within the 65 CNEL noise contour of the airport. Due to these conditions, it is not expected that the Project will result in a safety hazard or excessive noise for people working in the Project site during construction activities. The proposed Project does not conflict with the Yolo County Airport Comprehensive Land Use Plan. There will be a less than significant impact.

f) ***Less Than Significant Impact.*** During construction, CR 96 will be closed to through traffic and a detour route made available. Vehicular traffic will be able to utilize CR 95, 98, 27, and 29 as alternative routes. Construction is anticipated to begin in Spring 2024 and have a duration of approximately 8 months. Although temporary, short disruptions to normal traffic operations would occur during construction, the impact would be less than significant. The Project is not anticipated to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

g) ***No Impact.*** The completed Project will not expose people or structures to a new or increased significant risk of loss, injury or death involving wildland fires.

Mitigation Measures:

MM HAZ-1 Lead Compliance Plan

A lead compliance plan that protects workers and the environment from lead exposure must be prepared prior to implementation of demolition and construction activities. Painted bridge components will need to be removed, transported, and recycled or disposed of in a manner consistent with the lead compliance plan and applicable state and federal law. The plan must address the Caltrans 2022 Standard Specifications §7-1.02K(6)(j)(ii) Lead Compliance Plan, and §7-1.02K(6)(j)(iii) Unregulated Earth Material Containing Lead, and a Health & Safety Plan for workers in accordance with Cal OSHA Title 8, Section 1532.1. Additional sampling and analysis of the paint may be required to insure proper disposal of the painted components.

MM HAZ-2 Soils Testing

A Limited Soils Assessment (LSA) shall be prepared and conducted at the southwest portion of the Project site and northeast of the bridge for the purpose of assessing on-site shallow soil for potential impacts from the following constituents of concern prior to implementation of demolition and construction activities.

- organochlorine pesticides (EPA Method 8081)
- chlorinated herbicides (EPA Method 8151)
- organophosphorus pesticides (EPA Method 8141)

The LSA shall also determine if excavated soils generated during construction activities are likely to be classified as a regulated waste. Should any of the constituents of concern be found in excess concentrations, the applicant shall prepare a Soil Management Plan (SMP) or equivalent report, which shall be distributed to construction personnel. The SMP shall establish protocols for handling, sampling, storage, and disposal of any suspected burn ash-impacted soils generated during construction activities.

MM HAZ-3 Asbestos

Prior to demolition, a Certified Asbestos Consultant (CAC) shall assess the presence of asbestos in the existing culvert, located approximately ±750 ft south of the bridge. The culvert is assumed to contain asbestos, and if found contaminated, shall be disposed of according to the CAC's recommendations. The CAC assessment should be submitted to the YSAQMD and shall be included in the written notification of demolition of structures or renovation operations at least 10 business days prior to commencing work, regardless of the presence or absence of asbestos in building materials.

5.10 **Hydrology and Water Quality**

Would the Project:	*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	☐	☐	☒	☐
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?	☐	☐	☐	☒

Environmental Setting

A Floodplain Evaluation Report for the proposed Project was developed by WRECO (Appendix F). The following overview is derived from the document:

The Project is located within the Sacramento Valley Groundwater Basin Yolo Subbasin. Based on California's Groundwater Bulletin 118 (DWR, 2016), the Yolo Subbasin is located on the southern portion of the Sacramento Valley Basin primarily within Yolo County. It is bounded on the east by the Sacramento River, on the west by the Coast Range, on the north by Cache Creek, and on the south by Putah Creek.

Construction activities associated with the proposed Project have the potential to disturb soils. Disturbed soils can result in sediment laden flows and increase the potential for erosion. Generally, as disturbed soils increase, the potential for temporary water quality impacts also increases. Routinely used temporary BMPs are included to protect water quality. These include preservation of existing vegetation, temporary cover for soil stabilization, temporary fiber rolls, silt fence for sediment control, potential creek diversion, dewatering, and temporary construction entrances and exits. Long-term impacts from the Project could result from fill placed in environmentally sensitive areas, potential increases to the velocity and volume of downstream flows due

to added impervious areas, and sediment transported from erosion. Stormwater runoff from the study area can potentially carry pollutants into naturally flowing streams, as well as into adjacent jurisdictional biotic/aquatic areas.

The Project is located within a Special Flood Hazard Area (SFHA) Zone AE, which is designated for areas within the 100-year floodplain and where Base flood elevations (BFE) are shown. The existing approach roadways of CR 96 within the Project are also located within the Zone AE floodplains. The BFE upstream of the roadway is 81 ft and the BFE downstream of the roadway is 79 ft.

The selected 100-year peak design flow for Union School Slough was obtained from the Flood Insurance Study (FIS). The 100-year flow is 2,278 cubic feet per second (cfs).

The hydraulic assessment was performed using the United States Army Corps of Engineers' (USACE) Hydrologic Engineering Center's River Analysis System (HEC-RAS) modeling software. The hydraulic analysis indicates that the proposed bridge replacement would result in no increases in water surface elevation (WSE) for the 100-year storms in the vicinity of the bridge.

Potential Environmental Effects

a) ***Less Than Sign***ifi***cant with Mitigation Incorporated.*** Project activities have the potential to introduce sediments and other contaminants, typically associated with construction, into stormwater runoff. Stormwater flowing over the Project features during construction could carry various pollutants downstream such as sediment, nutrients, soil-borne pathogens, oil and grease, heavy metals, organics, pesticides, and miscellaneous waste. These pollutants could originate from soil disturbances, construction equipment, building materials, and workers. Erosion potential and water quality impacts are always present during construction and occur when protective vegetative cover is removed, and soils are disturbed. The proposed Project's particular risk of erosion will be incurred by vegetation removal from the banks of Union School Slough, the installation of a temporary crossing, and soil disturbance associated with the bridge replacement.

Under existing State regulations, the Project proponent is required to obtain a water quality certification or waiver from the Central Valley RWQCB. Through the RWQCB permitting process addressed in MM BIO-6, the Project will be required to avoid, minimize, and/or compensate for potential discharges into regulated waterways based on a detailed review of the bridge construction techniques. Existing State permitting requirements by the RWQCB will ensure that the Project will not result in the violation of any water quality standards or waste discharge requirements. Due to the scope and nature of the proposed Project it is not expected that the Project would degrade ground water quality. Construction has the potential to temporarily impact water quality and fill State and federally protected wetlands.

Potential impacts to state and federally regulated aquatic features will be reduced to a less than significant level by the implementation of avoidance and minimization measures outlined in MM BIO-6, payment of Yolo HCP/NCCP fees, acquisition of applicable permits and fulfillment of any compensatory mitigation requirements. With the standard permitting and water quality requirements in place, potential impacts to water quality from the Project are considered to be less than significant with mitigation.

b) ***No Impact.*** Construction and operation of the Project would have no effect on groundwater supplies. There would be no net change in local aquifers or the local groundwater table because of the Project.

c) ***i Less Than Significant Impact.*** The proposed Project's grading and excavation are not anticipated to result in substantial erosion or siltation, on or off-site. Compliance with the various requirements of the SWRCB statewide general permit for construction (which include water pollution control, erosion control and the development of a SWPPP) will ensure that erosion or siltation on- or off-site during the construction phase of the proposed Project would remain less than significant.

ii Less Than Significant Impact. The proposed Project includes minor widening of the paved section of CR 96 to improve roadway infrastructure which will result in an increase in impervious surfaces. These increases in impervious surfaces are not a substantial increase when compared to existing conditions. The recontouring and re-establishment of roadway drainage facilities are designed to accommodate the predicted runoff from the proposed Project. The Project will not contribute to a substantial increase in water runoff from the site. Project impacts are less than significant.

iii Less Than Significant Impact. As mentioned above, the proposed Project would include minor increases in runoff water, however the runoff water would not exceed the capacity of existing or planned stormwater drainage systems. The proposed Project includes the replacement of an existing bridge and minor widening of an existing road to include improved roadway conditions and will not introduce a substantial additional source of polluted runoff, since the existing use is similar to the proposed use of the Project site. Project impacts are less than significant.

Iv Less Than Significant Impact. The proposed Project has been designed to avoid obstructions or redirection of flood flows. The proposed project design has been analyzed (see Floodplain Evaluation Report Appendix F) to ensure there are less than significant impacts as they pertain to hydraulic conditions, impediments, potential flooding, and stormwater issues. The Federal Emergency Management Agency (FEMA) has a "no increase" requirement in relation to inundation, floodplain limits and water surface elevations as a result of the Project. Through the standard process of design, peer review and meeting the requirements of FEMA, there will be a less than significant impact with respect to impeding flood flows.

d) ***Less Than Significant Impact.*** The Project is within FEMA/FIRM panel 06113C0580G and is located in SFHA Zone AE, which represents areas subject to flooding by the 100-year flood event determined by detailed methods where BFEs are shown. The completed Project would not include components that risk release of pollutants due to inundation and the Project is not located within a tsunami or seiche zones, and impacts would be considered less than significant.

e) ***No Impact.*** The proposed Project is the replacement of an existing bridge and does not include activities that would conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Mitigation Measures: Mitigation Measure BIO-6 (Biological Resources)

5.11 **Land Use and Planning**

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

Environmental Setting

The 2009 Yolo County General Plan is the relevant land use plan for the Project area.

Potential Environmental Effects

a) ***No Impact.*** The Project does not include activities that would result in physically dividing an established community.

b) ***No Impact.*** The proposed Project is consistent with the County General Plan.

Mitigation Measures: None required.

5.12 **Mineral Resources**

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

Environmental Setting

Per the County General Plan, Yolo County contains important mineral resources. A variety of minerals are mined in the County. The predominate resources presently extracted in Yolo County are aggregate and natural gas (Yolo County 2009b). The Project is located outside the Cache Creek Area Plan (CCAP) project area, a rivershed management plan that includes approximately 14.5 miles of lower Cache Creek, between the Capay Dam and the town of Yolo. Components of the CCAP establish goals to assist in the overall management and include the Off-Channel Mining Plan (OCMP).

Potential Environmental Effects

a) ***No Impact.*** The Project area is not in an important mineral resource zone or site, as depicted in the County's General Plan DEIR Figure IV.L-2 (Yolo County 2009b). The Project would have no impact on mineral resources.

b) ***No Impact.*** No locally important mineral resource recovery sites are located within the Project area.

Mitigation Measures: None required.

5.13 **Noise**

Would the Project:	*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 Project area to excessive noise levels?	☐	☐	☒	☐

Environmental Setting

The 2009 Yolo County General Plan (GP), Chapter 8-Health and Safety Element, Section D (Noise) establishes policies and standards associated with noise producing sources.

Yolo County GP Action HS-A61 states:

"Adopt a comprehensive Noise Ordinance that includes the following components:

- Standards for acceptable exterior and interior noise levels, their applicability, and any specific exceptions to those standards.
- Guidelines and technical requirements for noise measurements and acoustical studies to determine conformance with provisions of the ordinance.
- Standards for construction equipment and noise-emitting construction activities.
- Regulations for the noise generated by events, including truck loading and unloading, operation of construction equipment, and amplified music."

To date, a county noise ordinance addressing construction noise has not been adopted; however, the County relies on the State Office of Noise Control Guidelines when considering new outdoor noise sources.

A Construction Noise Technical Memorandum was developed for the proposed Project by Mark Thomas (Appendix G). The report identifies potential construction-related sources of noise and provides methods to ensure the Project will not result in excessive construction-period noise effects.

No new stationary sources of noise will be established as part of the proposed Project; therefore, the following discussion is focused on potential construction related noise impacts. Section 14-8.02 (Noise and Vibration) of the Caltrans Standard Specifications includes requirements for the control and monitoring of noise resulting from construction activities. The Caltrans Standard Specifications require construction noise to not exceed 86 dBa at 50 feet from the job site from 9:00p.m. to 6:00 a.m.

Potential Environmental Effects

a) ***Less Than Significant with Mitigation Incorporated.*** Construction activities would temporarily increase noise levels in the vicinity of the Project area during the standard construction times of 6:00a.m. to 9:00p.m. Noise levels are expected to vary throughout the day depending on the type of construction equipment involved, activities being implemented, and distance between the source of the noise and receptors. The contractor would comply with noise standards outlined in Caltrans Standard Specifications, and applicable construction equipment will be equipped with appropriate mufflers pursuant to the Standard Specifications and the YSAQMD rules. Long-term noise associated with use of CR 96 would be similar to current conditions. The closest residential property resides approximately 0.15 mile south of the Project area and is zoned Agricultural Intensive. Additionally, Yolo County General Plan does not consider residences on agriculturally zoned land to be sensitive receptors.

To avoid substantial construction-period noise impacts to nearby receptors, MM NOI-1 (Control of Construction Noise) will be implemented during Project construction. With implementation of MM NOI-1, the County will ensure that applicable minimization measures to reduce construction related noise and potential impacts to noise receptors will be implemented. Noise impacts introduced by Project activities are expected to be maintained at less than significant levels.

b) ***Less Than Significant Impact.*** Project construction includes activities such as operation of large pieces of equipment (e.g., heavy trucks), which may result in the periodic temporary generation of ground-borne vibration. The Project does not introduce new sources of ground-borne vibration. Given the nature of any potential ground-borne vibration and given that any impacts would be temporary and periodic, potential impacts are less than significant.

c) ***Less Than Significant Impact.*** The Yolo County Airport, which is operated as a general aviation airport and is open to the public, is located approximately 1.6 miles southwest of the Project site. The Yolo County Airport Comprehensive Land Use Plan addresses public health, safety, and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive levels of noise as well as to prevent the encroachment of incompatible land uses around public-use airports, thereby preserving the utility of these airports into the future. The runways at the Yolo County Airport are oriented in a north-south direction. The arrangement of the runways is parallel to the direction of CR 96 and therefore it is not expected that airplane approaches and departures would be at low elevations over the Project site. The Project site is not within the 65 CNEL noise contour of the airport. Due to these conditions, it is not expected that the Project will result in a safety hazard or excessive noise for people working in the Project site during construction activities.

Mitigation Measures:

MM NOI-1 – Control of Construction Noise

To avoid substantial construction-period noise impacts to nearby sensitive receptors, the Best Management Practices listed below will be implemented during Project construction. With implementation of these

standard construction period specifications, the Project will not result in excessive construction-period noise effects.

1. Project-related noise-generating activities at, or adjacent to, the construction site shall comply with the Caltrans Standard Specifications section 14-8.02. “Control and monitor noise resulting from work activities. Do not exceed 86 dBA at 50 feet from the job site from 9:00 p.m. to 6:00 a.m.”
2. All internal combustion engine driven equipment shall be equipped with the appropriate intake and exhaust mufflers, which are in good condition.
3. “Unnecessary” idling of internal combustion engines shall be strictly prohibited.
4. Avoid staging construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment as far as practical from existing noise receptors. Construct temporary barriers to screen noise generating equipment when located in areas adjoining noise-sensitive land uses.
5. “Quiet” air compressors and other stationary noise sources shall be used when applicable.
6. All construction traffic shall be routed to and from the Project site via designated truck routes. Construction-related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the Project vicinity during non-allowed hours.
7. The businesses and residents in the Project area shall be notified in writing by the County of the construction schedule.
8. The County shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint and implement reasonable measures to correct the problem. The contractor shall visibly post the telephone number for the disturbance coordinator at the construction site. The County shall include the telephone number in the notice sent to residents regarding the construction schedule.

5.14 **Population and Housing**

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

Environmental Setting

The Project is in a rural area of the County that is primarily used for agricultural and farming practices.

Potential Environmental Effects

a) ***No Impact.*** The Project does not include activities that would result in substantial unplanned population growth either directly or indirectly.

b) ***No Impact.*** The Project does not include any activities that would result in the displacement of housing or people.

Mitigation Measures: None required.

5.15 **Public Services**

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

Environmental Setting

Project construction activities would be coordinated with local law enforcement and emergency services providers as applicable. The bridge and associated roadway will be closed to through traffic and a detour route made available.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** During construction, CR 96 will be closed to through traffic and a detour route made available. Vehicular traffic will be able to utilize CR 95, 98, 27, and 29 as alternative routes. Construction is anticipated to begin in Spring 2024 and have a duration of approximately eight months. The Project is not anticipated to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. The proposed detour around the Project site would add approximately 9 minutes by automobile (6 miles). Although temporary, short duration disruptions to normal traffic operations would occur during construction, the impact would be less than significant. No adverse effects on service ratios, response times, or service objectives for any of the public services are anticipated. The Project would have a less than significant impact on fire and police protection response times during construction activities. Once the project is completed there would be no impact on fire and police protection services. There will be no impacts on schools, parks, or other public facilities.

Mitigation Measures: None required.

5.16 **Recreation**

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

Environmental Setting

The Project is in a rural area of the County that is primarily used for agricultural and farming practices. There are no parks in the vicinity of the Project site. However, there are few recreational facilities near the Project site including the Yolo County Airport which supports the activity of skydiving, and the Yolo Sportsman's Association which offers facilities for several types of sport shooting. These facilities will not be adversely affected.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** There are no recreational facilities that would be affected by the proposed Project. The construction of the bridge would not affect the recreational uses at the Yolo County Airport or the Yolo Sportsman's Association. No parks are in the vicinity of the Project site; therefore, impacts are less than significant.

b) ***No Impact***. The Project would not require the construction or expansion of recreational facilities.

Mitigation Measures: None required.

5.17 **Transportation**

Would the Project:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒
b) Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Result in inadequate parking capacity?	☐	☐	☐	☒

Potential Environmental Effects

a) ***No Impact.*** The proposed Project does not include activities that would cause a permanent negative impact to the circulation system (roads), including transit, roadway, bicycle, and pedestrian facilities. The proposed Project is identified in the SACOG Metropolitan Transportation Plan / Sustainable Communities Strategy (MTP/SCS). The bridge replacement will occur approximately 750 ft south of the existing bridge and will be designed to provide for public safety.

Once constructed, the Project would not result in an increase in traffic in the area and will not conflict with the Yolo County General Plan, MTP/SCS, or any ordinance, policy, or congestion management program. The Project will have no impact on traffic circulation plans or policies.

b) ***Less Than Significant Impact.*** The Project would not have an impact on vehicle miles traveled. During the 8-month construction period, worker commute and equipment hauling vehicles would be traveling to and from the Project site causing a minor, temporary increase in localized traffic; however, this would cease once construction is complete. There may be a minor increase in regional commuting times during construction activities, which is estimated to be 9 minutes longer than normal when using alternative routes; however, upon completion of the Project, regional commuting times will return to pre-project conditions. Once completed, the Project would not result in any changes to vehicle miles travelled. The impact associated with temporary increases in Project-related traffic would be less than significant.

c) ***No Impact.*** The Project replaces the existing bridge to improve public safety. The Project does not include features that introduce or exacerbate any transportation or traffic hazards due to a design feature. The proposed bridge replacement has been designed to accommodate automobiles, as well as farm equipment, while providing improvements to public safety.

d) ***Less Than Significant Impact.*** The completed Project will have no impact on emergency access. Project construction activities would be coordinated with local law enforcement and emergency services providers as applicable. Impacts would be considered less than significant.

e) ***No Impact.*** The Project would not result in an increase in demand for parking in the vicinity of the Project.

Mitigation Measures: None required.

5.18 **Tribal Cultural Resources**

	Potentially Significant Impact	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☒	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision I of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivisiI(c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental Setting

The ASR and HPSR studies did not identify any archaeological resources within the Project site.

The Native American Heritage Commission (NAHC) was contacted to request a sacred lands file search and contact list. On October 27, 2020, the NAHC returned a negative result for sacred lands within the Project's Area of Potential Effects (APE).

All Tribes requesting notification in Yolo County, were delivered a letter via email on February 9, 2022, giving formal notice and invitation by Yolo County to initiate AB 52 consultation on the proposed Project and to request participation of interested parties.

See Section 2 (Environmental Checklist) above for a summary of Project related consultation and coordination with Native American tribes.

Potential Environmental Effects

a) ***i- Less Than Significant Impact.*** Based on the results of the ASR and HPSR documents prepared for the Project and the AB 52 consultation there are no sites, features, places, or cultural landscapes that are 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, or that are listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k) at the Project site. Therefore, impacts are considered less than significant.

ii- Less Than Significant with Mitigation Incorporated. The County sent AB 52 consultation letters to all Native American Tribes who may have knowledge of sites or traditional cultural properties that

may be affected by Project-related activities. All Tribes listed by the NAHC, including those Tribes requesting notification in Yolo County, were contacted via email that included a letter on February 9, 2022, informing them of the proposed Project and to request participation of interested parties. One response was received by the Yocha Dehe Wintun Nation Tribal Historic Preservation Officer (THPO) during the ASR/HPSR outreach. The letter indicated the Yocha Dehe Wintun Nation have cultural interest in the Project location and assigned the Tribe as the authority in the proposed Project area. The Tribe is not aware of any known cultural resources near the Project APE and a cultural monitor is not needed. The recommendation for cultural sensitivity training was made and should any new information or items be discovered as a result of Project related activity, the Yocha Dehe Wintun Nation requests notification.

The Yocha Dehe Wintun Nation representatives attended a field review meeting on February 20, 2020 to visit the Project site and to better understand the proposed Project activities. Yocha Dehe Wintun Nation requested to be notified of Project initiation so they can provide cultural resources education. Implementation of MM TCR-1: Cultural Sensitivity Training will reduce potential impacts to inadvertent discoveries of Tribal Cultural Resources to a less than significant level through educating Project personnel on the importance and value of Tribal Cultural Resources, and appropriate protocols for avoiding and informing the Tribe of potential cultural resources encountered during Project activities. Impacts are considered less than significant with mitigation incorporated.

Mitigation Measures:

MM TCR-1 – (Sensitivity Training)

Prior to the start of the Project, Project personnel will attend cultural sensitivity training to be administered by the Yocha Dehe Wintun Nation Cultural Resources Department Administrative Staff - Phone: (530) 796-3400, Email: THPO@yochadehe.gov.

5.19 Utilities/ Service Systems

Would the Project:	*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 water or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting

There are several utilities in the Project area. AT&T and PG&E (Electric and Gas) utilities will be relocated, prior to construction. New utility services will not be required to serve the proposed Project after completion.

Potential Environmental Effects

a) ***Less Than Significant Impact.*** The Project involves the replacement of an existing bridge and will not require new water or expanded wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities to serve the Project. Utility relocation and realignment will be required, none of which would involve significant environmental impacts. Implementation of the Project will require the relocation of drainage ditches and above-ground utilities outside the clear recovery zone, which will include extension, replacement, and/or relocation of existing drainage structures to accommodate the widened road. This will also include relocation and/or abandonment of underground utilities where they are in conflict with the Project. The Project may include the installation of high-speed internet as well as relocation of AT&T and PG&E facilities. The installation and relocation of these utilities and infrastructure will occur within the footprint of the disturbance area and existing utility easement areas, and will not cause significant environmental effects. This is considered a less than significant impact.

b) ***Less Than Significant Impact.*** The Project would not involve any actions that would require a new water supply or generate wastewater. There may be the need for minor landscaping irrigation to

establish vegetation and replanting along the proposed facilities; however, this water need is not expected to be in perpetuity, nor is it expected to impact existing service levels regarding water use. No new water or wastewater facilities would be constructed or needed as part of the Project.

c) ***No Impact.*** The Project would not produce wastewater.

d) ***Less Than Significant Impact.*** Solid waste generated by the Project would be limited to construction debris. Solid waste disposal would occur in accordance with federal, State, and local regulations. Disposal would occur at permitted landfills; likely the Yolo County Central Landfill located approximately 8 miles east of the Project. The Project would not generate solid waste in amounts that would substantially affect the existing capacity of the Yolo County Central Landfill and impacts would be less than significant.

e) ***No Impact.*** The Project would conform to all applicable state and federal solid waste regulations.

Mitigation Measures: None required.

5.20 **Wildfire**

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	*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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Environmental Setting

In accordance with California Public Resource Code Section 4201-4204 and Government Code Section 51175-51189, CalFire has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), represent the risks associated with wildland fires.

In California, responsibility for wildfire prevention and suppression is shared by federal, state, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas (FRA). The State of California has determined that non-federal lands in unincorporated areas with watershed value are of Statewide interest and have classified those lands as State Responsibility Areas (SRA), which are managed by CalFire. All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRA). Most of the western third of Yolo County has been classified as SRA, with FRA near the northwest and west County boundaries.

The Project is not located in any Fire Hazard Severity Zone per the 2018 CalFire Fire Hazard Severity Zones map (CalFire 2022).

Under State regulations, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas.

Potential Environmental Effects

a) ***No Impact.*** The Project is being implemented to improve safety along CR 96. During construction traffic would be routed around the Project site, which results in an approximate 9-minute detour. The Project would not impair an adopted emergency response plan or emergency evacuation plan.

b) ***No Impact.*** The proposed Project would not exacerbate wildfire risks or expose occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) ***Less than Significant Impact.*** The Project involves replacement of an existing bridge. The completed Project would not exacerbate fire risk. The completed Project will improve public safety/fire prevention by better facilitating transportation of fire-fighting equipment. Project impacts are less than significant.

d) ***No Impact.*** The Project does not include activities that would 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.

Mitigation Measures: None required.

5.21 **Mandatory Findings of Significance**

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

Potential Environmental Effects

a) ***Less Than Significant with Mitigation Incorporated.*** The proposed Project does not have the potential to significantly degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory. Based on the preceding environmental analysis, the application of existing regulations and the incorporation of BMPs, Yolo HCP/ NCCP AMMs, and mitigation measures, all potentially significant impacts associated with the Project, including those related to biological resources, tribal cultural resources, noise, hazards and hazardous materials, hydrology and water quality would be avoided, minimized, or mitigated to maintain a level that is considered less than significant with mitigation incorporated.

b) ***Less Than Significant Impact.*** The Project is consistent with the General Plan and would not result in individually limited but collectively significant impacts; therefore, the Project would not cause any additional environmental effects or significantly contribute to a cumulative impact.

c) ***Less Than Significant Impact.*** The Project would not result in substantial direct or indirect adverse effects from noise, either during Project construction or operation, nor would it result in impacts to air quality, water quality, or utilities and public services. Additionally, measures have been identified to maintain the Project's effects to air quality, water quality, hazards and hazardous materials, and noise levels at less than significant levels. Therefore, the Project would not cause substantial adverse effects on human beings.

6. Summary of Mitigation Measures

The following mitigation measures were identified to reduce impacts to less than significant:

BIOLOGICAL RESOURCES

MM BIO-1 – Western Pond Turtle

Implements Yolo HCP/NCCP AMMs 4 and 14: Cover Trenches and Holes during Construction and Maintenance; Minimize Take and Adverse Effects on Habitat of Western Pond Turtle

The following measures will reduce potential impacts to western pond turtles:

- A pre-construction survey for western pond turtle shall be conducted by a qualified biologist. If a western pond turtle nest is identified during the survey, the biologist shall flag the site and determine if construction activities can avoid affecting the nest. If the nest cannot be avoided, it will be excavated and re-buried at a suitable location outside of the construction impact zone by a qualified biologist. The County will inform CDFW if the nest cannot be avoided and such an activity must occur.
- If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground-disturbing activity for nests that may be unearthed during the disturbance, and will move out of harm's way any turtles or hatchlings found.
- To prevent injury and mortality of western pond turtle, workers will cover open trenches and holes associated with implementation of covered activities that affect habitat for these species or design the trenches and holes with escape ramps that can be used during non-working hours. The construction contractor will inspect open trenches and holes prior to filling and contact a qualified biologist to remove or release any trapped wildlife found in the trenches or holes.

MM BIO-2 – Swainson's Hawk and White-Tailed Kite

Implements Yolo HCP/NCCP AMM16: Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on Swainson's hawk and white-tailed kite to the maximum extent possible:

- The Project proponent will retain a qualified biologist to conduct preconstruction surveys for active nests consistent with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 1 and August 30, with the final survey conducted no more than 3 days prior to the beginning of the construction activity. The results of the survey(s) will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If project-related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the Project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of

individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

MM BIO-3 – Tricolored Blackbird

Implements Yolo HCP/NCCP AMM21: Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird

The following avoidance and minimization measures will be implemented to minimize the potential for adverse impacts on tricolored blackbird to the maximum extent possible:

- The qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).
- If active colony is present or has been present within the last 5 years, implement a species protection buffer within 1,300 feet of the colony site(s) from March 1 to July 30, unless a shorter distance is approved, based on site-specific conditions, by the Conservancy and CDFW.

MM BIO-4 – Special-Status Bird Species, Migratory Birds, and Raptors

The following measures will be implemented to further reduce the potential for impacts on special-status and migratory birds and raptors that may nest in or near the Project area, including northern harrier:

- Project activities and vegetation removal within the Project area shall be initiated outside of the bird nesting season (February 1 – August 31).
- If Project activities and vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 3 days prior to the initiation of Project activities.
    - If an active avian nest (i.e., with egg[s] or young) is observed within 250 feet of the Project area during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

MM BIO-5 – Bat Avoidance and Minimization

The following measures will be implemented to further reduce the potential for impacts on bats that may roost in the Project area.

- Mature trees should be removed and/or fallen between March 1 – April 15, or between September 1 – October 15 (or when evening temperatures are above 45° and rainfall is less than ½ inch in 24 hours). Trees should be removed at dusk to minimize impacts to roosting bats.
- If tree removal cannot be performed outside of the maternity season, a qualified biologist shall conduct a preconstruction survey of suitable roosting habitat within 5 days prior to construction activities.
    - If bats are found, a qualified biologist shall establish a no-disturbance buffer and develop a bat exclusion plan for the passive removal of bats. The plan shall be submitted to CDFW for review prior to implementation.
    - If no roosting bats and no potential for roosting bats are found, tree removal can proceed.
    - If potential for roosting bats has been determined and no bats are discovered, a qualified biologist should monitor tree removal activities to ensure the avoidance and minimization of take of regulated species.

MM BIO-6 – Wetlands and Waters

Implements Yolo HCP/NCCP AMMs 1, 2, 3, 8, 9, and 10: Establish Buffers around Sensitive Natural Communities; Confine and Delineate Work Area to Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas; Avoid and Minimize Effects on Wetlands and Waters

The following measures shall be implemented to avoid or minimize the potential for Project-related impacts on wetlands and waters:

- The County will comply with the terms of a Clean Water Act Section 404 permit issued by the Corps and Section 401 water quality certification issued by the RWQCB for activities involving the discharge of fill material into jurisdictional drainages. The County will also comply with terms of a Streambed Alteration Agreement with the CDFW (if determined necessary by the CDFW). Prior to any discharge into drainages, the required permits and authorizations will be obtained from the respective agencies. All terms and conditions of the required permits and authorizations will be implemented.
- Water quality BMPs will be installed around Union School Slough, and Union School Slough Diversion Channel, in a manner that prevents water, sediment, and chemicals from draining into the feature, and all staging, storage, stockpile areas, and off-road travel routes will be located as far as practicable away from the drainage.
- Mitigation for 0.17 acres (919.4 linear feet) of permanent impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.

- Impacts to Riverine Sensitive Natural Community will be mitigated for through the Yolo HCP/NCCP Natural Community and Land Cover Impacts Mitigation Fees. The specific acreage of compensatory mitigation credits is subject to change depending on consultation with the USFWS and the Conservancy.

MM BIO-7 – Sensitive Natural Communities

Implements Yolo HCP/NCCP AMM9, Establish Buffers around Sensitive Natural Communities

Environmentally Sensitive Area (ESA) fencing will be established around the following Sensitive Natural Communities where they occur within or adjacent to the Project area, when feasible. These areas will be identified on construction drawings and demarcated in the field with flagging and/or signs identifying the area as off limits to all personnel, equipment, and ground-disturbing activities.

Per Yolo HCP/NCCP AMM9, the buffers for each Sensitive Natural Community are as follows:

- Valley foothill riparian: 100 feet from canopy dripline. If avoidance is infeasible, a lesser buffer than is stipulated in the AMMs may be approved by the Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the Project purpose (e.g., if the purpose of the Project is to provide a stream crossing or replace a bridge, the Project may encroach into the buffer and the natural community or species habitat to the extent that is necessary to fulfill the Project purpose). Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.
- Lacustrine and riverine: Outside urban planning units, 100 feet from the top of banks. Within urban planning units, 25 feet from the top of the banks.

MM BIO-8 – Worker Environmental Training Program

Implements Yolo HCP/NCCP AMM6: Conduct Worker Training

- All construction personnel will participate in a worker environmental training program approved/authorized by the Conservancy and administered by a qualified biologist. The training will provide education regarding sensitive natural communities and covered species and their habitats, the need to avoid adverse effects, State and federal protection, and the legal implications of violating the FESA and NCCPA Permits. A pre-recorded video presentation by a qualified biologist shown to construction personnel may fulfill the training requirement.

MM BIO-9 – Tree Removal Documentation and Replacement

The following measures shall be implemented to compensate for the removal of trees and to avoid or minimize the potential for Project-related impacts on tree resources.

- Final plans will identify the number, size, and species of trees to be removed and include a planting plan, to ensure replacement of trees in a manner consistent with County and Resource Agencies policies. If replanting cannot completely compensate for the number of trees removed within the Project site or on County managed land, purchase of compensatory mitigation credits will be required for the remainder of trees. The replanting plan must be approved by the County and any compensatory mitigation credits for tree resources must be purchased prior to vegetation clearing activities.

- A plan for avoidance and minimization of trees that are in the area of direct impact, but not removed, shall be developed by an International Society of Arboriculture (ISA) Arborist and implemented by the County prior to vegetation clearing activities and throughout the construction of the Project.

MM BIO-10 – Control Nighttime Lighting

Implements Yolo HCP/NCCP AMM7: (Control Nighttime Lighting of Project Construction Sites

Workers will direct all lights for nighttime lighting of project construction sites into the project construction area and minimize the lighting of natural habitat areas adjacent to the project construction area.

HAZARDS

MM HAZ-1 Lead Compliance Plan

A lead compliance plan that protects workers and the environment from lead exposure must be prepared prior to implementation of demolition and construction activities. Painted bridge components will need to be removed, transported, and recycled or disposed of in a manner consistent with the lead compliance plan and applicable state and federal law. The plan must address the Caltrans 2022 Standard Specifications §7-1.02K(6)(j)(ii) Lead Compliance Plan, and §7-1.02K(6)(j)(iii) Unregulated Earth Material Containing Lead, and a Health & Safety Plan for workers in accordance with Cal OSHA Title 8, Section 1532.1. Additional sampling and analysis of the paint may be required to insure proper disposal of the painted components.

MM HAZ-2 Soils Testing

A Limited Soils Assessment (LSA) shall be prepared and conducted at the southwest portion of the Project site and northeast of the bridge for the purpose of assessing on-site shallow soil for potential impacts from the following constituents of concern prior to implementation of demolition and construction activities.

- organochlorine pesticides (EPA Method 8081)
- chlorinated herbicides (EPA Method 8151)
- organophosphorus pesticides (EPA Method 8141)

The LSA shall also determine if excavated soils generated during construction activities are likely to be classified as a regulated waste. Should any of the constituents of concern be found in excess concentrations, the applicant shall prepare a Soil Management Plan (SMP) or equivalent report, which shall be distributed to construction personnel. The SMP shall establish protocols for handling, sampling, storage, and disposal of any suspected burn ash-impacted soils generated during construction activities.

MM HAZ-3 Asbestos

Prior to demolition, a Certified Asbestos Consultant (CAC) shall assess the presence of asbestos in the existing culvert, located approximately ±750 ft south of the bridge. The culvert is assumed to contain asbestos, and if found contaminated, shall be disposed of according to the CAC's recommendations. The CAC assessment should be submitted to the YSAQMD and shall be included in the written notification of demolition of structures or renovation operations at least 10 business days prior to commencing work, regardless of the presence or absence of asbestos in building materials.

NOISE

MM NOI-1 – Control of Construction Noise

To avoid substantial construction-period noise impacts to nearby sensitive receptors, the Best Management Practices listed below will be implemented during Project construction. With implementation of these standard construction period specifications, the Project will not result in excessive construction-period noise effects.

1. Project-related noise-generating activities at, or adjacent to, the construction site shall comply with the Caltrans Standard Specifications section 14-8.02. "Control and monitor noise resulting from work activities. Do not exceed 86 dBA at 50 feet from the job site from 9:00 p.m. to 6:00 a.m."
2. All internal combustion engine driven equipment shall be equipped with the appropriate intake and exhaust mufflers, which are in good condition.
3. "Unnecessary" idling of internal combustion engines shall be strictly prohibited.
4. Avoid staging construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment as far as practical from existing noise receptors. Construct temporary barriers to screen noise generating equipment when located in areas adjoining noise-sensitive land uses.
5. "Quiet" air compressors and other stationary noise sources shall be used when applicable.
6. All construction traffic shall be routed to and from the Project site via designated truck routes. Construction-related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the Project vicinity during non-allowed hours.
7. The businesses and residents in the Project area shall be notified in writing by the County of the construction schedule.
8. The County shall designate a "noise disturbance coordinator" who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint and implement reasonable measures to correct the problem. The contractor shall visibly post the telephone number for the disturbance coordinator at the construction site. The County shall include the telephone number in the notice sent to residents regarding the construction schedule.

TRIBAL CULTURAL RESOURCES

MM TCR-1 – (Sensitivity Training)

Prior to the start of the Project, Project personnel will attend cultural sensitivity training to be administered by the Yocha Dehe Wintun Nation Cultural Resources Department Administrative Staff - Phone: (530) 796-3400, Email: THPO@yochadehe.gov.

7. Supporting Information Sources

7.1 **Report Preparation**

Yolo County Department of Community Services, CEQA Lead Agency

Stephanie Cormier	Principal Planner
Ahmad Aleaf	Project Engineer, Senior Civil Engineer, Public Works Division

Mark Thomas (Engineering Consultant)

Julie Passalacqua	Project Engineer

Gallaway Enterprises (Environmental Consultant)

Kevin Sevier	Senior Planner
Anthony McLaughlin	Planner

7.2 **References**

California Air Resources Board (CARB). 2021. Maps of State and Federal Area Designations. https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations

California Department of Conservation. 2020. 2014-2016 Important Farmland Data – Yolo County. Accessed at: https://www.conservation.ca.gov/dlrp/fmmp/Pages/Yolo.aspx. December.

California Department of Fish and Wildlife (CDFW). 15 October 2018. Vegetation classification and mapping program (VegCAMP): California Natural Communities List. Biogeographic Data Branch, Sacramento, CA.

California Department of Transportation (Caltrans). 2020-2022. Highway Design Manual Seventh Edition. Accessed at: https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm.

California Department of Transportation (Caltrans). 2022. Standard Specifications 2022 Edition. Accessed at: https://dot.ca.gov/programs/design/october-2022-ccs-standard-plans-and-standard-specifications/2022-standard-specifications-toc.

California Department of Water Resources (DWR). 2016. California's Groundwater Bulletin 118. Accessed at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_021_67_YoloSubbasin.pdf

California Environmental Quality Act (CEQA) Statutes. 1970. Public Resources Code Section 21000, et seq.

California Geological Survey, 2010, Fault Activity Map of California

CalFire. Accessed November 2022. Recommended and Remaining Draft Local Responsibility Area (including Cities and other Local Agencies) Fire Hazard Severity Zone Maps and Adopted State Responsibility Area Fire Hazard Severity Zone Maps. https://osfm.fire.ca.gov/fire-hazard-severity-zones-maps-2022/

Crawford & Associates, Inc. 2021. Initial Site Assessment County Road 96 Bridge Replacement Over Union School Slough Yolo County, California Bridge No. 22C0126.

Federal Highway Administration (FHWA). 2006. Construction Noise Handbook, Final Report. U.S. Department of Transportation, Federal Highway Administration Office of Natural and Human Environment, Washington, D.C. 20590.

Federal Highway Administration (FHWA). 2017. Highway Traffic Noise Analysis and Abatement Policy and Guidance. U.S. Department of Transportation, Federal Highway Administration, 1200 New Jersey Avenue, SE, Washington D.C. 20590. https://www.fhwa.dot.gov/environMent/noise/regulations_and_guidance/polguide/polguide02.cfm

Gallaway Enterprises. 2021a. Archeological Survey Report, and Historical Property Survey Report for the County Road 96 over Union School Slough Bridge Replacement Project BRLO-5922(103)

Gallaway Enterprises. 2021b. Draft Delineation of Waters of the United States for the County Road 96 over Union School Slough Bridge Replacement Project Federal Project No. BRLO-5922 (103)

Gallaway Enterprises. 2021c. Farmlands Study for the County Road 96 at Union School Slough Bridge Replacement Project.

Gallaway Enterprises. 2022. Natural Environment Study for the County Road 96 over Union School Slough Bridge Replacement Project Federal Project No. BRLO-5922 (103)

ICF. 2018. Yolo Habitat Conservation Plan/Natural Community Conservation Plan. Yolo Habitat Conservancy. Yolo County, California.

Mark Thomas. 2021. Union School Slough Bridge Construction Noise Technical Memorandum BRLO-5922(103)

Natural Resource Conservation Service (NRCS). 2021. Web Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/

State Water Resources Control Board, Central Valley Region. 2018. The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley Region, Fifth Edition, Revised May 2018 (with approved amendments)

Van Gosen, B.S., and Clinkenbeard, J.P., 2011, Reported historic asbestos mines, historic asbestos prospects, and other natural occurrences of asbestos in California: U.S. Geological Survey Open-File Report 2011–1188, 22 p., 1 pl.

Western Regional Climate Center, Desert Research Institute. 2021. http://www.wrcc.dri.edu. Local Climate Summary for the Davis 2 WSW Exp Farm, California (042294) NOAA Cooperative Station.

Wrceo. 2022. Floodplain Evaluation Report County Road 96 Bridge over Union School Slough Project, Yolo County, California Federal-Aid Project No. BRLO-5922(103) Existing Bridge No. 22C0126

Yolo County. 2009a. 2030 Countywide General Plan.

Yolo County. 2009b. Final Environmental Impact Report on the Yolo County 2030 Countywide General Plan (SCH #2008102034).

Yolo Solano Air Quality Management District (YSAQMD). 2007. Handbook for Assessing and Mitigating Air Quality Impacts.

Yolo Solano Air Quality Management District (YSAQMD). 2019. Attainment Status accessed at: https://www.ysaqmd.org/plans-data/attainment/. Accessed December 2020.

Appendix A

Farmlands Study Memo

gallaway
ENTERPRISES

117 Meyers Street • Suite 120 • Chico CA 95928 • 530-332-9909

December 20, 2021

Caltrans District 3 – North Region Local Assistance
ATTN: Thaleena Bhattal, Associate Environmental Planner
703 B Street
Marysville, CA 95901

RE: Farmlands Study for the County Road 96 at Union School Slough Bridge Replacement Project – Yolo County

Ms. Bhattal;

The Yolo County Department of Public Works has reviewed the County Road 96 at Union School Slough Bridge Replacement Project (Project) to determine if there are potential impacts to adjacent agricultural lands from the Project's proposed construction activity. Specifically, this study focused on farmland of prime, local potential, and grazing important farmland within the proposed project boundary. An additional evaluation of preliminary impacts to parcels with Williamson Act contracts is provided as well.

The purpose of the project is to replace the existing, functionally obsolete single span, earth-filled concrete arch bridge over Union School Slough. The Project site is located in an agricultural/rural setting immediately surrounded by riparian woodland, row crops, and orchard. Union School Slough is an intermittent drainage that flows in an eastern direction through the site and is fed by smaller upstream water, groundwater and runoff from precipitation. The project will result in an estimated 0.31 acres of permanent impacts to farmlands as classified by the Farmland Mapping and Monitoring Program (FMMP). The following are the justifications for the evaluations in Part VI of the AD1006 form wherein a larger numeric score reflects a higher potential impact to farmland resources.

Evaluation 1: How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?
The proposed project is located in an agricultural/rural setting. More than 95 percent of the land surrounding the project site is considered non-urban; therefore, it is valued at the maximum of 15 points.

Evaluation 2: How much of the perimeter of the site borders on land in nonurban use?
More than 90 percent of the Project perimeter borders agricultural land; therefore, it is valued at the maximum of 10 points.

Evaluation 3: How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than 5 of the last 10 years?
Approximately 4 percent of the farmland within the site has been farmed more than 5 of the last 10 years; therefore, this criterion is rated at a 0 out of a possible 20.

Evaluation 4: Is the site subject to State or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?
All surrounding parcels, northwest (APN 040-180-012), northeast (APN 040-170-001), southwest (APN-040-180-013), and southeast (APN 040-170-003), which will be partially impacted by construction activities, according to the latest 2020 Yolo County Assessor Maps, are enrolled under Williamson Act contracts and are classified as containing farmland of Local Potential; Prime or Statewide Soils. Additionally, the lands surrounding the project are designated as agricultural in the County's General Plan land use map and are subject to the County's agricultural protections of Goal AG-1: Preserve and defend agriculture as fundamental to the identity of Yolo County – Agriculture and Economic Development Element) The criterion is rated a maximum of 20 points.

Evaluation 5: How close is the site to an urban built-up area?
The site is significantly further than 2 miles from any urban built-up area. Davis, CA, which is considered urban built-up due to a population exceeding fifty thousand, is the nearest urban area at approximately 3.9 miles away. According to the latest census data Davis has a population of 68,543; therefore, a maximum rating of 15 of a possible 15 is given.

Evaluation 6: How close is the site to water lines, sewer lines and/or other local facilities and services whose capacities and design would promote nonagricultural use?
According to the Public Facilities and Services Element of the Yolo County General Plan 2030, the project site, located approximately 4.1 miles southwest of Woodland, and approximately 3.9 miles northwest of Davis, has no community wastewater system. Local facilities and services are present but not less than 3 miles from the site; therefore, a maximum rating of 15 points is given.

Evaluation 7: Is the farm unit(s) containing the site (before the project) as large as the average-size farming unit in the county?
According to the 2017 Census of Agriculture the Average Size of Farm Acres in Yolo County, CA is 484 acres. The bridge site is central to four surrounding parcels all with significantly lower acreages than that of the county average; Parcel 040-180-012 NW, 156.03 acres, is 32% of the average, Parcel 040-170-001 NE, 79.07 acres, is 16%, Parcel 040-180-013 SW, 157.31 acres, is 33%, Parcel 040-170-003 SE, 40.18 acres, is 8%. This criterion is rated 0 out of 10

Evaluation 8: If this site is chosen for the project, how much of the remaining land on the farm will become nonfarmable because of interference with land patterns?
The proposed Project will directly convert 0.31 acres of farmland with a temporary conversion of 0.36 acres during construction; however, the remaining farmland, and temporarily converted acreage will not be permanently affected, and therefore will not become non-farmable because of interference with land patterns. As a result, this criterion is rated at 0 out of 10 due to approximately 9 percent of the acres within the Project boundary being directly converted by the project.

Evaluation 9: Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?
It is assumed that the site has an adequate supply of farm support services and markets, therefore this criterion is rated at a 5 out of a possible 5.

Evaluation 10: Does the site have substantial and well-maintained on-farm investments such as barns, other storage buildings, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?
The parcels surrounding the Project site do appear to contain substantial and well-maintained on-farm investments. The bridge site does not contain on-farm investments such as barns, other storage buildings,

fruit trees and vines. The bridge site does contain components of field terraces, drainage, irrigation and waterways. Conservatively, this criterion is rated 0 out of 20 possible points.

Evaluation 11: Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?
The proposed Project would not reduce the demand for farm support services so as to jeopardize the continued existence of these support services and the viability of the farms remaining in the area. This criterion is rated at a 0 out of a possible 10.

Evaluation 12: Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural uses?
The proposed Project involves the replacement of a functionally obsolete bridge on the existing alignment and is not considered to be fully incompatible with the existing agricultural use of surrounding farmland; however, the project will require the permanent conversion of 0.31 acres of farmland to nonagricultural use. The percentage of acreage to be permanently converted in comparison to the total project boundary acreage is 9 percent; therefore, this criterion is considered tolerable to existing agricultural uses and is rated 1 out of a possible 10

Please find attached a U.S. Department of Agriculture Form AD-1006 that shows this project earning a score of 81 Assessment Points in Part VI. When the final scores from Part V and Part VI is less than 160 alternative assessments are not required.

In regard to Williamson Act contract lands, estimated permanent right-of-way acquisitions total 0.22 acres and temporary construction easement impacts total 0.36 acres. These impact acreages are approximations for planning purposes and subject to revision during the right-of-way acquisition process

Regards,



Kevin Sevier
Vice President and Senior Planner
kevin@gallawayenterprises.com

Enclosed: Attachment A: Form AD-1006
Attachment B: Farmland Impacts Map
Attachment C: Williamson Act Lands

Attachment A: Form AD-1006

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*		Date Of Land Evaluation Request 12/10/2021	
Name of Project CR 96 Union School Slough Bridge Repla		Federal Agency Involved FHWA/Caltrans	
Proposed Land Use Bridge		County and State Yolo County, CA	
PART II *(To be completed by NRCS)*		Date Request Received By NRCS 1/20/2022	Person Completing Form: Jacqueline Vega-NRCS
Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated 234,703 ac	Average Farm Size 484 ac
Major Crop(s) Almond, Tomatoes, and Grapes	Farmable Land In Govt. Jurisdiction Acres: 482,64[illegible]% 73.9	Amount of Farmland As Defined in FPPA Acres: 352,55[illegible]% 54.0	
Name of Land Evaluation System Used CA Revised Storie Index	Name of State or Local Site Assessment System None	Date Land Evaluation Returned by NRCS 1/28/2022	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	0.31			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	0.31			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	0.06			
B. Total Acres Statewide Important or Local Important Farmland	0.26			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.0001			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	23.41			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	68			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	15			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	20			
5. Distance From Urban Built-up Area	(15)	15			
6. Distance To Urban Support Services	(15)	15			
7. Size Of Present Farm Unit Compared To Average	(10)	0			
8. Creation Of Non-farmable Farmland	(10)	0			
9. Availability Of Farm Support Services	(5)	5			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	1			
TOTAL SITE ASSESSMENT POINTS	160	81	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	68	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	81	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	149	0	0	0

Site Selected: A	Date Of Selection 2/3/2022	Was A Local Site Assessment Used? YES ☐ NO ☑

Reason For Selection:

Preferred Project

Name of Federal agency representative completing this form: [signature] Date: 2/3/2022

(See Instructions on reverse side)

Form AD-1006 (03-02)

Attachment B: Farmland Impacts Map

Important Farmland Impacts		
	Permanent	Temporary
Prime Farmland	0.05	0.10
Statewide Importance	0.26	0.26
Total	**0.31**	**0.36**

The impact acreages are approximations for planning purposes and subject to revision during the right-of-way acquisition process

Union School Slough

CR 96

Project Boundary - (3.6 acres)

Permanent Impacts - (0.31 acres)

Temporary Impacts - (0.36 acres)

ROW/Not Farmland

Important Farmland - (0.67 acres)

Prime Farmland

Farmland of Statewide Importance

1:1,435 1 in = 120 ft

0 100 200 Feet

NORTH

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Farmland Impact Assessment

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/17/2021

Attachment C: Williamson Act Land

Acres Impacted Per Parcel with Williamson Act Contracts			
APN	Permanent	Temporary	**Total**
04017001	0.05	0.13	**0.18**
04017003	0.03	0.07	**0.10**
04018012	0.02	0.08	**0.10**
04018013	0.12	0.08	**0.20**
Total	**0.22**	**0.36**	**0.58**

Impact acreages are approximations
for planning purposes and subject to revision
during the right-of-way acquisition process

040-180-012

040-170-001

Union School Slough

040-180-013

040-170-003

CR 96

Project Boundary - (3.6 acres)

ROW/Not Farmland

Parcel Boundary

Williamson Act Lands

Permanent Impacts

Temporary Impacts

1:1,435 1 in = 120 ft

0 100 200 Feet

NORTH

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Impacts to Williamson Act Lands

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/17/2021

Appendix B

Road Construction Emissions Model Output

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for ->	County Road 96 over Dry Slough Bridge Replacement Project			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	0.97	9.86	9.34	5.41	0.41	5.00	1.40	0.36	1.04	0.02	2,150.95	0.58	0.04	2,178.69
Grading/Excavation	4.86	40.17	50.18	7.10	2.10	5.00	2.91	1.87	1.04	0.10	10,016.77	2.93	0.13	10,127.50
Drainage/Utilities/Sub-Grade	3.52	33.04	34.37	6.48	1.48	5.00	2.39	1.35	1.04	0.07	6,934.43	1.56	0.09	7,000.62
Paving	1.14	14.99	10.92	0.57	0.57	0.00	0.50	0.50	0.00	0.03	2,438.46	0.65	0.05	2,469.06
Maximum (pounds/day)	4.86	40.17	50.18	7.10	2.10	5.00	2.91	1.87	1.04	0.10	10,016.77	2.93	0.13	10,127.50
Total (tons/construction project)	0.30	2.72	3.05	0.50	0.13	0.37	0.19	0.12	0.08	0.01	617.29	0.17	0.01	623.87

Notes:

Project Start Year ->	2023
Project Length (months) ->	8
Total Project Area (acres) ->	4
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	200	40
Grading/Excavation	0	0	0	0	1,120	40
Drainage/Utilities/Sub-Grade	0	0	0	0	720	40
Paving	0	0	0	0	320	40

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

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

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

Total Emission Estimates by Phase for ->	County Road 96 over Dry Slough Bridge Replacement Project			Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.01	0.09	0.08	0.05	0.00	0.04	0.01	0.00	0.01	0.00	18.93	0.01	0.00	17.39
Grading/Excavation	0.17	1.41	1.77	0.25	0.07	0.18	0.10	0.07	0.04	0.00	352.59	0.10	0.00	323.40
Drainage/Utilities/Sub-Grade	0.11	1.02	1.06	0.20	0.05	0.15	0.07	0.04	0.03	0.00	213.58	0.05	0.00	195.61
Paving	0.02	0.20	0.14	0.01	0.01	0.00	0.01	0.01	0.00	0.00	32.19	0.01	0.00	29.57
Maximum (tons/phase)	0.17	1.41	1.77	0.25	0.07	0.18	0.10	0.07	0.04	0.00	352.59	0.10	0.00	323.40
Total (tons/construction project)	0.30	2.72	3.05	0.50	0.13	0.37	0.19	0.12	0.08	0.01	617.29	0.17	0.01	565.97

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

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

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

The CO2e emissions are reported as metric tons per phase.

Appendix C

Natural Environment Study

County Road 96 over Union School Slough Bridge Replacement Project



Natural Environment Study

Yolo County, California

Sections 26 and 27
Township 9N, Range 1E

Merritt Quadrangle

District 3-YOL-CR 96
Federal Project No. BRLO-5922(103)

September 2022

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

STATE OF CALIFORNIA
Department of Transportation
District 3-YOL-CR 96

Prepared By: Brittany Reaves Date: 1/19/22

Brittany Reaves, Associate Biologist
(530) 332-9909
Gallaway Enterprises
117 Meyers Street, Suite 120
Chico, CA 95928

Prepared By: Mark T. Christison Date: 1/19/2022

Mark T. Christison, P.E. Senior Civil Engineer
(530) 666-8842
Yolo County, Community Services Department
292 West Beamer Street
Woodland, CA 95695

Recommended for Approval By: Brooks Taylor Date: _____

Brooks Taylor, District Biologist
(530) 821-8297
North Region Environmental Planning M-1
Caltrans District 3

Approved By: Laura Loeffler Date: 09/15/22

Laura Loeffler, District Environmental Branch Chief:
(530) 812-4937
North Region Environmental Planning M-1
Caltrans District 3

For individuals with sensory disabilities, this document can be made available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Gilbert Mohtes-Chan, Public Information Office, California Department of Transportation, 703 B St., Marysville, CA 95901; (530) 741-4572. Voice, or use the California Relay Service TTY number, 711.

Table of Contents

List of Abbreviated Terms i
Summary iii
Chapter 1 – Introduction 1
Project History and Description 1
Chapter 2 – Study Methods 4
Regulatory Requirements 4
Federal 4
State of California 8
Yolo County 11
Studies Required 11
Personnel and Survey Dates 12
Limitations That May Influence Results 14
Chapter 3 – Results: Environmental Setting 15
Description of the Existing Biological and Physical Conditions 15
Study Area 15
Physical Conditions 15
Biological Conditions in the Biological Study Area 15
Regional Species and Habitats and Natural Communities of Concern 18
Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation 24
Waters of the United States 24
Habitats and Natural Communities of Special Concern 24
Riverine 24
Valley Foothill Riparian 27
Special Status Plant Species 29
Special Status Animal Species Occurrences 29
Monarch Butterfly 30
Swainson's Hawk 30
White-tailed Kite 33
Tricolored Blackbird 35
Western Pond Turtle 36
Northern Harrier 38
Pallid Bat 39
Migratory Birds and Raptors 40
Chapter 5 – Conclusions and Regulatory Determinations 42

Federal Endangered Species Act Consultation Summary 42
Essential Fish Habitat Consultation Summary 42
California Endangered Species Act Consultation Summary 42
Wetlands and Other Waters Coordination Summary 42
Invasive Species 43
Chapter 6 – References 45

Figures, Tables, and Appendices

Figure 1. Regional Location 2
Figure 2. Biological Study Area 5
Figure 3. CNDDB Occurrences 6
Figure 4. Land Cover Types 13
Figure 5. Impacts to Land Cover Types 16
Figure 6. Anticipated Impacts to Waters of the US 25

Table 1: Listed and Candidate Species, Sensitive Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur within the Union School Slough BSA 18
Table 2. Invasive Plant Species Identified within the BSA 43

Appendix A – Species Lists
Appendix B – Observed Species List
Appendix C – Project Site Photos
Appendix D – Draft Delineation of Waters of the U.S. Map
Appendix E – Yolo HCP/NCCP Application Form 4

List of Abbreviated Terms

BSA	Biological Study Area
BMP	Best Management Practices
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
County	Yolo County
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
GIS	Geographic Information System
HCP	Habitat Conservation Plan
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Quality Act
NES	Natural Environmental Study

NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OHWM	Ordinary High Water Mark
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SSC	State Species of Special Concern
SWRCB	State Water Resources Control Board
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States

Summary

Yolo County proposes to replace the existing bridge on County Road 96 crossing over Union School Slough with funding made available through the Federal Highway Administration Highway Bridge Program and administered by the California Department of Transportation. The bridge was determined to be structurally deficient by California Department of Transportation as recently as 2013 and currently has a sufficiency rating of 54.9.

The project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. County Road 96 is a rural local roadway that extends between Russell Boulevard to the south and County Road 27 to the north. Within the project vicinity, County Road 96 is an unpaved, gravel road, bordered primarily by agricultural land.

The proposed project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under County Road 96. A pipe culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two (2) 11-foot travel lanes and 2-foot shoulders. The new bridge is anticipated to be a single-span structure, approximately 46 feet long.

Construction of the bridge will involve excavation for and construction of concrete abutments, founded on driven piles. Construction of the roadway approaches will involve the placement of new roadway fill material, aggregate base, hot mix asphalt pavement, and installation of guard rail. Tree removal and removal of other vegetation along the slough will be necessary for the project. Temporary work within Union School Slough includes removal of the existing structure, installation of a pipe culvert at the existing bridge location, falsework erection and removal, and installation of scour countermeasures at the abutments. Temporary slough diversion is anticipated in order to complete activities within the waterway.

Relocation of overhead electrical lines, including two (2) utility poles, along the east side of County Road 96 is anticipated as part of the project. A Sacramento Municipal Utility District gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be southerly of the proposed bridge location and therefore not in conflict.

Gallaway Enterprises conducted assessments required to comply with the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan. The assessments included a Land Cover Mapping and Covered Species Habitat Assessment and a Planning Level Survey

for Land Cover Types and Covered Species Habitat. The purpose of the assessments was to determine the presence of special-status species, quantify land cover types, and define impacts within the Biological Study Area. The Biological Study Area for the project is confined to the County right-of-way, including temporary construction easements along County Road 96. Land cover types designated by the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan as Sensitive Natural Communities occur within the Biological Study Area: Lacustrine/Riverine and Valley Foothill Riparian. Other land cover types delineated by the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan within the Biological Study Area consist of Other Agriculture, Barren, Cultivated Lands (Alfalfa), and Semiagricultural/Incidental to Agriculture.

There is no suitable habitat for special-status plant species within the Biological Study Area. There is potentially suitable habitat within the Biological Study Area for monarch butterfly, Swainson's hawk, white-tailed kite, tricolored blackbird, and western pond turtle, which are covered species under the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan. There is also suitable habitat within the Biological Study Area for northern harrier, and migratory birds and raptors protected under the Migratory Bird Treaty Act and California Fish and Game Code.

There will be no impacts to monarch butterfly, Swainson's hawk, white-tailed kite, tricolored blackbird, western pond turtle, northern harrier, pallid bat, or migratory birds with the implementation of avoidance and minimization measures in accordance with the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan.

There will be minor impacts to Union School Slough and the Union School Slough diversion channel (0.17 acres). Mitigation for impacts to jurisdictional waters of the United States (WOTUS) will be addressed through the purchase of credits at a United States Army Corps of Engineers (Corps)-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Chapter 1 – Introduction

The purpose of the County Road (CR) 96 bridge replacement over Union School Slough project (project) is to improve public safety by replacing the current bridge over Union School Slough which was determined to be structurally deficient in 2013. The project is located in unincorporated Yolo County, California (**Figure 1: Regional Location**).

The purpose of this Natural Environment Study (NES) is to evaluate potential project impacts to special-status species and their habitats within the project vicinity. In addition, this NES complies with the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP) survey and reporting requirements.

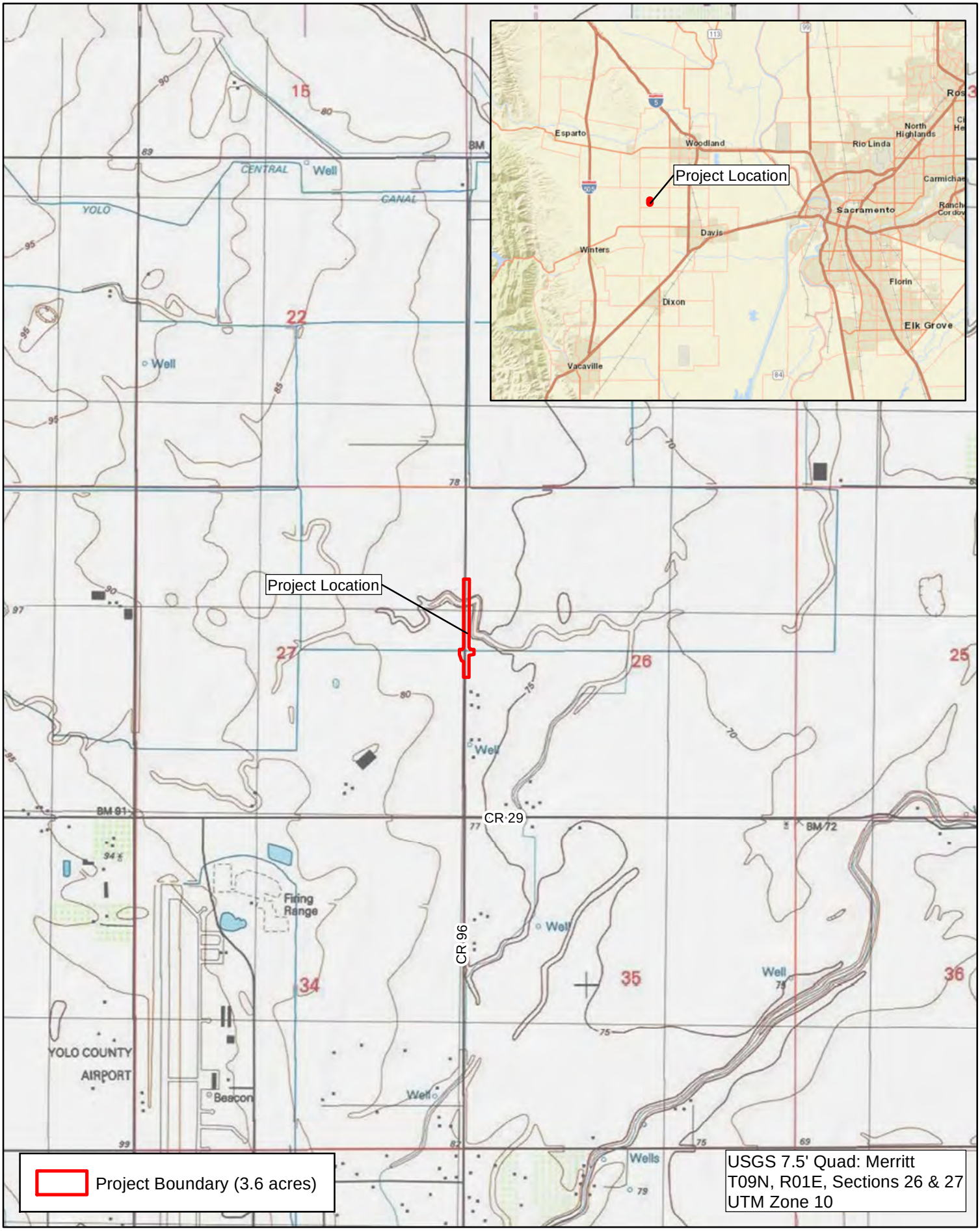
Project History and Description

Yolo County (County) proposes to replace the existing bridge on CR 96 over Union School Slough with funding made available through the Federal Highway Administration Highway Bridge Program and administered by the California Department of Transportation (Caltrans). The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. County Road 96 is a rural local roadway that extends between Russell Boulevard to the south and CR 27 to the north. Within the project vicinity, CR 96 is an unpaved, gravel road with an approximate width of 20 feet and no shoulders. The bridge, with an Average Daily Traffic of 200 vehicles, is bordered primarily by agricultural land. There are no posted speed limits within the project vicinity.

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has exacerbated the documented scouring at the site.

The proposed project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A pipe culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is



NORTH

1:24,000

0 0.25 0.5 Miles

Data Sources: ESRI, USGS

County Road 96 over Union School Slough
Bridge Replacement Project
Regional Location
Figure 1

gallaway ENTERPRISES

GE: #17-013B Map Date: 01/24/2022

anticipated to be a single-span structure, approximately 46 feet long. The structure is expected to consist of a cast-in-place, concrete slab.

Construction of the bridge will involve excavation for and construction of concrete abutments, founded on driven piles. Construction of the roadway approaches will involve the placement of new roadway fill material, aggregate base, hot mix asphalt pavement, and installation of guard rail. Tree removal and removal of other vegetation along the slough will be necessary for the project. Temporary work within Union School Slough includes removal of the existing structure, installation of a pipe culvert at the existing bridge location, falsework erection and removal, and installation of scour countermeasures at the abutments. Temporary slough diversion is anticipated in order to complete activities within the waterway.

Relocation of overhead electrical lines, including two utility poles, along the east side of CR 96 is anticipated as part of the project. A (Sacramento Municipal Utility District) SMUD gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be southerly of the proposed bridge location and therefore not in conflict. The proposed project improvements will remain within the County's right of way and no permanent acquisitions are anticipated. Temporary construction easements will be needed from four (4) parcels adjacent to the bridge to facilitate driveway conforms, utility relocations, and allow construction access.

During construction, CR 96 will be closed to through traffic and a detour route made available. Vehicular traffic will be able to utilize CR 95, 27, and 29 as alternative routes. Construction is anticipated to begin in Spring 2023 and have a duration of approximately 8 months.

Chapter 2 – Study Methods

Biological and botanical surveys were conducted by Gallaway Enterprises after consulting the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) species list, the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) official species list, the NOAA NMFS Essential Fish Habitat (EFH) mapper database, the California Natural Diversity Database (CNDDB), and the California Native Plant Society's (CNPS) inventory of rare and endangered plants for the Biological Study Area (BSA) (**Figure 2: Biological Study Area**). Additionally, a map was generated from the CNDDB which provided the general locations of species occurrences recorded within a quarter-mile radius of the project location (**Figure 3: CNDDB Occurrences**). This quarter-mile buffer was utilized based on project proximity requirements set forth by the Yolo HCP/NCCP.

Regulatory Requirements

The following describes federal, state, and local environmental laws and policies that are relevant to the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA) review processes and documents compliance with the Yolo HCP/NCCP Implementation Handbook: Permitting Guide (February 2020).

Federal

Federal Endangered Species Act

The United States Congress passed the federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the NEPA to help protect the ecosystems upon which endangered and threatened species depend. The ESA makes it unlawful to "take" a listed animal without a permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct". Through regulations, the term "harm" is defined as "an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e., exotic) species (50 Code of Federal Regulations (CFR) §10.13). Activities that involve the



1:2,200

0 50 100 Feet

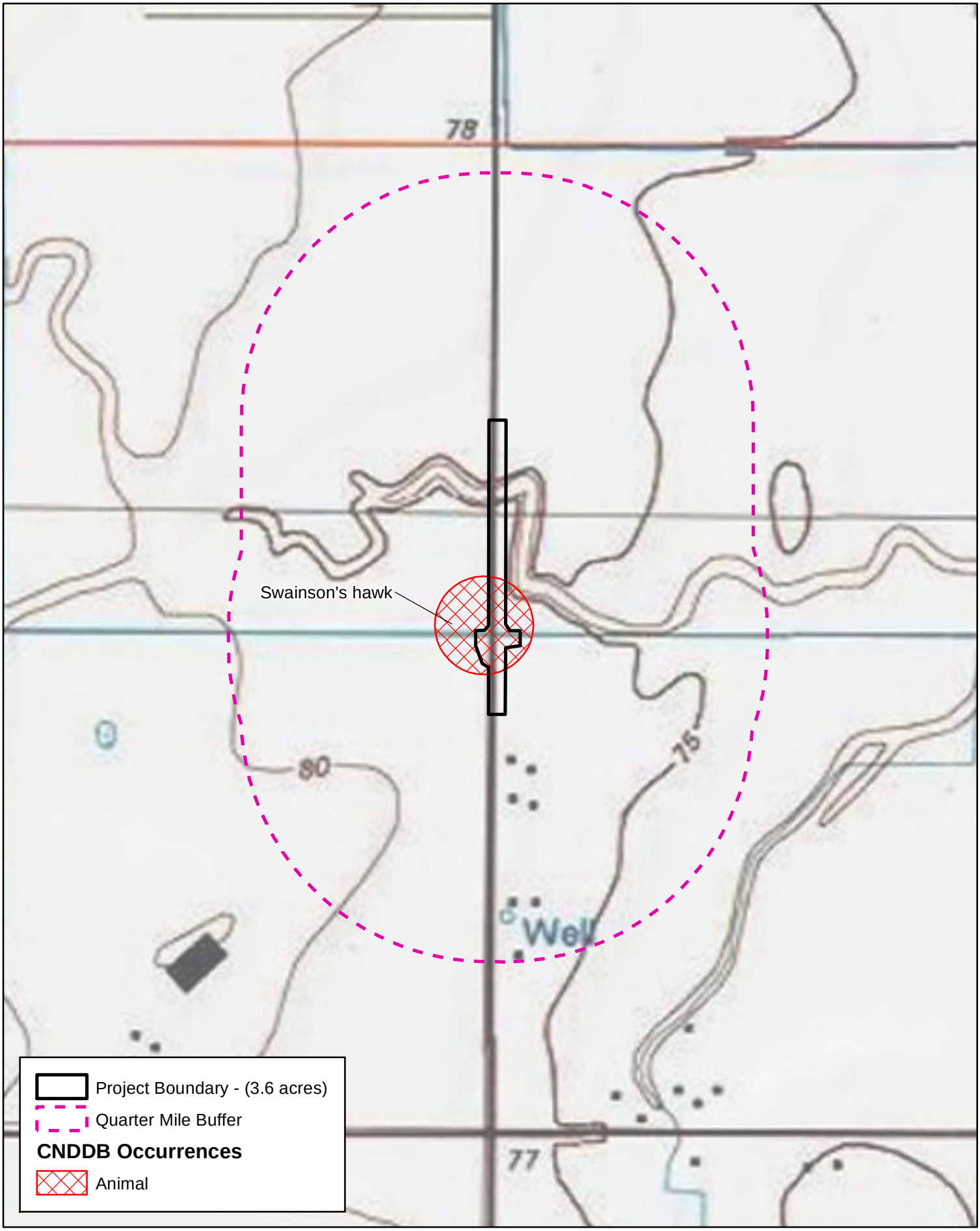
NORTH

Data Sources: ESRI, Yolo County 04/13/2018

County Road 96 over Union School Slough
Bridge Replacement Project
Biological Study Area
Figure 2

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/06/2021



1:8,000

0 300 600 Feet

NORTH

Data Sources: ESRI, USGS, CNDDB, USFWS

County Road 96 over Union School Slough
Bridge Replacement Project
CNDDB Occurrences
Figure 3

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/06/2021

removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA. Thus, vegetation removal and ground disturbance in areas with breeding birds should be conducted outside of the breeding season (approximately March 1 through August 31 in the Central Valley). If vegetation removal or ground disturbance activities are conducted during the breeding season, then a qualified biologist must determine if there are any nests of bird species protected under the MBTA present in the construction area prior to commencement of construction. If active nests are located or presumed present, then appropriate avoidance measures (e.g., spatial or temporal buffers) must be implemented.

Waters of the United States, Clean Water Act, Section 404

The US Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States (WOTUS), under the Clean Water Act (§404). The term "waters of the United States" is an encompassing term that includes "wetlands" and "other waters." Wetlands have been defined for regulatory purposes as follows: "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas." "Other waters of the United States" are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4).

The Corps may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for the permits to apply to a particular project, as well as specific conditions that apply to each nationwide permit.

Executive Orders 13112; Prevention and Control of Invasive Species

On Feb 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. Executive Order 11312 directs all federal agencies to prevent and control introductions of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of

state, local, and private entities. The Invasive Species Council and Advisory Committee oversees and facilitates implementation of the Executive Order, including preparation of a National Invasive Species Management Plan.

Section two (2) of the Executive Order states:

(a) Each Federal agency whose actions may affect the status of invasive species shall, to the extent practicable and permitted by law, (1) identify such actions; (2) subject to the availability of appropriations, and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and (3) not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species in the United States or elsewhere unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination 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.

(b) Federal agencies shall pursue the duties set forth in this section in consultation with the Invasive Species Council, consistent with the Invasive Species Management Plan and in cooperation with stakeholders, as appropriate, and, as approved by the Department of State, when Federal agencies are working with international organizations and foreign nations.

State of California

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW) when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, “Species

of Special Concern" receive consideration by CDFW. Species of Special Concern are those whose numbers, reproductive success, or habitat may be threatened.

California Fish and Game Code

The California Fish and Game Code (CFGC) (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also 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".

Clean Water Act, Section 401

The Clean Water Act (CWA) (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and Other Waters of the United States. In accordance with the CWA (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board (SWRCB), Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the CWA (§402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

Streambed Alteration Agreement

The CDFW is a trustee agency that has jurisdiction under the CFGC (§1600 et seq.). The CFGC (§1602), requires that a state or local government agency, public utility, or private entity must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds… except when the department has been notified pursuant to Section 1601". If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

Rare and Endangered Plants

The California Native Plant Society (CNPS) maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-listed plants receive consideration under CEQA review. The CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGC §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Game Code §1913 exempts from the 'take' prohibition 'the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way".

California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGC dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project's potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

Yolo County

Yolo Habitat Conservation Plan/Natural Community Conservation Plan

The Yolo HCP/NCCP is a 50-year regional plan that proposes to protect endangered species and natural resources while allowing for orderly development in Yolo County consistent with local General Plans. The plan covers 12 wildlife and plant species and implements guidelines for identifying and minimizing potential impacts to species that are covered under the plan. The NES has been prepared in accordance with the Yolo HCP/NCCP Implementation Handbook: Permitting Guide (February 2020).

Studies Required

Gallaway Enterprises conducted biological and botanical habitat assessments within the BSA. Gallaway Enterprises Senior Biologist Melissa Murphy and Senior Botanist Elena Gregg conducted planning level surveys and field verified Yolo HCP/NCCP mapped land cover types. Planning level surveys are conducted during the project planning and permitting process. There are two types of planning level surveys: 1) surveys conducted to assess land cover types and covered species habitat, and 2) surveys to determine the presence/absence of covered species through species specific protocol surveys. Information collected during planning level surveys is used to determine land cover impacts, mitigation fees, and applicable avoidance and minimization measures.

Planning level surveys were conducted following review of the Yolo HCP/NCCP, USFWS IPaC report, NOAA NMFS species list, EFH mapper, CNDDB Rarefind 5 report, CNPS inventory, and the CNDDB occurrence map (**Figure 3: CNDDB Occurrences**). The United States Geological Survey (USGS) "Merritt" 7.5-minute quadrangle was used to derive the agency species lists **(Appendix A: Species Lists)**. Based on the results of these inquiries, Gallaway Enterprises conducted planning level surveys and protocol-level surveys to identify any Yolo HCP/NCCP covered, rare, endangered, threatened, or sensitive species and their habitats that may have the potential to occur within the BSA or within proximity distances as described in Table 2-3 of the Yolo HCP/NCCP *Permitting Guide*. The Yolo HCP/NCCP covers 12 species and their habitats; however, Gallaway biologists conducted habitat assessments and pre-screening surveys for all sensitive wildlife and plant species that could be impacted by the project.

On June 23, 2020, biologists approved by the Yolo HCP/NCCP conducted planning level surveys for land cover types, covered species habitat, and, when applicable, species-specific surveys were completed. Ms. Murphy and Mrs. Gregg verified the location of the

Yolo HCP/NCCP designated planning units, and the acreage of land cover types present within the BSA (**Figure 4: Land Cover Types**).

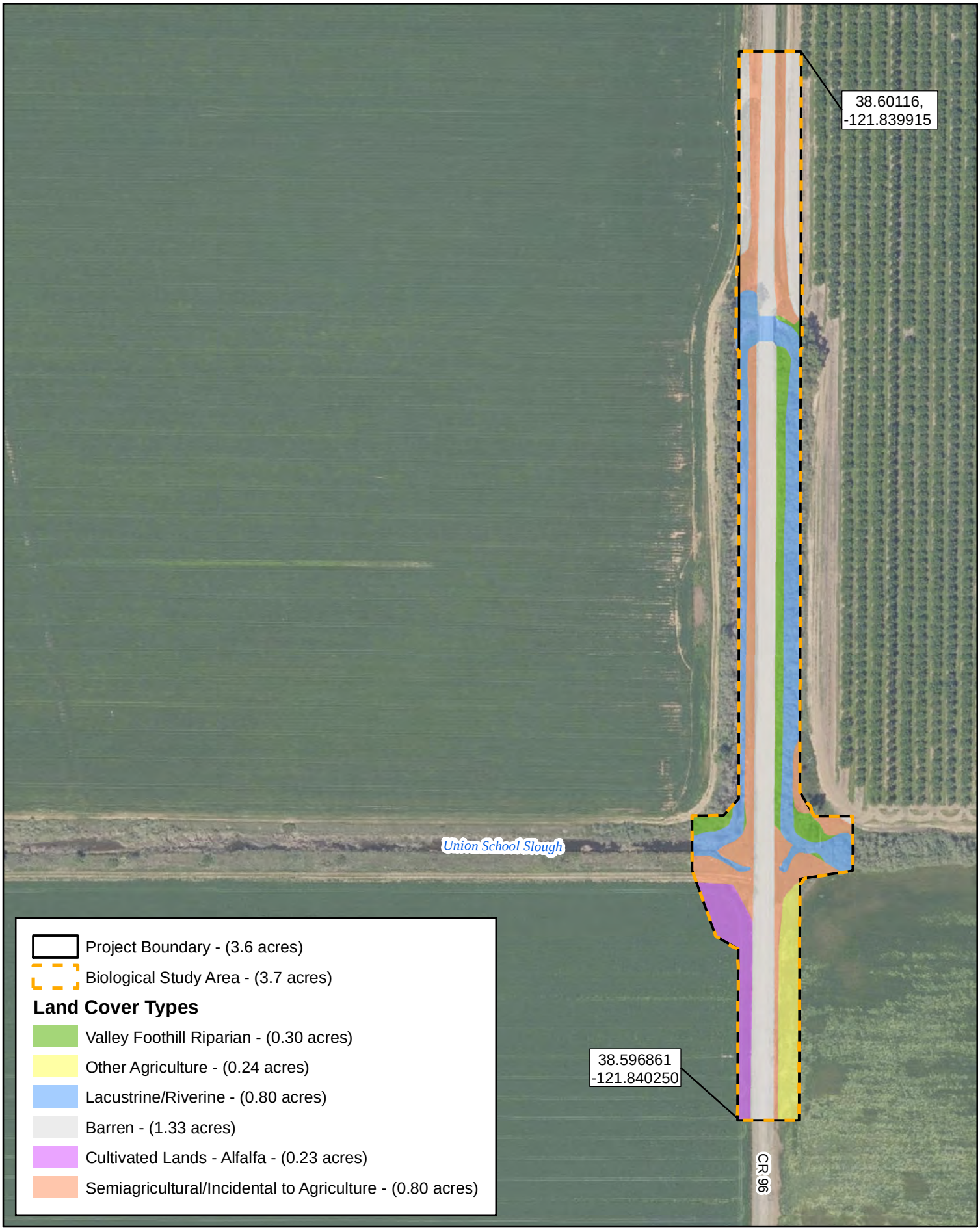
A delineation of WOTUS was conducted within the the BSA. The BSA was surveyed on-foot by Gallaway Enterprises staff on June 23, 2020 and October 20, 2021 to identify potentially jurisdictional features. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the United States Army Corps of Engineers Wetlands Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (2008). The boundaries of non-tidal, non-wetland waters, when present, were delineated at the OHWM as defined in 33 Code of Federal Regulations (CFR) 328.3 and further described in the U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (2008). The OHWM represents the limit of Corps jurisdiction over non-tidal waters (e.g., streams and ponds) in the absence of adjacent wetlands (33 CFR 328.04) (Curtis et al 2011).

Personnel and Survey Dates

Gallaway Enterprises visited the BSA on June 23, 2020. During the visit, Senior Biologist Melissa Murphy and Senior Botanist Elena Gregg conducted planning level surveys as prescribed by the Yolo HCP/NCCP. (**Appendix B: Observed Species List, Appendix C: Project Site Photos**). Mrs. Gregg revisited the site on October 20, 2021 to confirm planning level surveys and the delineation of aquatic resources.

Ms. Murphy has over 8 years of experience surveying at the protocol and general level for listed reptiles and amphibians including giant gartersnake, California red-legged frog, foothill yellow-legged frog, and western pond turtle. Ms. Murphy has extensive experience PIT tagging reptiles, assisting in dewatering activities including fish relocation, surveying for nesting birds and raptors, capturing and banding waterfowl, and conducting habitat assessments for listed species. She regularly conducts habitat assessments and develops and implements mitigation measures for a variety of private and public works projects throughout northern California. Ms. Murphy is approved by the Yolo Conservancy to conduct surveys in the Yolo HCP/NCCP.

Mrs. Gregg has over 15 years of experience conducting rare plant surveys, wetland delineations, and habitat assessments in California. She has a working knowledge of CNPS, CDFW, and USFWS survey protocols and holds a CDFW collection permit for listed plant species. Through her extensive field experience in a wide array of habitats and eco-regions in northern California, Mrs. Gregg has gained knowledge of locally invasive



NORTH

1:2,200

0 100 200 Feet

Data Sources: ESRI, Yolo County 04/13/2018

County Road 96 over Union School Slough
Bridge Replacement Project
Land Cover Types
Figure 4

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/06/2021

plants species and noxious weeds. Mrs. Gregg is approved by the Yolo Conservancy to conduct surveys in the Yolo HCP/NCCP.

Land Cover Mapping and Covered Species Habitat Assessment Verification

The Land Cover Mapping and Covered Species Habitat Assessment and a Planning Level Survey for Land Cover Types and Covered Species Habitat were conducted by walking the entire BSA and identifying specific habitat types and elements. Land within 1,320 feet of the project limits was evaluated for land cover types and the presence of suitable habitat for species covered under the Yolo HCP/NCCP. If suitable habitat was observed for special-status species it was then evaluated for quality based on vegetation composition and structure, physical features (e.g., water, soils), micro-climate, surrounding area, presence of predatory species and available resources (e.g., prey items, nesting substrates).

Botanical Habitat Assessment

Botanical habitat assessments were conducted on June 23, 2020 and October 20, 2021 by Senior Botanist Elena Gregg to assess potential for special-status plant species to occur within the BSA. The assessment was conducted by walking in all accessible areas of the BSA and noting the habitat elements present (e.g., soils, geology, hydrology, topography, aspect, elevation, etc.) and vegetation communities present. If present, natural and man-made disturbance patches were noted as well as the successional stage of vegetation within the BSA. Botanical species observed within the BSA during this field visit are listed in **Appendix A**.

Limitations That May Influence Results

Only lands where Yolo County secured a right of entry were surveyed. Lands outside of the BSA that required analysis by the Yolo HCP/NCCP were done so remotely. There were no limitations that may influence results of the Land Cover Mapping and Covered Species Habitat Assessment and Planning Level Surveys within the BSA.

Chapter 3 – Results: Environmental Setting

Description of the Existing Biological and Physical Conditions

Study Area

The BSA is the area where the focus of biological surveys is conducted and where all construction and staging will occur (**Figure 2: Biological Study Area**). The BSA encompasses all anticipated areas of impact and temporary construction easements, which includes the entire existing CR 96 over Union School Slough Bridge and approaches on both sides on the bridge. The BSA also includes the fee buffer area prescribed by the Yolo HCP/NCCP. The total area of the BSA is 3.7 acres. In accordance with the Yolo HCP/NCCP, land within 1,320 feet of the project limits was evaluated for land cover types and the presence of suitable habitat for species covered under the plan.

Physical Conditions

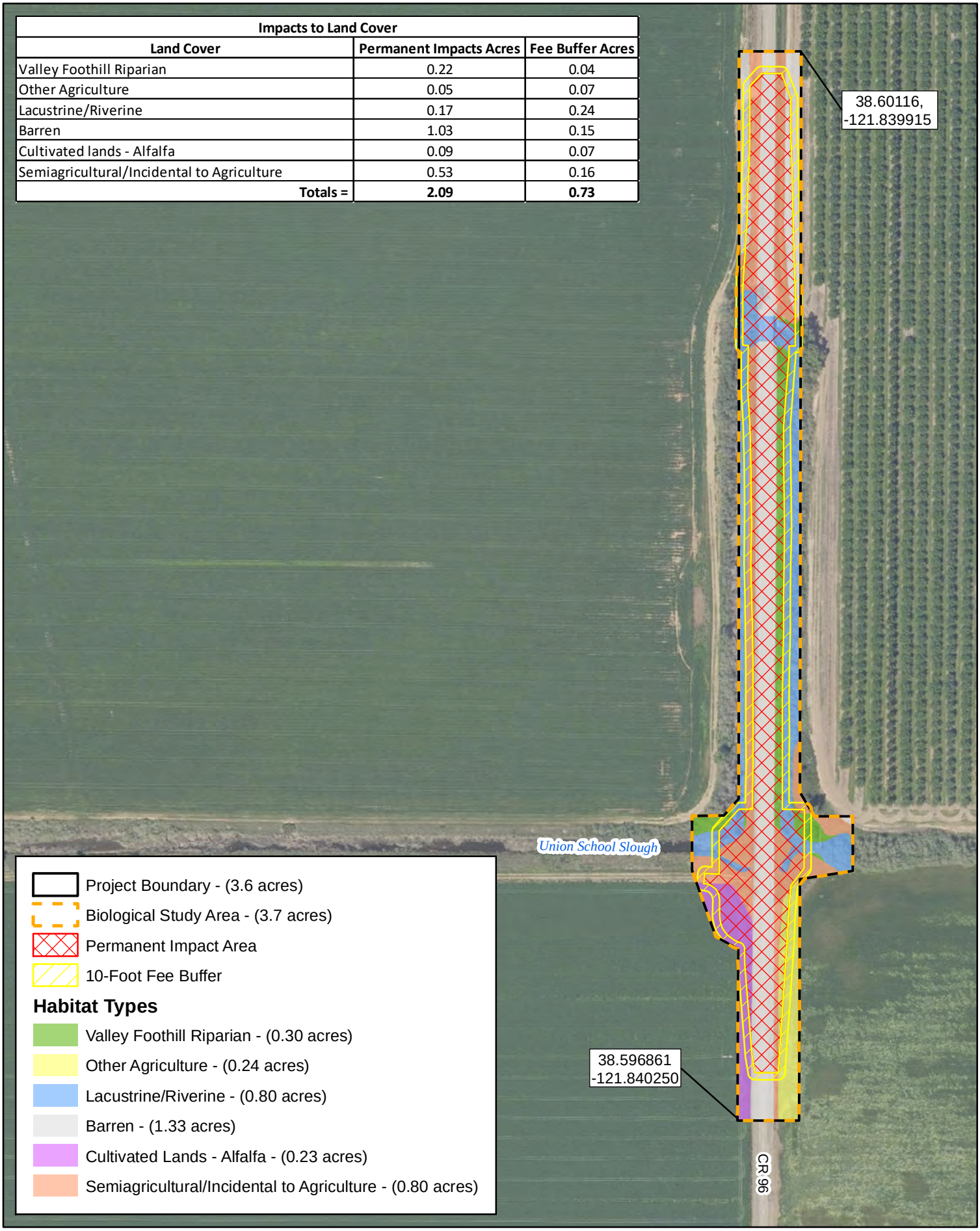
The BSA is located within the Sacramento Valley, northwest of the City of Davis, in unincorporated Yolo County, California. The BSA is composed primarily of existing roadway, gravel road shoulders, Union School Slough, narrow bands of Valley Foothill Riparian vegetation along the banks of the slough, and active agricultural land. Soils within the BSA consist of loam. The average annual precipitation for the area is 17.55 inches and the average temperature is 60.35° F (Western Regional Climate Center 2021). The BSA occurs at an elevation of approximately 78 feet above sea level. The overall area is sloped between 0 and 2 percent; however, the channel banks were highly channelized and had slopes of 70 percent or greater.

Biological Conditions in the Biological Study Area

Land cover types delineated by the Yolo HCP/NCCP within the BSA are Riverine, Valley Foothill Riparian, Cultivated Lands, Barren, Other Agriculture, and Semiagricultural/Incidental to Agriculture (**Figure 5: Impacts to Land Cover Types**).

The existing roadway is not considered habitat. Land cover types were mapped within the BSA which includes the area where construction will occur and a 10-foot buffer which is referred to as the "fee buffer." The Yolo HC/NCCP requires that permanent impacts to land cover types and the fee buffer areas be calculated and entered into the application form for coverage under the Yolo HCP/NCCP; thus, **Figure 5** includes a column that depicts the permanent impacts to land cover types and well as the fee buffer areas.

Impacts to Land Cover		
Land Cover	**Permanent Impacts Acres**	**Fee Buffer Acres**
Valley Foothill Riparian	0.22	0.04
Other Agriculture	0.05	0.07
Lacustrine/Riverine	0.17	0.24
Barren	1.03	0.15
Cultivated lands - Alfalfa	0.09	0.07
Semiagricultural/Incidental to Agriculture	0.53	0.16
Totals =	**2.09**	**0.73**



NORTH

1:2,200

0 50 100 Feet

Data Sources: ESRI, Yolo County 04/13/2018

County Road 96 over Union School Slough
Bridge Replacement Project
Impacts to Land Cover Types
Figure 5

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/17/2021

Yolo HCP/NCCP Land Cover Types

Lacustrine and Riverine

The Lacustrine and Riverine SNC is defined by the Yolo HCP/NCCP as the open water portions of lakes, rivers, and streams. Within the BSA, there are three (3) drainages that qualify as Riverine habitat. The drainages within the BSA are Union School Slough and Union School Slough Diversion Channel. Union School Slough and Union School Slough Diversion Channel are intermittent drainages that are used to transport agricultural water. There are patches of fresh emergent vegetation within Union School Slough. Intermittent drainages convey precipitation and agricultural runoff during the wetter winter and spring months, and typically dry up during the summer and early fall. These drainages may experience summertime flows in association with the release of agricultural irrigation. Flowing water was observed within Union School Slough during the June field visit. Riverine habitat provides food for waterfowl, herons (*Ardeidae* sp.), and many species of insectivorous birds, hawks, and their prey. Riverine habitats support many species of fish, amphibians, reptiles, birds, and mammals (Meyer and Laudenslayer 1988).

Valley Foothill Riparian Natural Community

The Valley Foothill Riparian land cover type is designated as a SNC by the Yolo HCP/NCCP and consists of deciduous scrubby vegetation along streams and at the margins of rivers, dominated by willows, and areas dominated by herbaceous riparian vegetation if less than 1 acre in size. Within the BSA the riparian vegetation was dominated by a dense shrub canopy of sandbar willow (*Salix exigua*) and an understory of Himalayan blackberry (*Rubus armeniacus*). Also lining the channel was the occasional valley oak (*Quercus lobata*) and shining willow (*Salix lasiandra*). Valley foothill riparian habitats provide food, water, migration, and dispersal corridors for fish species, and escape, nesting, and thermal cover for an abundance of other wildlife species. Within the BSA, Riparian Scrub land cover occurs in association with Union School Slough, which flows through the BSA.

Other Agriculture

The Other Agriculture land cover type consists of deciduous fruit and nut orchards, citrus and subtropical orchards that are typically single-species, tree-dominated agricultural lands and do not support any covered or local concern species.

Barren

The Barren land cover type consists of areas that are devoid of vegetation. Barren, rock outcrop, levee (tops and riprapped areas), and gravel/sand bars land cover types fall within this general definition. As opposed to the urban land cover type, which is dominated by structures and pavement, barren lands include areas that have been cleared of vegetation and are not closely associated with a human structure. Barren land does not typically support wildlife species, although some species such as killdeer

(*Charadrius vociferus*) and western fence lizard (*Sceloporus occidentalis*) may be found breeding barren habitat.

Cultivated Lands: Alfalfa

The Cultivated Lands: alfalfa land cover type consists of a relatively low-growing perennial herbaceous legume species that is periodically irrigated and cut for hay, often five times during the growing season. The high protein content of its leaves makes alfalfa highly palatable for rodents such as ground squirrels, gophers, and voles, which are often present in high numbers in the fields. Alfalfa crops may support foraging habitat for Swainson's hawk and white-tailed kite per the Yolo HCP/NCCP.

Semiagricultural/Incidental to Agriculture

Semiagricultural areas include livestock feedlots, farmsteads, and miscellaneous semiagricultural features such as small roads, ditches, and unplanted areas of cropped fields (e.g., field edges). This land cover type consists of farmsteads and field edges, which may provide potentially suitable foraging habitat for Swainson's hawk and white-tailed kite per the Yolo HCP/NCCP.

Regional Species and Habitats and Natural Communities of Concern

The following special-status species were identified under the Yolo HCP/NCCP, USFWS IPaC species list, CNDDB Rarefind 5, and the CNPS list of rare and endangered plants as having potential to occur within the vicinity of the BSA and/or having recorded observations within or within close proximity to the BSA. Not all special-status species listed under federal and state species lists have potential to occur within the BSA due to unsuitable habitat or lack of observations in the area. A summary of special-status species listed In the Yolo HCP/NCCP, USFWS IPaC species list, CNDDB, and the CNPS inventory of rare and endangered plants within the "Merritt" USGS 7.5-minute quadrangle and their potential to occur within the BSA is described below in **Table 1**.

Table 1: Listed and Candidate Species, Sensitive Natural Communities, and Critical Habitat Potentially Occurring or Known to Occur within the Union School Slough BSA

Common Name	Scientific Name	Status Fed, State, CNPS, HCP	General Habitat Description	Habitat Present/ Absent	Rationale
SENSITIVE NATURAL COMMUNITIES					
Riverine		HCP	The open water portions of lakes, rivers, and streams.	HP	There is Riverine Natural Community present within the BSA.

SENSITIVE NATURAL COMMUNITIES					
Valley Foothill Riparian		HCP	Scrubby vegetation, deciduous trees, and alder, willow, and oak forests associated with streams and riparian areas.	HP	There is Valley Foothill Riparian Natural Community present within the BSA.
PLANTS					
California alkali grass	*Puccinellia simplex*	1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. (BP: Mar - May)	A	There is no suitable habitat within the BSA.
Ferris' milk-vetch	*Astragalus tener* var. *ferrisiae*	1B.1	Meadow & seep, Valley & foothill grassland, Wetland. (BP: Apr–May)	A	There is no suitable wetland habitat present in the BSA.
Heartscale	*Atriplex cordulata* var. *cordulata*	1B.2	Chenopod scrub, meadows and seeps, valley/foothill grassland (sandy), in saline or alkaline soils. (BP: Apr - Oct)	A	There is no saline nor alkaline soils within the BSA. This species was not observed during the protocol level survey within the BSA on June 23, 2020.
Keck's checkerbloom	*Sidalcea keckii*	FE/1B.1	Grassy slopes in blue oak woodland. On serpentine-derived, clay soils, at least sometimes. Found at elevations between 85-505 meters. (BP: Apr-May [June])	A	There is no blue oak woodland within the BSA. The BSA is outside of the species known elevational range. This species was not observed during the protocol level survey within the BSA on June 23, 2020. No effect.
Palmate-bracted bird's beak	*Chloropyron palmatum*	FE/SE/1.B1/HCP	Alkali prairie land cover type. (BP: May - Oct)	A	There is no suitable habitat within 250 feet of the BSA. This species was not observed during the protocol level survey within the BSA on June 23, 2020. No effect.
San Joaquin spearscale	*Extriplex joaquinana*	1B.2	In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc (BP: Apr-Oct)	A	There is no wetland habitat within the BSA. This species was not observed during the protocol level survey within the BSA on June 23, 2020.
INVERTEBRATES					
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT/HCP	Elderberry (*Sambucus* sp.) shrubs.	A	No elderberry shrubs were observed within the BSA during the field visit. No effect.
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT	Moderately turbid, deep, cool-water vernal pools.	A	There are no vernal pools within the BSA. No effect.
Vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Vernal pools, swales, and ephemeral freshwater habitat.	A	There are no vernal pools within the BSA. No effect.

INVERTEBRATES					
Monarch butterfly	*Danaus plexippus*	FC	Egg and larval stage dependent upon milkweed. Adults migrate seasonally, amassing in in dense tree canopies; e.g., eucalyptus.	HP	Milkweed was observed within the BSA.
AMPHIBIANS AND REPTILES					
California red-legged frog	*Rana draytonii*	FT/SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation.	A	None. California red-legged frogs have been extirpated from the valley floor since the 1960s (USFWS 2002). There are no CNDDB occurrences within 20 miles of the BSA. No effect.
California tiger salamander *Central California DPS*	*Ambystoma californiense*	FT/ST/HCP	Vernal pools, alkali sinks, ponds, grasslands, blue oak woodlands, blue oak-foothill pine, valley oak alliance, and pastures occurring within Planning Units 4, 5, 13, 16, or 18.	A	There is no suitable breeding habitat within 500 feet of the BSA and the surrounding agricultural practices preclude suitable upland burrows. California tiger salamander are not expected to occur within the BSA's Planning Unit (11). No effect.
Giant gartersnake	*Thamnophis gigas*	FT/ST/HCP	Agricultural wetlands and ricelands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and their associated uplands located east of Highway 113 and Interstate 5.	A	Per the HCP/NCCP, there is no suitable habitat for giant garter snake west of Highway 113 and Interstate 5 where the BSA is located. No effect.
Western pond turtle	*Emys marmorata*	SSC/HCP	Ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft. elevation.	HP	The BSA is contains Riverine habitat and is located within Yolo HCP/NCCP modeled aquatic habitat for this species.
Western spadefoot	*Spea hammondii*	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Open, sparsely vegetated, intermittent pools are essential for breeding and egg-laying (January through May).	A	Union School Slough is not suitable habitat for western spadefoot due to heavy vegetative cover (USFWS 2005) and lack of suitable aestivation habitat.
FISH					
Chinook salmon *Central Valley spring-run ESU*	*Oncorhynchus tshawytscha*	FT/ST	Sacramento River and its tributaries.	A	The intermittent stream present does not provide suitable habitat and barriers exist between downstream population and the BSA. No effect.

FISH					
Chinook salmon *Sacramento River winter-run ESU*	*Oncorhynchus tshawytscha*	FE/SE	Sacramento River and its tributaries.	A	The intermittent stream present does not provide suitable habitat and barriers exist between downstream population and the BSA. No effect.
Delta smelt	*Hypomesus transpacificus*	FT/SE	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay.	A	The BSA is outside of this species known range. No effect.
Steelhead *California Central Valley DPS*	*Oncorhynchus mykiss irideus*	FT	Sacramento and San Joaquin rivers and their tributaries.	A	The intermittent stream present does not provide suitable habitat and barriers exist between downstream population and the BSA. No effect.
BIRDS					
Bank swallow	*Riparia riparia*	ST/HCP	Barren- gravel and sand bars land cover types in Planning Units 6, 7, 12, 14, or 17.	A	There is no suitable habitat within 500 feet of the BSA. The BSA is located in Planning Unit 11, which does not contain suitable habitat for this species.
Burrowing owl	*Athene cunicularia*	SSC/HCP	California annual grassland alliance and barren-anthropogenic land cover types, cultivated lands/pasture, alfalfa.	A	The surrounding agricultural practices eliminate the potential establishment of nesting burrows. There is no suitable habitat within 500 feet of the BSA.
Least Bell's vireo	*Vireo bellii pusillus*	FE/SE/HCP	Blackberry alliance, coyote brush, Fremont Cottonwood-valley oak-willow riparian forest association, Mixed Fremont cottonwood-willow, mixed willow alliance, and white alder (mixed willow) riparian forest land cover types located within Planning Units 7, 9, 12, 14, 17, or 18.	A	There is no suitable habitat present within the BSA. The BSA is located in Planning Unit 11, which does not contain suitable habitat for this species. No effect.
Northern harrier	*Circus hudsonius*	SSC	Coastal salt & freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.	HP	The nearest CNDDB occurrence (#51) is located approximately 4.5 miles east of the BSA within a wheat field. There are suitable agricultural fields that could support nesting and foraging activity for this species within the BSA.

BIRDS					
Swainson's hawk	*Buteo swainsoni*	ST/HCP	Breeds in tall trees in grasslands, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas supporting rodent populations.	HP	There are suitable nesting trees and foraging habitat within the BSA. There is a CNDDB occurrence (#2111) that overlaps the BSA.
Tricolored blackbird	*Agelaius tricolor*	ST/HCP	Fresh emergent wetlands, blackberry brambles, willow thickets, agricultural fields and grasslands.	HP	There is suitable nesting and foraging habitat within the BSA.
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/SE/HCP	Fremont Cottonwood-valley oak-willow (ash-sycamore) riparian forest association, mixed Fremont cottonwood-willow alliance, and white alder (mixed willow) riparian forest land cover types that occur in patch sizes of 25 acres or greater with a width of at least 330 feet.	A	There is no suitable habitat present within the BSA. No effect.
White-tailed kite	*Elanus leucurus*	FP/HCP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes often next to deciduous woodlands.	HP	There are suitable nesting trees and foraging habitat within the BSA. Species was observed on-site during planning level surveys.
MAMMALS					
American badger	*Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	A	There is no suitable habitat present within the BSA.
Pallid bat	*Antrozous pallidus*	SSC	Rocky outcroppings to open, sparsely vegetated grasslands with nearby water source. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., cavities and exfoliating bark), and various human structures (i.e., bridges).	HP	There is suitable roosting habitat present within the riparian habitat in the BSA.

Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is or may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Candidate (SC); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1B = Rare or Endangered in California or elsewhere; CRPR 2 = Rare or Endangered in California, more common elsewhere; CRPR 3 = More information is needed; CRPR 4 = Plants with limited distribution; 0.1=Seriously Threatened; 0.2= Fairly Threatened; 0.3= Not very Threatened; Covered under the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP).

Chapter 4 – Results: Biological Resources, Discussion of Impacts and Mitigation

Waters of the United States

A delineation of WOTUS was performed for the entire project (**Appendix D: Draft Delineation of Waters of the US Map**). Project impacts to potentially jurisdictional WOTUS were determined by overlaying the project plans over the delineation map. **Figure 6** depicts the anticipated impacts to WOTUS. There will be 0.17 acres of permanent impacts to Union School Slough, a jurisdictional drainage. Mitigation for impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Habitats and Natural Communities of Special Concern

All land cover types that occur within the BSA require mitigation fees for impacts. In this section, only land cover types designated as Sensitive Natural Communities by the Yolo HCP/NCCP are discussed.

Riverine

The Lacustrine and Riverine land type cover is identified as a SNC by the Yolo HCP/NCCP and is defined as the open water portions of lakes, rivers, and streams. The BSA contains Riverine habitat in the form of Union School Slough, which flows through the site. Union School Sough is used to transport agricultural water. The section of Union School Slough that flows through the BSA is highly channelized.

The Lacustrine and Riverine Natural Community includes a variety of lakes, reservoirs, and ponds (Lacustrine); rivers and streams (Riverine); and other open-water land cover types, such as stock ponds, stormwater detention ponds, and wastewater treatment ponds. The Lacustrine and Riverine Natural Community is designated as open water in the land cover database. Perennially aquatic natural communities usually support fish, which may affect suitability for invertebrates, amphibians, and some reptiles, while seasonal riverine natural communities may contain unique assemblages of fish (Moyle 2002). Lacustrine and riverine natural communities support algae, mosses, and aquatic plants such as duckweed. Turbidity, water temperature, and oxygen content affect the quality of habitat for many plant and animal species, including covered species. The concentration and characteristics of the particles that cause turbidity within the water column affect the quantity and quality of light penetration, which affects plant and algal growth rates. Water temperature varies by season and depth within the water column. The Lacustrine and Riverine Sensitive Natural Community supports a number of common wildlife species.

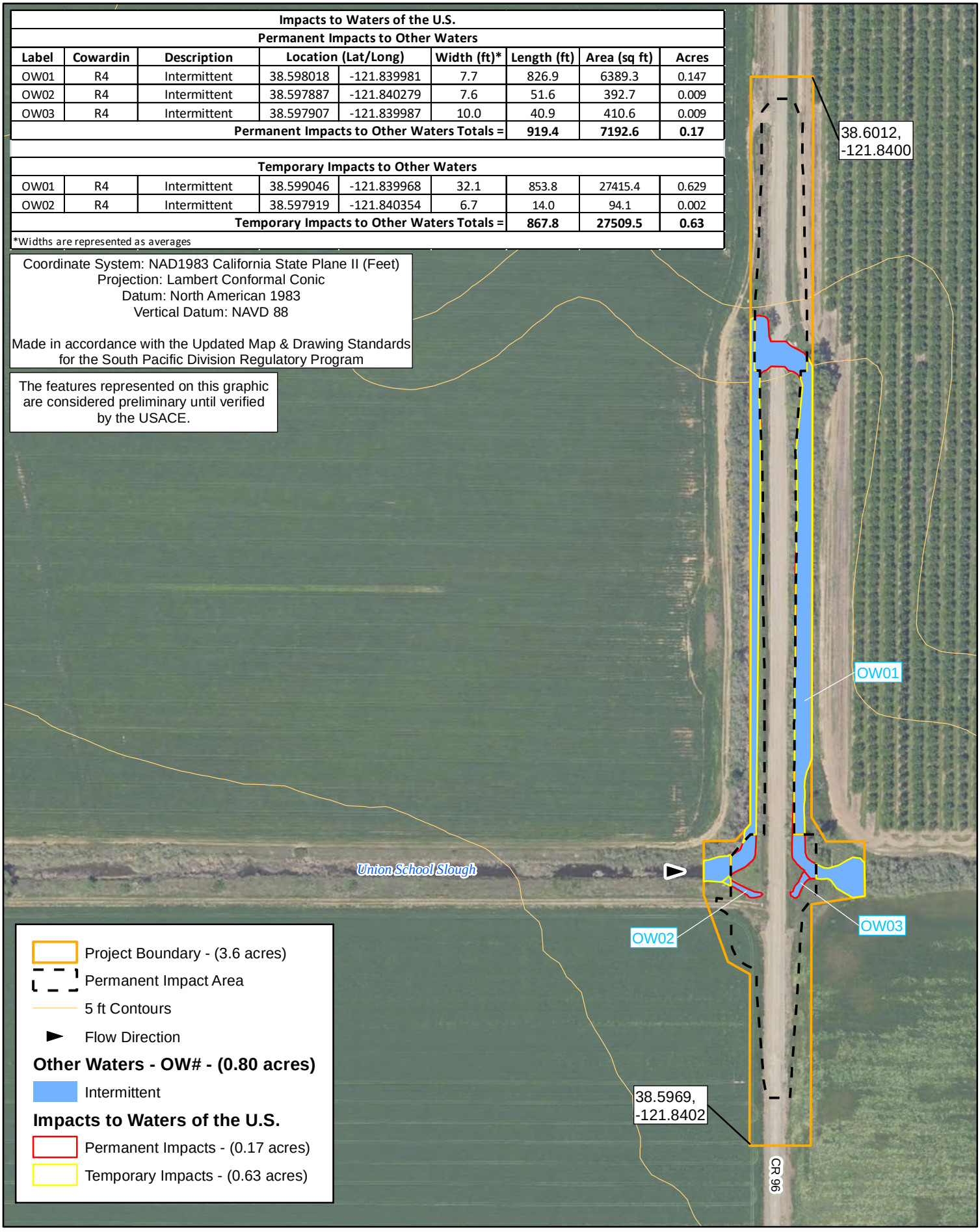
Impacts to Waters of the U.S.								
Permanent Impacts to Other Waters								
Label	**Cowardin**	**Description**	**Location (Lat/Long)**		**Width (ft)***	**Length (ft)**	**Area (sq ft)**	**Acres**
OW01	R4	Intermittent	38.598018	-121.839981	7.7	826.9	6389.3	0.147
OW02	R4	Intermittent	38.597887	-121.840279	7.6	51.6	392.7	0.009
OW03	R4	Intermittent	38.597907	-121.839987	10.0	40.9	410.6	0.009
Permanent Impacts to Other Waters Totals =						**919.4**	**7192.6**	**0.17**
Temporary Impacts to Other Waters								
OW01	R4	Intermittent	38.599046	-121.839968	32.1	853.8	27415.4	0.629
OW02	R4	Intermittent	38.597919	-121.840354	6.7	14.0	94.1	0.002
Temporary Impacts to Other Waters Totals =						**867.8**	**27509.5**	**0.63**

*Widths are represented as averages

Coordinate System: NAD1983 California State Plane II (Feet)
Projection: Lambert Conformal Conic
Datum: North American 1983
Vertical Datum: NAVD 88

Made in accordance with the Updated Map & Drawing Standards for the South Pacific Division Regulatory Program

The features represented on this graphic are considered preliminary until verified by the USACE.



NORTH

1:2,200 1 in = 183 ft

0 100 200 Feet

Data Sources: ESRI, Yolo County 04/13/2018

County Road 96 over Union School Slough
Bridge Replacement Project
Anticipated Impacts to Waters of the US
Figure 6

gallaway ENTERPRISES

GE: #17-013B Map Date: 12/06/2021

Survey Results

Union School Slough and Union School Slough Diversion Channel flow through the BSA.

Project Impacts

The proposed project is anticipated to permanently impact approximately 0.17 acres of Riverine land cover type within the Lacustrine and Riverine SNC during the installation of the new bridge and modifications to the roadside drainage system. Avoidance and minimization measures will be implemented to ensure effects are minimized.

Avoidance and Minimization Efforts

Avoidance and minimization measures (AMMs) for Sensitive Natural Communities are designated by the HCP/NCCP.

AMM1, Establish Buffers. Project proponents will design projects to avoid and minimize direct and indirect effects of permanent development on the sensitive natural communities and covered species habitat by providing buffers, as stipulated in the relevant sensitive natural community AMMs and covered species AMMs. On lands owned by the project proponent, the project proponent will establish a conservation easement, consistent with Yolo HCP/NCCP Section 6.4.1.3, Land Protection Mechanisms, to protect the buffer permanently if that land is being offered in lieu of development fees, as described in Yolo HCP/NCCP Section 4.2.2.6, Item 6: HCP/NCCP Fees or Equivalent Mitigation. The project proponent will design buffer zones adjacent to permanent residential development projects to control access by humans and pets (AMM2, Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces).

Where existing development is already within the stipulated buffer distance (i.e., existing uses prevent establishment of the full buffer), the development will not encroach farther into the space between the development and the sensitive natural community.

This AMM does not apply to seasonal construction buffers for covered species, which are detailed for each species in Yolo HCP/NCCP Section 4.3.4, Covered Species.

A lesser buffer than is stipulated in the AMMs may be approved by the Yolo Conservancy, USFWS, and CDFW if they determine that the sensitive natural community or covered species is avoided to an extent that is consistent with the project purpose (e.g., if the purpose of the project is to provide a stream crossing or replace a bridge, the project may encroach into the buffer and the natural community or species habitat to the extent that is necessary to fulfill the project purpose).

AMM9, Establish Buffers around Sensitive Natural Communities.
Lacustrine and riverine: Outside urban planning units, 100 feet from the top of banks (defined as the area within which water is contained in a channel). Within urban planning units, 25 feet from the top of the banks.

AMM10, Avoid and Minimize Effects on Wetlands and Waters.
Project proponents will comply with stormwater management plans that regulate development as part of compliance with regulations under National Pollutant Discharge Elimination System (NPDES) permit requirements. Covered activities that result in any fill of waters or wetlands will also comply with requirements under Section 404 of the Clean Water Act, State Water Resources Control Board (State Board), Fish and Game Code Section 1602, and Regional Board regulations. Other than requirements for buffers, minimizing project footprint, and species-specific measures for wetland-dependent covered species, this HCP/NCCP does not include specific best management practices for protecting wetlands and waters because they may conflict with measures required by the Corps, State Board, Regional Board, and CDFW.

Cumulative Impacts
There are no current or planned projects that will have cumulative effects on Riverine habitat within the project BSA.

Compensatory Mitigation
Impacts to 0.17 acres of Riverine habitat will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix E: Yolo HCP/NCCP Application Form 4**). Additionally, mitigation for impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps-approved mitigation bank or payment to a Corps-approved in-lieu fund.

Valley Foothill Riparian
The Valley Foothill Riparian land cover type is identified as a SNC by the Yolo HCP/NCCP. The Valley Foothill Riparian Sensitive Natural Community consists of a multilayered woodland plant community with a tree overstory and diverse shrub layer. Canopy species include mature valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), ash (*Fraxinus* sp.), and willows (*Salix* spp.). In a mature riparian forest, canopy heights reach approximately 100 feet, and canopy cover ranges from 20 to 80 percent. Blue elderberry (*Sambucus cerulea*), California rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), and blackberry (*Rubus* sp.) may form dense thickets in the understory of mature riparian forests. California grape (*Vitis californica*) creates a dense network of vines in the canopy. In areas that are disturbed by frequent flooding, fire, or human activity, this natural community often consists of smaller trees, more shrubs, and more invasive nonnative species.

The Valley Foothill Riparian Natural Community supports a diversity of plant and animal species and a variety of specialized plant and animal species that are restricted to this natural community for all or important parts of their life cycle. It provides nesting habitat and cover for many wildlife species. It also provides continuous corridors and isolated matrix stopover habitat that facilitates movement between habitat areas for many wildlife species. Riparian natural communities are the most productive among California's natural communities because they receive abundant water during the hot, dry summers of California's Mediterranean climate.

Some of the common wildlife species found in the Valley Foothill Riparian Sensitvie Natural Community include the red-shouldered hawk (*Buteo lineatus*), western scrub-jay, downy woodpecker (*Picoides pubescens*), American crow, bushtit (*Psaltriparus minimus*), oak titmouse (*Baeolophus inornatus*), and various rodents.

Survey Results

A narrow band of Valley Foothill Riparian associated with Union School Slough occurs within the BSA.

Project Impacts

Impacts to 0.22 acres of Valley Foothill Riparian land cover type within the Valley Foothill Riparian SNC will be mitigated for in accordance with the Yolo HCP/NCCP, and avoidance and minimization measures will be implemented to ensure effects are minimized.

Avoidance and Minimization Efforts

Avoidance and minimization measures (AMMs) for Sensitive Natural Communities are designated by the HCP/NCCP.

AMM8, Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas.

Project proponents should locate construction staging and other temporary work areas for covered activities in areas that will ultimately be a part of the permanent project development footprint. If construction staging and other temporary work areas must be located outside of permanent project footprints, they will be located either in areas that do not support habitat for covered species or are easily restored to prior or improved ecological functions (e.g., grassland and agricultural land). Construction staging and other temporary work areas located outside of project footprints will be sited in areas that avoid adverse effects on the valley foothill riparian land cover type.

Project proponents will follow specific AMMs for sensitive natural communities (Section 4.3.3, Sensitive Natural Communities) and covered species (Section 4.3.4, Covered Species) in temporary staging and work areas. For establishment of temporary work areas

outside of the project footprint, project proponents will conduct surveys to determine if any of the biological resources listed above are present.

Within one year following removal of land cover, project proponents will restore temporary work and staging areas to a condition equal to or greater than the covered species habitat function of the affected habitat.

Restoration of vegetation in temporary work and staging areas will use clean, native seed mixes approved by the Conservancy that are free of noxious plant species seeds.

AMM9, Establish Buffers around Sensitive Natural Communities

Valley Foothill Riparian: One hundred feet from canopy dripline. If avoidance is infeasible, a lesser buffer or encroachment into the sensitive natural community may be allowed if approved by the Conservancy and the wildlife agencies, based on the criteria listed in AMM1. Transportation or utility crossings may encroach into this sensitive natural community provided effects are minimized and all other applicable AMMs are followed.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on Valley Foothill Riparian natural community within the project BSA.

Compensatory Mitigation

Impacts to 0.22 acres of Valley Foothill Riparian habitat will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix E: Yolo HCP/NCCP Application Form 4**).

Special Status Plant Species

There is no suitable habitat for special-status plant species within the BSA. All of the plant species from the federal and state species lists and the Yolo HCP/NCCP do not have potential to occur within the BSA due to either the lack of suitable habitat elements or due to the extensive farming and agricultural activities occurring within the BSA. All of the historic CNDDB occurrences of special-status plant species within the vicinity of the BSA have been extirpated from the area due to agricultural practices and urban development. There are no further botanical surveys recommended.

Special Status Animal Species Occurrences

There is suitable habitat within the BSA for monarch butterfly, Swainson's hawk, white-tailed kite, tricolored blackbird, western pond turtle, northern harrier, pallid bat, and migratory birds and raptors protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC).

Monarch Butterfly

Monarch butterfly is currently a candidate species for federal listing under the ESA. Monarch butterflies exhibit long-distance migration and overwinter as adults at forested locations in Mexico and California. These overwintering sites provide protection from the elements and moderate temperatures, as well as nectar and clean water sources located nearby. Adult monarch butterflies feed on nectar from a wide variety of flowers. Reproduction is dependent on the presence of milkweed (*Asclepias* spp.), the sole food source for larvae. The primary threats to the monarch butterfly include widespread use of herbicides, senescence, and incompatible management of overwintering sites in California, urban development, and effects of climate change (85 FR 81813).

Survey Results

Milkweed is an essential habitat component for monarch butterflies and narrowleaf milkweed (*Asclepias fascicularis*) was observed within the BSA.

Project Impacts

There will be no impacts to monarch butterfly with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

- To avoid impacts to monarch butterflies, any vegetation removal and/or ground-disturbing activities should be conducted between November 1 through March 15 when monarch butterflies are not likely to be present.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on monarch butterfly within the project BSA.

Compensatory Mitigation

There will be no impacts to monarch butterfly and no compensatory mitigation will be required.

Swainson's Hawk

Swainson's hawks are threatened in the State of California and are a covered species under the Yolo HCP/NCCP. They are found throughout the western part of the United States and from Canada to Mexico. Swainson's hawks are fairly large, slender hawks with three different color morph displays. The most common morph in northern California is the dark morph which demonstrates black to dark brown under coverts and flight feathers. Suitable habitat includes open grasslands or agricultural fields that are adjacent to a riparian forest or oak woodland. Swainson's hawks primarily nest in riparian forests

next to open fields that provide foraging opportunities. Nesting and courtship begin in April. Current threats facing the Swainson's hawk are loss of nesting and foraging habitat, change in agricultural regimes, pesticides, poaching and human disturbances (CDFW 1994).

Survey Results

There are suitable nesting trees within the BSA and suitable foraging habitat adjacent to the BSA in the form of open agricultural fields. There were no active Swainson's hawk nests observed during the biological evaluation; however, based on the size of the trees within the BSA, there is potential for future nest establishment. Furthermore, there are CNDDB records of Swainson's hawks nesting within (#2111) and immediately adjacent (#718) to the BSA. None of these nesting occurrences are active (i.e., nesting activity observed within the last 5 years).

There is potential for Swainson's hawk to occur within the BSA due to the presence of suitable nesting and foraging habitat within and adjacent to the BSA, as well as past CNDDB records of nesting Swainson's hawk within and adjacent to the BSA.

Project Impacts

The project will impact 0.22 acres of Valley Foothill Riparian land cover type that could potentially serve as Swainson's hawk nesting habitat and 0.09 acres of Cultivated Lands land cover type that could potentially serve as Swainson's hawk foraging habitat as defined by the Yolo HCP/NCCP (**Figure 5**). The BSA contains Swainson's hawk foraging habitat and nest trees, which triggers Avoidance and Minimization Measures per the Yolo HCP/NCCP. There will be no impacts to Swainson's hawk individuals with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts for Swainson's Hawk and White-tailed Kite

The following are recommended avoidance and minimization measures for Swainson's hawk and white-tailed kite as specified by the Yolo HCP/NCCP:

AMM16, Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-tailed Kite. The project proponent will retain a qualified biologist to conduct planning-level surveys and identify any nesting habitat present within 1,320 feet of the project footprint.

Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If a construction project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, the project proponent will retain a qualified biologist to conduct

preconstruction surveys for active nests consistent, with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If project related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. Up to 20 Swainson's hawk nest trees (documented nesting within the last 5 years) may be removed during the permit term, but they must be removed when not occupied by Swainson's hawks.

For covered activities that involve pruning or removal of a potential Swainson's hawk or white-tailed kite nest tree, the project proponent will conduct preconstruction surveys that are consistent with the guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000). If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active**.**

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on Swainson's hawk or Swainson's hawk foraging habitat within the project BSA.

Compensatory Mitigation

Per the Yolo HCP/NCCP, there is 0.22 acres of Valley Foothill Riparian habitat that could potentially serve as Swainson's hawk nesting habitat and 0.09 acres of Cultivated Lands land cover type that could potentially serve as Swainson's hawk foraging habitat. Impacts to Swainson's hawk suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix E: Yolo HCP/NCCP Application Form 4**).

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) was listed as Fully Protected by the State of California in 1957. White-tailed kites are also protected under the MBTA (16 USC §703) and CFGC §3503 and are a covered species under the Yolo HCP/NCCP. They are yearlong residents in coastal and valley lowlands; frequently found near agricultural areas. White-tailed kites also inhabit herbaceous and open stages of most habitats in cismontane California. They forage in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands; however, they will rarely dive into tall cover. They use a variety of tree species to perch and roost, preferring to place their nests near tops of dense oak, willow, or other tree stands. Nests are usually located near an open foraging area that supports dense vole populations.

Survey Results

There are suitable nesting trees and foraging habitat within and adjacent to the BSA. There are large trees that line CR 96 that provide suitable nesting habitat. Croplands within and adjacent to the BSA provide nearby foraging habitat. There were no active white-tailed kite nests observed during the biological evaluation; however, based on the presence of suitable trees within the BSA, there is potential for future nest establishment. There are two (2) CNDDB occurrences indicating nesting within 5 miles of the BSA (#43, #44). These occurrences were recorded in 1993.

Project Impacts

The project will impact 0.22 acres of Valley Foothill Riparian land cover type that could potentially serve as Swainson's hawk nesting habitat and 0.09 acres of Cultivated Lands land cover type that could potentially serve as white-tailed kite foraging habitat as defined by the Yolo HCP/NCCP. The BSA contains white-tailed kite foraging habitat and potential nest trees, which triggers Avoidance and Minimization Measures per the Yolo HCP/NCCP. There will be no impacts to white-tailed kite individuals with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts for Swainson's Hawk and White-tailed Kite

AMM16, Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-tailed Kite. The project proponent will retain a qualified biologist to conduct planning-level surveys and identify any nesting habitat present within 1,320 feet of the project footprint.

Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

If a construction project cannot avoid potential nest trees (as determined by the qualified biologist) by 1,320 feet, the project proponent will retain a qualified biologist to conduct

preconstruction surveys for active nests consistent, with guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000), between March 15 and August 30, within 15 days prior to the beginning of the construction activity. The results of the survey will be submitted to the Conservancy and CDFW. If active nests are found during preconstruction surveys, a 1,320-foot initial temporary nest disturbance buffer shall be established. If project related activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then the qualified biologist will monitor the nest and will, along with the project proponent, consult with CDFW to determine the best course of action necessary to avoid nest abandonment or take of individuals. Work may be allowed only to proceed within the temporary nest disturbance buffer if Swainson's hawk or white-tailed kite are not exhibiting agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, and only with the agreement of CDFW and USFWS. The designated on-site biologist/monitor shall be on-site daily while construction-related activities are taking place within the 1,320-foot buffer and shall have the authority to stop work if raptors are exhibiting agitated behavior. Up to 20 Swainson's hawk nest trees (documented nesting within the last 5 years) may be removed during the permit term, but they must be removed when not occupied by Swainson's hawks.

For covered activities that involve pruning or removal of a potential Swainson's hawk or white-tailed kite nest tree, the project proponent will conduct preconstruction surveys that are consistent with the guidelines provided by the Swainson's Hawk Technical Advisory Committee (2000). If active nests are found during preconstruction surveys, no tree pruning or removal of the nest tree will occur during the period between March 1 and August 30 within 1,320 feet of an active nest, unless a qualified biologist determines that the young have fledged and the nest is no longer active.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on white-tailed kite or white-tailed kite habitat within the project BSA.

Compensatory Mitigation

Per the Yolo HCP/NCCP, there is 0.22 acres of Valley Foothill Riparian habitat that could potentially serve as Swainson's hawk nesting habitat and 0.09 acres of cultivated land that could potentially serve as white-tailed kite foraging habitat. Impacts to white-tailed kite suitable habitat land cover types will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix E: Yolo HCP/NCCP Application Form 4**).

Tricolored Blackbird

Tricolored blackbirds are listed as threatened under the CESA, are also protected under the MBTA (16 USC §703) and CFGC §3503, and are a covered species under the Yolo HCP/NCCP. They range from southern Oregon through the Central Valley, and coastal regions of California into the northern part of Mexico. Tricolored blackbirds are medium-size birds with black plumage and distinctive red marginal coverts, bordered by whitish feathers. Tricolored blackbirds nest in large colonies within agricultural fields, marshes with thick herbaceous vegetation, or in clusters of large blackberry bushes near a source of water and suitable foraging habitat. They are nomadic migrators, so documenting occurrence at any location does not mean that they will necessarily return to that area. Current threats facing tricolored blackbirds include colonial breeding in regard to small population size, habitat loss, overexploitation, predation, contaminants, extreme weather events, and drought, water availability, and climate change (CDFW 2018).

Survey Results

There are blackberry brambles associated with Union School Slough within the BSA, which may provide suitable nesting habitat for tricolored blackbird. Adjacent agricultural lands that occur within and adjacent to the BSA may also provide suitable foraging habitat. There are four (4) CNDDB occurrences (#328, #404, #488, #997) within a 5-mile radius of the BSA. The closest occurrence (#997) is located 1 mile west of the BSA, where a nesting colony was last observed in 1992.

There is potential for tricolored blackbird to occur within the BSA due to the presence of suitable nesting habitat within the BSA, as well as the presence of suitable foraging habitat within and adjacent to the BSA. No tricolored blackbirds or tricolored blackbird colonies were observed during protocol level surveys.

Project Impacts

Per the Yolo HCP/NCCP, the does not contain designated land cover types that are associated with tricolored blackbird; however, the BSA contains suitable tricolored blackbird nesting and foraging habitat, which triggers Avoidance and Minimization Measures per the Yolo HCP/NCCP. There will be no impacts to tricolored blackbird individuals with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

AMM21, Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird. The project proponent will retain a qualified biologist to identify and quantify (in acres) tricolored blackbird nesting and foraging habitat (as defined in Yolo HCP/NCCP Appendix A, *Covered Species Accounts*) within 1,300 feet of the footprint of the covered activity. If a 1,300-foot buffer from nesting habitat cannot be maintained, the qualified biologist will

check records maintained by the Conservancy (which will include CNDDB data, and data from the tricolored blackbird portal) to determine if tricolored blackbird nesting colonies have been active in or within 1,300 feet of the project footprint during the previous 5 years. If there are no records of nesting tricolored blackbirds on the site, the qualified biologist will conduct visual surveys to determine if an active colony is present, during the period from March 1 to July 30, consistent with protocol described by Kelsey (2008).

Operations and maintenance activities or other temporary activities that do not remove nesting habitat and occur outside the nesting season (March 1 to July 30) do not need to conduct planning or construction surveys or implement any additional avoidance measures.

If an active tricolored blackbird colony is present or has been present within the last five years within the planning-level survey area, the project proponent will design the project to avoid adverse effects within 1,300 feet of the colony site(s), unless a shorter distance is approved by the Conservancy, USFWS, and CDFW. If a shorter distance is approved, the project proponent will still maintain a 1,300-foot buffer around active nesting colonies during the nesting season but may apply the approved lesser distance outside the nesting season. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on tricolored blackbird habitat within the project BSA.

Compensatory Mitigation

Per the Yolo HCP/NCCP, the does not contain designated land cover types that are associated with tricolored blackbird; however, impacts to all land cover types will be mitigated for in accordance with the Yolo HCP/NCCP (**Appendix E: Yolo HCP/NCCP Application Form 4**).

Western Pond Turtle

The western pond turtle is a Species of Special Concern (SSC) in California and is a covered species under the Yolo HCP/NCCP. Western pond turtles are drab, darkish colored turtles with a yellowish to cream colored head. They range from the Washington Puget Sound to the California Sacramento Valley. Suitable aquatic habitats include slow moving to stagnant water, such as backwaters and ponded areas of rivers and creeks, semi-permanent to permanent ponds, and irrigation ditches. Preferred habitats include features such as hydrophytic vegetation for foraging and cover and basking areas to regulate body temperature. In early spring through early summer, female turtles begin to move over land in search for nesting sites. Eggs are laid on the banks of slow-moving

streams. The female digs a hole approximately four inches deep and lays up to eleven eggs. Afterwards the eggs are covered with sediment and are left to incubate under the warm soils. Eggs are typically laid between March and August (Zeiner et al. 1990). Current threats facing the western pond turtle include loss of suitable aquatic habitats due to rapid changes in water regimes and removal of hydrophytic vegetation.

Survey Results

During the June 23, 2020 field visit Gallaway Enterprises observed a western pond turtle within the BSA. There is suitable aquatic and nesting habitat for western pond turtle present within the BSA.

Project Impacts

The project will impact 0.17 acres of Riverine SNC that could potentially serve as western pond turtle habitat (**Figure 5: Impacts to Land Cover Types**). The BSA contains Riverine land cover type, which triggers avoidance and minimization Measures per the Yolo HCP/NCCP that adequately protect western pond turtles. There will be no impacts to western pond turtle individuals with the implementation of avoidance and minimization measures that protect Riverine SNC and western pond turtles.

Avoidance and Minimization Efforts

The following are recommended avoidance and minimization measures for western pond turtle as specified by the Yolo HCP/NCCP:

AMM14, Minimize Take and Adverse Effects on Habitat of Western Pond Turtle. There are no specific design requirements for western pond turtle habitat, however, project proponents must follow design requirements for the valley foothill riparian and lacustrine and riverine natural communities described in AMMs 9 and 10, which require a 100-foot (minimum) permanent buffer zone from the canopy drip-line (the farthest edge on the ground where water will drip from the tree canopy, based on the outer boundary of the tree canopy). If modeled upland habitat will be impacted, a qualified biologist must be present and will assess the likelihood of western pond turtle nests occurring in the disturbance area (based on sun exposure, soil conditions, and other species habitat requirements).

If a qualified biologist determines that there is a moderate to high likelihood of western pond turtle nests within the disturbance area, the qualified biologist will monitor all initial ground disturbing activity for nests that may be unearthed during the disturbance and will move out of harm's way any turtles or hatchlings found.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on western pond turtle within the project BSA.

Compensatory Mitigation

The project is anticipated to impact 0.17 acres of Riverine SNC that could potentially serve as western pond turtle aquatic habitat. Impacts to western pond turtle habitat will be mitigated by paying fees for impacts to land cover types (**Appendix D: Yolo HCP/NCCP Application Form 4**).

Northern Harrier

The northern harrier is a SSC in the state of California. They range throughout California in low elevation areas such the Central Valley, desert and coastal regions. Northern harriers are dimorphic. Males have grey tones, while females and juveniles display a rusty brown coloring. Suitable habitat for foraging and breeding include fresh water and coastal marshes, annual and perennial grasslands, pastures and low growing crops, sagebrush scrub, and desert sinks. Northern harriers nest on the ground among tall grasses or shrubs. Current threats facing northern harriers include loss of foraging and nesting habitat, small mammal control, and human disturbances (Shuford and Gardali 2008).

Survey Results

There is suitable foraging and nesting habitat present within and adjacent to the BSA. There is one (1) CNDDB occurrence (#51) located approximately 4.7 miles east of the BSA, where a pair of northern harriers was observed nesting in a wheat field in 2015. There are no other CNDDB occurrences within 30 miles of the BSA.

Project Impacts

There will be no impacts to northern harrier with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

- Project activities and vegetation removal within the BSA shall be initiated outside of the bird nesting season (February 1 – August 31).
- If project activities and vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days prior to the initiation of project activities.
    - If an active northern harrier nest (i.e., with egg[s] or young) is observed within 250 feet of the BSA during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW.

Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on northern harrier within the project BSA.

Compensatory Mitigation

As there will be no impacts to northern harrier, no compensatory mitigation will be required.

Pallid Bat

Pallid bat is designated as a CDFW SSC. Pallid bats roost alone, in small groups (2 to 20 bats), or gregariously (hundreds of individuals). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied, as well as vacant, buildings. Roosts generally have unobstructed entrances and exits, are high above the ground, warm, and inaccessible to terrestrial predators. However, this species has also been found roosting on or near the ground under burlap sacks, stone piles, rags, and baseboards. Lewis 1996 found that pallid bats have low roost fidelity and both pregnant and lactating pallid bats changed roosts an average of once every 1.4 days throughout the summer. Overwintering roosts have relatively cool, stable temperatures and are located in protected structures beneath the forest canopy or on the ground, out of direct sunlight. In other parts of the species' range, males and females have been found hibernating alone or in small groups, wedged deeply into narrow fissures in mines, caves, and buildings. At low latitudes, outdoor winter activity has been reported at temperatures between –5 and 10 °C (WBWG 2021).

Survey Results

Some mature trees within the BSA could potentially provide suitable roosting habitat for pallid bat. Evidence of roosting (i.e., urine stains and guano) was not observed during the habitat assessment.

There are two (2) CNDDB occurrences of pallid bat within 10 miles of the BSA (#312, #313); however, these occurrences are from 1964 and 1957 and are mapped only to the nearby cities where they were found, with no further occurrence information. There are no other CNDDB occurrences within 20 miles of the BSA.

Project Impacts

There will be no impacts to pallid bat with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

- If mature trees are proposed for removal, they should be removed and/or fallen between September 16 – March 15 outside of the bat maternity season. Trees should be removed at dusk to minimize impacts to roosting bats.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on pallid bat within the project BSA.

Compensatory Mitigation

As there will be no impacts to pallid bat, no compensatory mitigation will be required.

Migratory Birds and Raptors

Nesting birds are protected under the MBTA (16 USC 703) and the CFGC (3503). The MBTA (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

The CFGC (§3503.5) states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFGC (§3503) also 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".

Survey Results

There is suitable nesting habitat within the BSA for a variety of migratory birds and raptors protected under the MBTA and CFGC.

Project Impacts

There will be no impacts to migratory birds and raptors with the implementation of avoidance and minimization measures.

Avoidance and Minimization Efforts

- Project activities and vegetation removal within the BSA shall be initiated outside of the bird nesting season (February 1 – August 31).
- If project activities and vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days prior to the initiation of project activities.
    - If an active avian nest (i.e., with egg[s] or young) is observed within 250 feet of the BSA during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the lead agency weekly.

Cumulative Impacts

There are no current or planned projects that will have cumulative effects on migratory birds and raptors within the project BSA.

Compensatory Mitigation

As there will be no impacts to nesting migratory birds and raptors, no compensatory mitigation will be required.

Chapter 5 – Conclusions and Regulatory Determinations

Federal Endangered Species Act Consultation Summary

The USFWS and NMFS were consulted on August 5, 2020 for lists of endangered, threatened, sensitive, and rare species and their habitats with potential to occur within the BSA. The lists were later referenced to determine appropriate biological and botanical surveys and potential species occurrence. The lists were updated and reviewed on April 28, 2022 and again on September 14, 2022. The project will have no effect on western yellow-billed cuckoo, giant garter snake, California tiger salamander, delta smelt, monarch butterfly, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, Central Valley spring-run Chinook salmon, Sacramento River winter-run Chinook salmon, or California Central Valley steelhead.

Essential Fish Habitat Consultation Summary

As there are no perennial drainages that could support anadromous fish species, there is no Essential Fish Habitat present within the BSA.

California Endangered Species Act Consultation Summary

The CDFW and CNPS were consulted on August 5, 2020 for lists of State endangered, threatened, sensitive, and rare species and their habitats with potential to occur within the BSA. The list was later referenced to determine appropriate biological and botanical surveys and potential species occurrence. The lists were updated and reviewed on April 28, 2022 and again on September 14, 2022.

Wetlands and Other Waters Coordination Summary

A delineation of WOTUS was conducted by Gallaway Enterprises on June 23, 2020 and October 20, 2021. The results of the delineation will be summarized in a Draft Delineation of Waters of the United States report, which will be submitted to the Corps as part of the permitting process (**Appendix D**).

There will be 0.17 acres of permanent impacts to Union School Slough and Union Slough Diversion Channel, which are jurisdictional intermittent drainages. As there are jurisdictional waters that will be impacted by project activities, a CDFW §1602 Streambed Alteration Agreement, RWQCB §401 Water Quality Certification permit, and a Corps Nationwide §404 14 permit will be required. The project will result in 0.17 acres of permanent impacts to jurisdictional WOTUS (**Figure 6: Anticipated Impacts to Waters of the US**). Mitigation for impacts to jurisdictional WOTUS will be addressed through the

purchase of credits at a Corps approved mitigation bank or payment to a Corps approved in-lieu fund.

Invasive Species

Many non-native plant species occur in California's natural lands. Some of these non-natives have become naturalized and are relatively benign; however, there are a number of these non-natives that are considered highly invasive. The non-native plants that are considered invasive are tracked and ranked by their invasiveness by the United State Department of Agricultural (USDA) Natural Resource Conservation Service (NRCS) and the California Invasive Plant Council (Cal-IPC). Within the BSA, 20 invasive plant species were observed that are included on the Cal-IPC invasive and noxious weed plant list, with 12 species listed as having a moderate or higher degree of invasiveness in California (**Table 2**).

Table 2. Invasive Plant Species Identified within the BSA

Scientific Name	Common Name	Cal-IPC Rating
Avena barbata	Wild oats	Moderate
Bromus diandrus	Rip-gut brome	Moderate
Bromus hordeaceus	Soft chess	Limited
Bromus madritensis ssp. *rubens*	Red brome	High
Carduus pycnocephalus	Italian thistle	Moderate
Centaurea solstitialis	Yellow star thistle	High
Erodium cicutarum	Cut-leaf filaree	Limited
Festuca perennis	Rye-grass	Moderate
Foeniculum vulgare	Sweet fennel	Moderate
Helminthotheca echioides	Bristly ox-tongue	Limited
Hordeum murinum	Wall hare barley	Moderate
Lepidium latifolium	Tall whitetop	High
Ludwigia peploides	Marsh purslane	High
Olea europaea	Olive	Limited
Phalaris aquatica	Harding grass	Moderate
Plantago lanceolata	English plantain	Limited
Polypogon monspeliensis	Rabbitsfoot grass	Limited
Raphanus sativus	Radish	Limited
Rubus armeniacus	Himalayan blackberry	High
Rumex crispus	Curly dock	Limited

It is recommended that general best management practices (BMPs) be implemented prior and during construction activities as recommended by the Cal-IPC's *Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors* (2012). The following are recommended BMPs by the Cal-IPC:

- Provide prevention training to staff and contractors prior to starting work.
- Schedule activities to minimize potential for introduction and spread of invasive plants.
- Designate specific areas for cleaning tools, vehicles, equipment, clothing, and gear.
- Plan travel routes to avoid areas infested with invasive plants.
- Clean tools, equipment, vehicles, and animals before transporting materials and before entering and leaving worksites.
- Clean clothing, footwear, and gear before leaving infested areas.
- Prepare worksites to limit the introduction and spread of invasive plants.
- Minimize soil and vegetation disturbance.

Chapter 6 – References

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. The Jepson Manual: vascular plants of California, second edition. University of California Press, Berkeley.

Belli, J.P. 2015. Movements, Habitat Use, and Demography of Western Pond Turtles in an Intermittent Central California Stream. Master's Theses. 4624. DOI: http://doi.org/10.31979/etd.B9sq-ak47, https://scholarworks.sjsu.edu/etd_theses/4624.

California Department of Fish and Wildlife (CDFW). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks. CDFW. Sacramento, CA.

CDFW. 2018. Report to the Fish and Game Commission: A Status Review of the Tricolored Blackbird (*Agelaius tricolor*) in California.

Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors. Cal-IPC Publication 2012-01. California Invasive Plant Council, Berkeley, CA. Available at www.cal-ipc.org.

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 28 April 2022].

California Natural Diversity Database (CNDDB). 2022. Rarefind 5. California Department of Fish and Wildlife. Sacramento, California.

Holland, D. C. 1994. Final report on the western pond turtle project. Report, prepared for Wildlife Diversity Division, Oregon Department of Fish and Wildlife, Portland.

Lewis, S.E. 1996. Low roost-site fidelity in pallid bats: associated factors and effect on group stability. Behavioral Ecology and Sociobiology. 39(5): 335-344.

Mayer, K.E and Laudenslayer, W.F. 1988. A guide to Wildlife Habitats of California. California Department of Forestry and Fire Protection. Sacramento, California.

Reese, D.A. and Welsh, H.H. 1997. Use of Terrestrial Habitat by Western Pond Turtles, *Clemmys marmorata*: Implications for Management. USDA Forest Service. PSW Redwood Science Laboratory, Arcata, California.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Tesky, Julie L. 1994. *Buteo swainsoni*. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). Available: www.fs.fed.us/database/feis/animals/bird/busw/all.html

US Fish and Wildlife Service. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon.

Western Bat Working Group. 2021. Western Bat Species Accounts. Available: http://wbwg.org/western-bat-species [September 1, 2021].

Western Regional Climate Center, Desert Research Institute. 2021. http://www.wrcc.dri.edu. Local Climate Summary for the Davis 2 WSW Exp Farm, California (042294) NOAA Cooperative Station.

Zeiner, D.C., W.F.Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. California's Wildlife. Vol. I-III. California Department of Fish and Game, Sacramento, California.

FEDERAL REGISTER

85 FR 81813. Endangered and Threatened Wildlife and Plants; 12-Month Finding for the Monarch Butterfly. Fish and Wildlife Service, Interior. (December 17, 2020) Volume 85.

Appendix A – Species Lists

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: September 13, 2022
Project Code: 2022-0085054
Project Name: CR96 over Union School Slough Bridge Replacement Project

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 ECOS-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 ECOS-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 in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

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, intentional or unintentional, 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/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. 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/birds/bird-enthusiasts/threats-to-birds.php.

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/birds/policies-and-regulations/executive-orders/e0-13186.php.

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:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2022-0085054
Project Name: CR96 over Union School Slough Bridge Replacement Project
Project Type: Bridge - Replacement
Project Description: Replacement of and existing bridge on a new alignment over an agricultural slough. Approximately 3 acres.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.59855735,-121.8400787584638,14z



Counties: Yolo County, California

Endangered Species Act Species

There is a total of 7 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
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	County of Yolo
Name:	kevin Sevier
Address:	117 Meyers Street
Address Line 2:	Suite 120
City:	Chico
State:	CA
Zip:	95928
Email	kevin@gallawayenterprises.com
Phone:	5303329909

Lead Agency Contact Information

Lead Agency: Community Planning and Development

Kevin Sevier

From: Kevin Sevier
Sent: Wednesday, September 14, 2022 10:33 AM
To: 'nmfs.wcrca.specieslist@noaa.gov'
Subject: County Rd 96 over Union School Slough Bridge Replacement Project - BRLO-5922(103)

County Rd 96 over Union School Slough Bridge Replacement Project
Federal Project Number BRLO-5922 (103)

Quad Name **Merritt**
Quad Number **38121-E7**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) - **X**
SRWR Chinook Salmon ESU (E) - **X**
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) - **X**
Eulachon (T) -
sDPS Green Sturgeon (T) -

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat -

ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

MMPA Species (See list at left)

ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office
562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

California Department of Transportation (Caltrans) Division of Local Assistance
District 3

Kevin Sevier
Gallaway Enterprises
530.332.9909

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Merritt (3812157))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
Antioch multilid wasp *Myrmosula pacifica*	IIHYM15010	None	None	GH	SH	
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S3	SSC
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G2	S2	1B.2
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	None	G2	S1S2	
Ferris' milk-vetch *Astragalus tener var. ferrisiae*	PDFAB0F8R3	None	None	G2T1	S1	1B.1
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G3G4	S4	
Keck's checkerbloom *Sidalcea keckii*	PDMAL110D0	Endangered	None	G2	S2	1B.1
northern harrier *Circus hudsonius*	ABNKC11011	None	None	G5	S3	SSC
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G4	S3	SSC
Sacramento Valley tiger beetle *Cicindela hirticollis abrupta*	IICOL02106	None	None	G5TH	SH	
silver-haired bat *Lasionycteris noctivagans*	AMACC02010	None	None	G3G4	S3S4	
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2T3	S3	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
western bumble bee *Bombus occidentalis*	IIHYM24250	None	None	G2G3	S1	
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G2G3	S3	SSC
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP

Record Count: 25

California Native Plant Society

Search Results

5 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3812157**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Astragalus tener var. *ferrisiae*	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	None	None	G2T1	S1	1B.1
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1

Showing 1 to 5 of 5 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 14 September 2022].

Appendix B – Observed Species List

Plant Species Observed within the Union School Slough BSA on June 23, 2020	
Scientific Name	**Common Name**
Amsinkia sp.	Common fiddleneck
Anthemis cotula	Mayweed
Artemisia douglasiana	California mugwort
Asclepias fascicularis	Narrow leaf milkweed
Avena barbata	Wild oats
Baccharis pilularis	Coyote brush
Bromus catharticus	Rescue grass
Bromus diandrus	Rip-gut brome
Bromus hordeaceus	Soft chess
Bromus madritensis ssp. rubens	Red brome
Carduus pycnocephalus	Italian thistle
Carex barbarae	Valley sedge
Centaurea solstitialis	Yellow star thistle
Cercis occidentalis	Western redbud
Cicuta sp.	Water hemlock
Convulvulus arvensis	Bindweed
Cyperus eragrostis	Tall nutsedge
Epilobium brachycarpum	Tall willowherb
Erigeron bonariensis	South American horseweed
Erodium cicutarum	Cut-leaf filaree
Festuca perennis	Rye-grass
Foeniculum vulgare	Sweet fennel
Helminthotheca echioides	Bristly ox-tongue
Hordeum murinum	Wall hare barley
Juglans hindsii	Black walnut
Kickxia elatine	Sharp-leaved fluellin
Lactuca serriola	Prickly lettuce
Lemna sp.	Duckweed
Lepidium latifolium	Tall whitetop
Ludwigia peploides	Marsh purslane
Lysimachia arvensis	Scarlet pimpernel
Malvella leprosa	Alkali mallow
Olea europaea	Olive
Phalaris aquatica	Harding grass
Plantago lanceolata	English plantain
Polygonum aviculare	Prostrate knotweed
Polypogon monspeliensis	Rabbitsfoot grass
Prunus dulcis	Almond
Quercus lobata	Valley oak
Quercus wislizeni	Live oak
Raphanus sativus	Radish
Rosa californica	California wild rose
Rubus armeniacus	Himalayan blackberry

Scientific Name	**Common Name**
Rumex crispus	Curly dock
Salix exigua	Sandbar willow
Salix lasiandra	Pacific willow
Schoenoplectus acutus	Hardstem bulrush
Sisymbrium officinale	Hedge mustard
Sonchus asper	Sow thistle
Sorghum halepense	Johnsongrass
Stipa pulchra	Purple needlegrass
Triticum aestivum	Bread wheat
Typha latifolia	Cattails
Xanthium strumarium	Rough cocklebur

Appendix C – Project Site Photos

Taken June 23, 2020



Overview of the northern boundary of the BSA. Taken facing north.



Overview of the southern boundary of the BSA. Taken facing south.



Overview of County Road 96 and Scrub Riparian habitat within the BSA. Taken facing north.



Overview of Union School Slough Bridge. Taken facing south.



Overview of a portion of Union School Slough that flows on the western side of County Road 96 within the BSA.



Overview of a patch of freshwater emergent vegetation within Union School Slough in the BSA. Taken facing west.



Overview of the underside of the Union School Slough Bridge. Taken facing east.

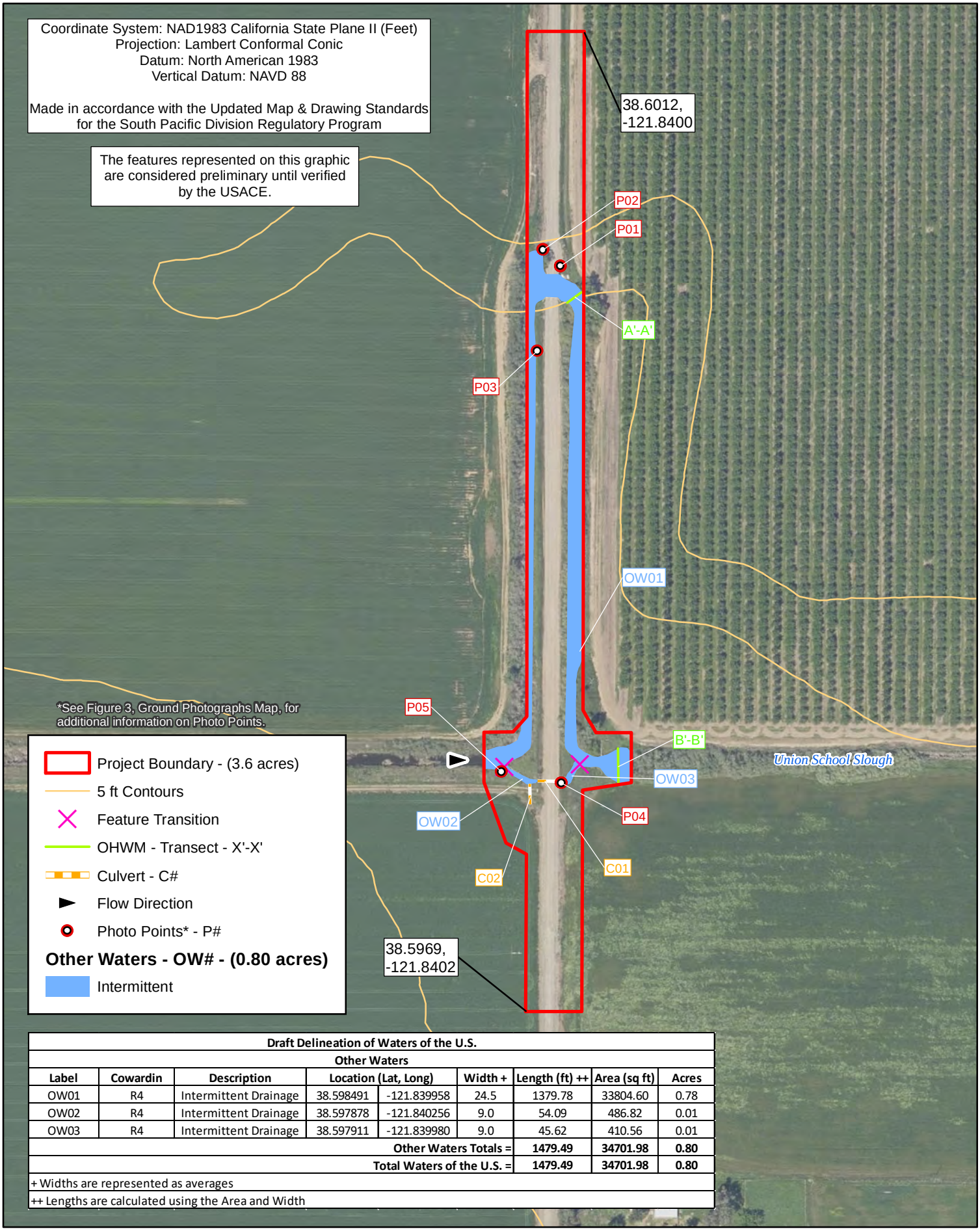


Overview of the under side of the Union School Slough Bridge where evidence of past cliff swallow (*Petrochelidon pyrrhonota*) nesting were observed during the June 23, 2020 field visit. Taken facing north.



Overview of the Union School Slough diversion channel.

Appendix D – Draft Delineation of Waters of the US Map



Draft Delineation of Waters of the U.S.

Other Waters

Label	Cowardin	Description	Location (Lat, Long)		Width +	Length (ft) ++	Area (sq ft)	Acres
OW01	R4	Intermittent Drainage	38.598491	-121.839958	24.5	1379.78	33804.60	0.78
OW02	R4	Intermittent Drainage	38.597878	-121.840256	9.0	54.09	486.82	0.01
OW03	R4	Intermittent Drainage	38.597911	-121.839980	9.0	45.62	410.56	0.01
				Other Waters Totals =		**1479.49**	**34701.98**	**0.80**
				Total Waters of the U.S. =		**1479.49**	**34701.98**	**0.80**

+ Widths are represented as averages

++ Lengths are calculated using the Area and Width

1:2,400 1 in = 200 ft

0 100 200 Feet

NORTH

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Draft Delineation of Waters of the U.S.
Figure 4

Delineation by: E. Gregg
Map by: A. McLaughlin

gallaway ENTERPRISES

GE: #17-013B Map Date: 11/09/2021

Appendix E – Yolo HCP/NCCP Application Form 4

REPORTING FORM



PURPOSE

Complete this form to report coverage under the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (Yolo HCP/NCCP) as a Permittee. Chapter 4 of the Permitting Guide, available on the Yolo Habitat Conservancy's ("Conservancy") web site under the "Permitting" tab, provides instructions for form completion. The form requirements are minimum requirements; the Conservancy may request more information to clarify or complete the form. Submittal of a preliminary reporting form to the Conservancy is encouraged to ensure timely and accurate completion. If an application fee is required (see Screening Form, Box Y), the Permittee should submit this fee to the Conservancy early in the application process. The Permitting Guide and additional resources are available on the Conservancy's web site under the "Permitting" tab. The Conservancy automatically adjusts mitigation fees on or around March 15th of each year to reflect current land prices and other expenses. If an applicant does not complete their application and issue payment prior to the fee update, the new fees will apply. The applicant may, however, pay mitigation fees early at the previous year's rate consistent with the Conservancy's Early Payment of Migitation Fees Policy.

Regional-scale data related land cover, sensitive natural communities, and covered species habitats in Yolo is made available through the Yolo HCP/NCCP GeoMapper online mapping tool. The GeoMapper tool is accessible via the Resources tab of the Yolo Habitat Conservancy website identified below, although it is intended for informational purposes only. All HCP/NCCP permit applicants must have site-specific planning level surveys by a qualified biologist to determine actual land cover and sensitive natural communities and species habitats in and around a project site to determine the correct amount of land cover mitigation fees and project specific Avoidance and Minimization Measures (AMMs).

https://www.yolohabitatconservancy.org/resources

BOX A: Preliminary/Final Application Form	
Check one box.	
☒ Preliminary Form (signature not required)	☐ Final Form (complete form and signature required)

BOX B: APPLICATION DETAILS	
1 Project name	County Road 96 over Union School Slough Bridge Replacement Project
2 Submittal date	
3 Member agency internal tracking number	Federal Project No. BRLO-5922(103)
4 YHC internal tracking #	
5 Member agency	☒ Yolo County ☐ City of Davis ☐ City of Woodland ☐ City of West Sacramento ☐ City of Winters

BOX C: MEMBER AGENCY CONTACT INFORMATION			
1 Member agency			
1.a Member agency name	Yolo County Community Services Department		
1.b Mailing address	292 West beamer Street, Woodland, CA 95695		
1.c Phone (home/office)	(530) 666-8842	1.d Phone (Cellular)	
1.e Email	mark.christison@yolocounty.org		

BOX D: PROJECT INFORMATION		
1 Project address and location	CR 96 Bridge over Union School Slough - approximately 23351-23155 Co Rd 96, Woodland, CA 95695	
2 Assessor parcel number(s) APNs and acreage by parcel (not applicable for linear projects)	n/a	
3 Total acreage of parcel(s) (not applicable for linear projects)	n/a	
4 Using the GeoMapper's Spatially Defined Planning Unit Map, find your proposed project site. Check the Planning Unit in which your project lies.	**Yolo County Planning Units** ☐ 1 – Little Blue Ridge ☐ 2 – North Blue Ridge ☐ 3 – South Blue Ridge ☐ 4 – Capay Hills ☐ 5 – Dunnigan Hills ☐ 6 – Upper Cache Creek ☐ 7 – Lower Cache Creek ☐ 8 – Upper Putah Creek ☐ 9 – Lower Putah Creek ☐ 10 – Hungry Hollow Basin ☒ 11 – Willow Slough Basin	☐ 12 – Colusa Basin ☐ 13 – Colusa Basin Plains ☐ 14 – North Yolo Basin ☐ 15 – South Yolo Basin ☐ 16 – Yolo Basin Plains ☐ 17 – North Yolo Bypass ☐ 18 – South Yolo Bypass **Cities** ☐ 19 – City of Woodland ☐ 20 – City of Davis ☐ 21 – City of West Sacramento ☐ 22 – City of Winters

5 ☒ Provide a project description. Please refer to the Permitting Guide for details to include in the project description. Label as **Attachment 1** or indicate in this box the document name and page numbers of the report where this information can be found, and attach report or relevant excerpts**.**

6 ☒ Provide a legible vicinity map of the project site and surrounding area (PDF). Refer to the Permitting Guide for more information about details to include on the vicinity map. Label as **Attachment 2.** Rather than a separate PDF, applicant may include the site plan in the planning level survey report or other report.

If so, provide report name and page number here, and attach report or relevant excerpts**:**

7 ☒ Provide a site plan that shows the proposed project site and surrounding area. (PDF and CAD or GIS-compatible). Refer to the Permitting Guide (Page 7-2) for more information about details to include in the site plan. Label as **Attachment 3.** Rather than a separate PDF, applicant may include the site plan in the planning level survey report or other report. if so, provide report name and page number here, and attach report or relevant excerpt**:**

BOX E: NATURAL COMMUNITY AND LAND COVER IMPACTS AND MITIGATION FEES

Complete Items 1-26 below, referring to the Permitting Guide for calculation methods.

- Total fee amount for each land cover type will be auto-generated based on acreage amount (and for recurring temporary impacts, number of years out of the 50-year permit term the impact will occur).
- Temporary impact fee formula = land cover fee x area of temporary effect in acres x (F/50) where F = the number of years in which the activity will occur during the rest of the permit term (until 2069).
- Must include required land cover fee buffer area associated with the project. This is generally 10 feet for linear projects (e.g. roads, utility corridors, pipelines) and 50 feet for all other projects. See Chapter 4 of the Permitting Guide under Box E instructions regarding the option of lumping land cover categories for the fee buffer calculations for linear projects.
- Fees will be updated annually, typically mid-March.
- Wetland fees are in addition to land cover fees. For project proponents transplanting elderberry shrubs from a non-riparian habitat, a per acre maintenance fee of $18,281 is assessed. The maintenance fee is subject to the annual increase in fees pursuant to existing methodology.

Submit a planning-level survey, including a field-verified land cover map and the name and qualifications of the qualified biologist(s) responsible for preparation of the report. Label as **Attachment 4.** Mapped areas shown on the site plan (**Attachment 3** in Box D, Item 7) should be consistent with the acreages entered below. Include photographs of temporary impact areas. Label photos as **Attachment 5**.

Land Cover Types	Land Cover Permanently Impacted by Project (in acres)			Land Cover Temporarily Impacted by Project (in acres)	Years of Recurring Temporary Impact	Fees (Auto Generated)				
	Permanent Impact (acres)	Fee Buffer (acres)	TOTAL			Land Cover Fee (per acre)	Wetland Fee (per acre)	Permanent Impact, Land Cover Fee	Temporary Impact, Land Cover Fee	Wetland Fee
1 ☐ Developed (including ruderal with no covered species habitat)[a]	0.0	0.0	0.0	0.0	0	$0	$0	$ 0.00	$ 0.00	$ 0.00
2 ☐ Ruderal with covered species habitat[a]	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
3 ■ Barren, No Covered Species Habitat	1.0	0.2	1.2	0.0	0	$0	$0	$ 0.00	$ 0.00	$ 0.00
4 ☐ Barren, With Covered Species Habitat	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
5 ☐ Vegetated Corridor with Covered Species Habitat	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
6 ☐ Grassland (all types)	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
7 ☐ Alkali Prairie	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
8 ☐ Fresh Emergent Wetland (all types)	0.00	0.0	0.00	0.00	0	$15,169	$77,366	$ 0.00	$ 0.00	$ 0.00
9 ■ Valley Foothill Riparian	0.22	0.04	0.26	0.00	0	$15,169	$63,681	$ 3,943.94	$ 0.00	$ 16,557.06

Land Cover Types	Land Cover Permanently Impacted by Project (in acres)			Land Cover Temporarily Impacted by Project (in acres)	Years of Recurring Temporary Impact	Fees (Auto Generated)				
	Permanent Impact (acres)	Fee Buffer (acres)	TOTAL			Land Cover Fee (per acre)	Wetland Fee (per acre)	Permanent Impact, Land Cover Fee	Temporary Impact, Land Cover Fee	Wetland Fee
10 ■ Lacustrine and Riverine	0.17	0.24	0.41	0.00	0	$15,169	$62,048	$ 6,219.29	$ 0.00	$ 15,439.68
11 ■ Cultivated Land (all types)	0.09	0.1	0.2	0.0	0	$15,169	$0	$ 2,427.04	$ 0.00	$ 0.00
12 ☐ Citrus/Subtropical	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
13 ■ Deciduous Fruits/Nuts	0.1	0.1	0.1	0.0	0	$15,169	$0	$ 1,820.28	$ 0.00	$ 0.00
14 ☐ Vineyards	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
15 ☐ Turf Farm	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
16 ☐ Flowers/Nursery/Tree Farms	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
17 ■ Semiag/Incidental to Agriculture	0.5	0.2	0.7	0.0	0	$15,169	$0	$ 10,466.61	$ 0.00	$ 0.00
18 ☐ Eucalyptus	0.0	0.0	0.0	0.0	0	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
19 ☐ Linear buffers (combine non-fee-paying land cover types)	N/A	0.0	0.0	N/A	N/A	$0	$0	$ 0.00	$ 0.00	$ 0.00
20 ☐ Linear buffers (combine fee-paying land cover types[b])	N/A	0.0	0.0	N/A	N/A	$15,169	$0	$ 0.00	$ 0.00	$ 0.00
TOTAL:	2.07	0.73	2.82				**TOTAL:**	$ 24,877.16	$ 0.00	$ 41,996.74
21							**TOTAL LAND COVER IMPACTS AND MITIGATION FEES**	$ 66,873.90		
22							**APPLICATION FEE** (The application fee is credited towards the cost of the mitigation fees if the application fee is paid prior to the submittal of the mitigation fee payment . Application fee as of January 1, 2020: $1,981)	$		
23							**OTHER CREDITS** (Advanced fee payment or in lieu fee credit – must be verified by Conservancy). Add **Attachment 6**	$		
24							**TOTAL LAND COVER IMPACTS AND MITIGATION FEES DUE** (Mitigation fees due are determined at the time of payment unless they were paid in accordance with the Yolo HCP/NCCP Early Payment of Mitigation Fees Policy. See www.yolohabitatconservancy.org for current fee schedule.)	$ 66,873.90		

[a] *Land cover fees may be applicable if covered species habitat is present.*

[b] *Fresh Emergent Wetland, Valley Foothill Riparian, and Lacustrine and Riverine land cover types cannot be lumped with other land cover types and must be entered in the fee buffer columns.*

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING LEVEL SURVEYS

Based on a planning level survey conducted by a qualified biologist using the land cover definitions described in the Permitting Guide in Table 2-1, indicate which sensitive natural communities and covered species are relevant to your project. Indicate below whether suitable covered species habitats are present (Column A) and, where applicable, if there is a need to conduct a pre-construction survey, a more focused survey(s) for covered species (Column B) to confirm presence. Complete species-specific planning level survey as needed consistent with protocols provided in Appendix A of the Permitting Guide. Alternatively, covered species presence can be assumed, which would requires adherence to applicable AMMs and implementation of avoidance measures or pre-construction surveys. Attach all species-specific planning level surveys as **Attachment 6**. Describe, map, and tabulate impacts the project will have on each natural community and each species for which habitat is present. Impact calculations must correspond to the permanent and temporary impact calculations in Box E. Label as **Attachment 7**. Alternatively, the impact assessment can be incorporated into the planning level survey. **Important**: Be aware of the timing requirements for conducting a species-specific planning-level survey (Table 6-1 in the Permitting Guide) to avoid project delays.

	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning Level Survey Results	C. Documentation
Sensitive Natural Communities			
1 Alkali prairie and vernal pool complex	Are vernal pools or alkali seasonal wetlands present within 250 feet of project footprint? ☐ **Yes**. *Design project to avoid vernal pools or alkali seasonal wetlands by 250 feet or lesser buffer if approved by wildlife agencies. Check Box G, AMMs 9 and 10. Go to Column C.* ☒ **No**	N/A	Map attached? (Attachment 4 or 6?) ☐ **Yes** ☐ **No** If vernal pools or alkali seasonal wetlands are present on or near the site, provide map showing how project avoids these wetlands.
2 Valley foothill riparian	Is valley foothill riparian present within 100 feet of the project site boundary? ☒ **Yes**. *Design project to avoid valley foothill riparian by 100 feet or count all portions within 100 feet in the impact acreage (see Permitting Guide Table 2-1). Check Box G, AMMs 9 and 10. Go to Column C and provide map.* ☐ **No**	N/A	Map attached? (Attachment 4 or 6?) ☐ **Yes** ☐ **No** Provide map showing the valley foothill riparian in relation to the project footprint.
3 Lacustrine and riverine	Are any streams, rivers, lakes, or ponds within 25 feet of project footprint inside urban planning units, or within 100 feet of project footprint outside urban planning units? ☒ **Yes**. *Design project to avoid these resources by 25 feet inside urban planning units or 100 feet outside urban planning units, or count all portions within these distances in the impact acreage, unless a variance is allowed. Check Box G, AMMs 9 and 10. Go to Column C and provide map.* ☐ **No**	N/A	Map attached? (Attachment 4 or 6?) ☐ **Yes** ☐ **No** Provide map showing any streams, rivers, lakes, or ponds in relation to the project footprint.

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING LEVEL SURVEYS			
	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning Level Survey Results	C. Documentation
Sensitive Natural Communities			
4 Fresh emergent wetlands	Are there any fresh emergent wetlands within 50 feet of project footprint outside urban planning units? ☐ **Yes**. *Design project to avoid these resources by 50 feet, or count all portions within 50 feet in the impact acreage. Check Box G, AMMs 9 and 10. Go to Column C and provide map).* ***Survey period: May 31–September 30*** ■ **No**	N/A	Map attached? (Attachment 4 or 6?) ☐ **Yes** ☐ **No** Provide map of fresh emergent wetlands in relation to the project footprint.
Plants			
5 Palmate-bracted bird's beak	Is suitable habitat present within 250 feet of the project site boundary? ☐ **Yes**. *Survey for palmate-bracted bird's beak consistent with Permitting Guide Appendix A. Check Box G, AMM 11. Go to Column B.* ***Survey period: May 31–September 30*** ■ **No**	Is palmate-bracted bird's beak present? ☐ **Yes**. *Design project to avoid occupied habitat as described in AMM 11. Go to Column C.* ■ **No.** *Go to Column C.*	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No** *Include Species-Specific Planning-Level Survey and map of habitat and any plants found in relation to project footprint.*
Invertebrates			
6 Valley elderberry longhorn beetle	Is there presence of elderberry shrubs in the project site or within 100 feet outside of the project site boundary that could be impacted by the project? ☐ **Yes**. *Identify and map all elderberry shrubs in and within 100 feet of project footprint with stems greater than one inch in diameter at ground level. For mapped shrubs that cannot be avoided, quantify the number of stems greater than one inch in diameter at ground level, and identify any such stems with valley elderberry longhorn beetle exit holes. Check Box G, AMM 12. Go to Column C and provide survey report.* ***Survey period: Year-round*** ■ **No**	N/A	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING LEVEL SURVEYS

	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning Level Survey Results	C. Documentation
Amphibians			
7 California tiger salamander	Is there presence of California tiger salamander aquatic or upland habitat in the project footprint, or aquatic habitat within 500 feet of the project footprint? ☐ **Yes**. *Check box G, AMM 13. Is the habitat within designated critical habitat for California tiger salamander, as determined using the GeoMapper?* ☐ **Yes**. Design project to avoid designated critical habitat. ☐ **No.** *If aquatic habitat cannot be avoided by 500 feet, either conduct surveys as described in the Permitting Guide Appendix A, or assume species presence.* ***Survey period: After rainfall, November 1 to May 15.*** *Go to Column B.* ■ **No**	Are California tiger salamanders present or assumed to be present in aquatic habitat? ☐ **Yes**. *If the species is present or assumed to be present, the Yolo HCP/NCCP will not allow any loss of occupied aquatic habitat until at least four new occupied breeding pools are discovered or established and protected in the Plan Area. Contact Yolo Habitat Conservancy. Go to Column C.* ■ **No**	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**
Reptiles			
8 Western pond turtle	Is western pond turtle habitat present in the project footprint? ■ **Yes**. Check Box G, AMM 14. A qualified biologist is required to evaluate whether there is moderate to high likelihood of western pond turtle presence. *Go to Columns B and C.* ☐ **No**	Moderate to high likelihood of western pond turtle presence? ■ **Yes:** Check Box F for western pond turtle Pre-construction surveys. ☐ **No**	Habitat evaluation attached? (Attachment 6) ☐ **Yes** ☐ **No**
9 Giant garter snake	Is there any giant garter snake habitat within the project footprint? ☐ **Yes**. *Design project to avoid or minimize impact on giant garter snake habitat to the extent practicable. If habitat cannot be avoided, see AMM 15. Check Box F for giant garter snake Pre-construction surveys, and check Box G, AMM 15.* ■ **No**	N/A	N/A

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING LEVEL SURVEYS			
	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning Level Survey Results	C. Documentation
Birds			
10 Swainson's hawk and white-tailed kite	Are there suitable Swainson's hawk or white-tailed kite nest trees within 1,320 feet of the project footprint? ☒ **Yes**. *If nest trees cannot be avoided by 1,320 feet, check Box F for hawk and kite Pre-construction surveys, and Box G, AMM 16.* ☐ **No**	N/A	N/A
11 Western yellow-billed cuckoo	Is suitable habitat present within 500 feet of the project site boundary? ☐ **Yes**. *If there are breeding records for the western yellow-billed cuckoo within ¼ mile of the project site from the previous three years (as determined by GeoMapper), then assume species is present. If there are no breeding records with ¼ mile, then either assume species is present or survey consistent with Chapter 6 of the Permitting Guide. See columns B and C. Check Box F for western yellow-billed cuckoo Pre-construction surveys and Check Box G, AMM 17.* ***Survey period: June 1–August 30.*** ☒ **No**	Is western yellow-billed cuckoo present or assumed to be present? ☐ **Yes**. *If project cannot avoid occupied habitat by 500 feet, avoid take of nesting birds as described in AMM 17.* ☒ **No.**	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**
12 Western burrowing owl	Is western burrowing owl habitat present on the project site, or within 500 feet of the project site? ☐ **Yes**. *Conduct planning-level surveys for occupied habitat as described in Permitting Guide Appendix A. Go to Columns B and C.* ***Survey period: February 1–August 31 during the breeding season; September 1–January 31 during nonbreeding season.*** ☒ **No**	Are burrowing owls present? ☐ **Yes**. *Check Box G, AMM18. If burrows cannot be avoided, consistent with Permitting Guide Chapter 5, Check Box F for western burrowing owl Pre-construction surveys.* ☒ **No**	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**

BOX F: CONDITIONS OF APPROVAL: CONDUCT PLANNING LEVEL SURVEYS

	A. Project Site Conditions Requiring Planning-Level Survey	B. Species-Specific Planning Level Survey Results	C. Documentation
13 Least Bell's vireo	Is least Bell's vireo habitat present in and within 500 feet of project footprint? ☐ **Yes**. *Check Box G, AMM 19. Are there nesting records for the species within ¼ mile of the site from the previous three years (determined using the GeoMapper)?* ☐ **Yes**. *Assume species is present. See Column B.* ☐ **No.** *Conduct planning-level surveys, as described in Permitting Guide Appendix A. See Columns B and C.* ***Survey period: April 1–July 15*** ■ **No**	Are least Bell's vireo nests present or assumed to be present? ☐ **Yes**. *Check Box F for least Bell's vireo Pre-construction surveys. Avoid take of birds as described in AMM 19.* ■ **No.**	Species –Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**
14 Bank swallow	Is bank swallow nesting habitat present on the project site, or within 500 feet of the project site? ☐ **Yes**. *Check Box G, AMM 20. Conduct planning-level surveys as described in Permitting Guide Appendix A. Go to Columns B and C.* ***Survey period: March 1–August 15*** ■ **No**	Are nesting bank swallows present? ☐ **Yes**. *Check Box F for bank swallow Pre-construction surveys. Avoid take of birds as described in AMM 19.* ■ **No.**	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**
15 Tricolored blackbird	Is tricolored blackbird nesting habitat present on the project site, or within 1,300 feet of the project site? ■ **Yes**. *Conduct planning-level surveys as described in Permitting Guide Appendix A. Check Box G, AMM 21. Go to Column C.* ***Survey period: March 1–July 30*** ☐ **No**	N/A	Species-Specific Planning-Level Survey attached? (Attachment 6) ☐ **Yes** ☐ **No**

BOX G: CONDITIONS OF APPROVAL: CONDUCT PRE-CONSTRUCTION SURVEYS

Indicate which species in **Items 1-7** are relevant to your project. **Important**: Refer to Chapter 4 of the Permitting Guide for information about survey purpose, the land cover types and site conditions requiring pre-construction surveys, survey area size, and survey timing.

Birds			
1	■ Swainson's hawk	4	☐ Western burrowing owl
2	☐ White-tailed kite	5	☐ Least Bell's vireo
3	☐ Western yellow-billed cuckoo		
Reptiles			
6	☐ Giant garter snake	7	■ Western pond turtle

BOX H: CONDITIONS OF APPROVAL: AVOIDANCE AND MINIMIZATION MEASURES (AMMs)

Check the avoidance and minimization measures below that apply to your project. Refer to the Permitting Guide for assistance. Describe how you will fulfill the requirements of each required condition. Plan your construction carefully around the translocation or other dates required by the AMMs. Label as **Attachment 8**.

1	■	AMM1: *Establish Resource Protection Buffers*
2	■	AMM 2: *Design Developments to Minimize Indirect Effects at Urban-Habitat Interfaces (this AMM does not apply to new development where it is immediately adjacent to existing developed lands*)
3	■	AMM 3: *Confine and Delineate Work Area*
4	■	AMM 4: *Cover Trenches and Holes during Construction and Maintenance*
5	■	AMM 5: *Control Fugitive Dust*
6	■	AMM 6: *Conduct Worker Training*
7	■	AMM 7: *Control Nighttime Lighting of Project Construction Sites*
8	■	AMM 8: *Avoid and Minimize Effects of Construction Staging Areas and Temporary Work Areas*
9	■	AMM 9: *Establish Resource Protection Buffers around Sensitive Natural Communities*
10	■	AMM 10: *Avoid and Minimize Effects on Wetlands and Waters*
11	☐	AMM 11: *Minimize Take and Adverse Effects on Palmate-Bracted Bird's Beak*
12	☐	AMM 12: *Minimize Take and Adverse Effects on Habitat of Valley Elderberry Longhorn Beetle*
13	☐	AMM 13: *Minimize Take and Adverse Effects on Habitat of California Tiger Salamander*
14	■	AMM 14: Minimize Take and Adverse Effects on Habitat of Western Pond Turtle
15	☐	AMM 15: *Minimize Take and Adverse Effects on Habitat of Giant Garter Snake*
16	■	AMM 16: *Minimize Take and Adverse Effects on Habitat of Swainson's Hawk and White-Tailed Kite*
17	☐	AMM 17: *Minimize Take and Adverse Effects on Habitat of Western Yellow-Billed Cuckoo*
18	☐	AMM 18: *Minimize Take and Adverse Effects on Western Burrowing Owl*
19	☐	AMM 19: *Minimize Take and Adverse Effects on Least Bell's Vireo*
20	☐	AMM 20: *Minimize Take and Adverse Effects on Habitat of Bank Swallow*
21	■	AMM 21: *Minimize Take and Adverse Effects on Habitat of Tricolored Blackbird*

BOX I: ATTACHMENT CHECKLIST

Indicate which attachments are provided below. **Note**: Attachments must meet the requirements described in Permitting Guide. If these requirements are not met, your application may be delayed.

All Projects

■ **Attachment 1**. Project Description (Box C). Attach separately or indicate attached report page #s here:
1,3

■ **Attachment 2**. Vicinity map PDF (Box C). Attach separately or indicate report page # here:

■ **Attachment 3**. Site Plan (Box C). Attach separately or indicate report page # here:
5

BOX I: ATTACHMENT CHECKLIST

Projects with Impacts

- ☒ **Attachment 4**. Planning level survey (Box D)
- ☐ **Attachment 5**. Photos of temporary impact areas. Attach separately or indicate report page #s here:
- ☒ **Attachment 6**. Species-specific planning level survey(s) (Box E). Attach separately or indicate report page #s here: 8, 11-14
- ☐ **Attachment 7**. Unavoidable impacts on covered species. Attach separately or indicate report page #s here: 15, 24-25
- ☒ **Attachment 8**. Description of compliance with Avoidance and Minimization Measures (Box G). Attach separately or indicate report page #s here: 23-43

BOX J: SIGNATURES

☐ **By checking the box and signing below I certify all information in the application is true and correct to the best of my knowledge. I also certify I understand the requirements of the AMMs, including dates for elderberry translocation or other dates that may affect construction timing.**

1	Member agency contact name and contact information	Name			
		Phone		Email	
2	Member agency signature			Date	

FORM SUBMITTAL INSTRUCTIONS

Submit this form electronically to the Yolo Habitat Conservancy at the PO Box provided below. Provide a copy to the applicable planning office contact below, for informational purposes.

LOCAL AGENCY PLANNING OFFICE CONTACT INFORMATION

Yolo County	**City of West Sacramento**	**City of Davis**	**City of Woodland**	**City of Winters**
Stephanie Cormier Planning Division Department of Community Services 292 West Beamer Street, Woodland (530) 666-8041	David Tilley Community Development Department 1110 West Capitol Ave., 2nd Floor, West Sacramento (916) 617-4645	Sherri Metzker Community Development & Sustainability 23 Russell Blvd., Suite 2, Davis (530) 757-5610 ext. 7239	Cindy Norris Planning Division 300 First Street, Woodland (530) 661-5911	Dave Dowswell Community Development Department 318 First Street, Winters (530) 794-6714

YOLO HABITAT CONSERVANCY CONTACT INFORMATION

Address: PO Box 2202, Woodland, CA 95776 Phone: 530-666-8150 Email: info@yolohabitatconservancy.org

Appendix D

Draft Delineation of Waters of the U.S. Map

gallaway
ENTERPRISES

DRAFT DELINEATION OF JURISDICTIONAL WATERS OF THE UNITED STATES

County Road 96 Over Union School Slough Bridge Replacement Project

(BRLO-5922)

Yolo County, California



November 2021

Prepared for:
Mark Thomas & Company, Inc.
Attn: Julie Passalacqua
2290 North First Street, Suite 304
San Jose, CA 95131

Prepared by:
Gallaway Enterprises
117 Meyers Street, Suite 120
Chico, CA 95928
(530) 332-9909
www.gallawayenterprises.com

Contents

Introduction and Project Location 1
Environmental Setting and Site Conditions 1
Survey Methodology 4
Determination of Hydrophytic Vegetation 4
Determination of Hydric Soils 6
Determination of Wetland Hydrology 6
Determination of Ordinary High Water Mark 6
Determination of Wetland Boundaries in Difficult Wetland Situations 7
Aquatic Resource Boundary Determination and Acreage Calculation 7
Non-Wetland and Non-Jurisdictional Feature Determination 7
Results 8
Waters of the United States: Other Waters 8
Waters of the United States: Adjacent Wetlands 8
Soils 10
Vegetation 10
Hydrology 11
Site Photos Taken on June 23, 2020 12
Glossary 14
References 18

List of Tables and Figures

Table 1. Results Summary from the Draft Delineation of Waters of the United States for the County Road 96 Over Union School Slough Bridge Replacement Project..... 8

Table 2. Soil Map Units, NRCS hydric soil designation, and approximate totals for the County Road 96 Over Union School Slough Bridge Replacement Project..... 10

Figure 1 - Regional Location Map 2

Figure 2 - Project Location 3

Figure 3 - Photo Point Location Map 5

Figure 4 - Draft Delineation of Waters of the U.S. Map..... 9

List of Appendices

Appendix A: Arid West Intermittent Streams OHWM Datasheet

Appendix B: NRCS Soil Map and Soil Series Descriptions

DRAFT DELINEATION OF JURISDICTIONAL WATERS OF THE UNITED STATES,

County Road 96 Over Union School Slough Bridge Replacement Project, Yolo County, California

Introduction and Project Location

Gallaway Enterprises conducted a delineation of Waters of the United States (WOTUS) and aquatic resources for the County Road 96 Over Union School Slough Bridge Replacement project (Project) consisting of an approximately 4-acre survey area located in unincorporated Yolo County, California (**Figure 1 and 2**). The Project site is located at latitude 38.598830 and longitude -121.840138. The project currently proposed on the site is road improvements including the construction of a new bridge along a similar alignment as the existing structurally deficient bridge being replaced.

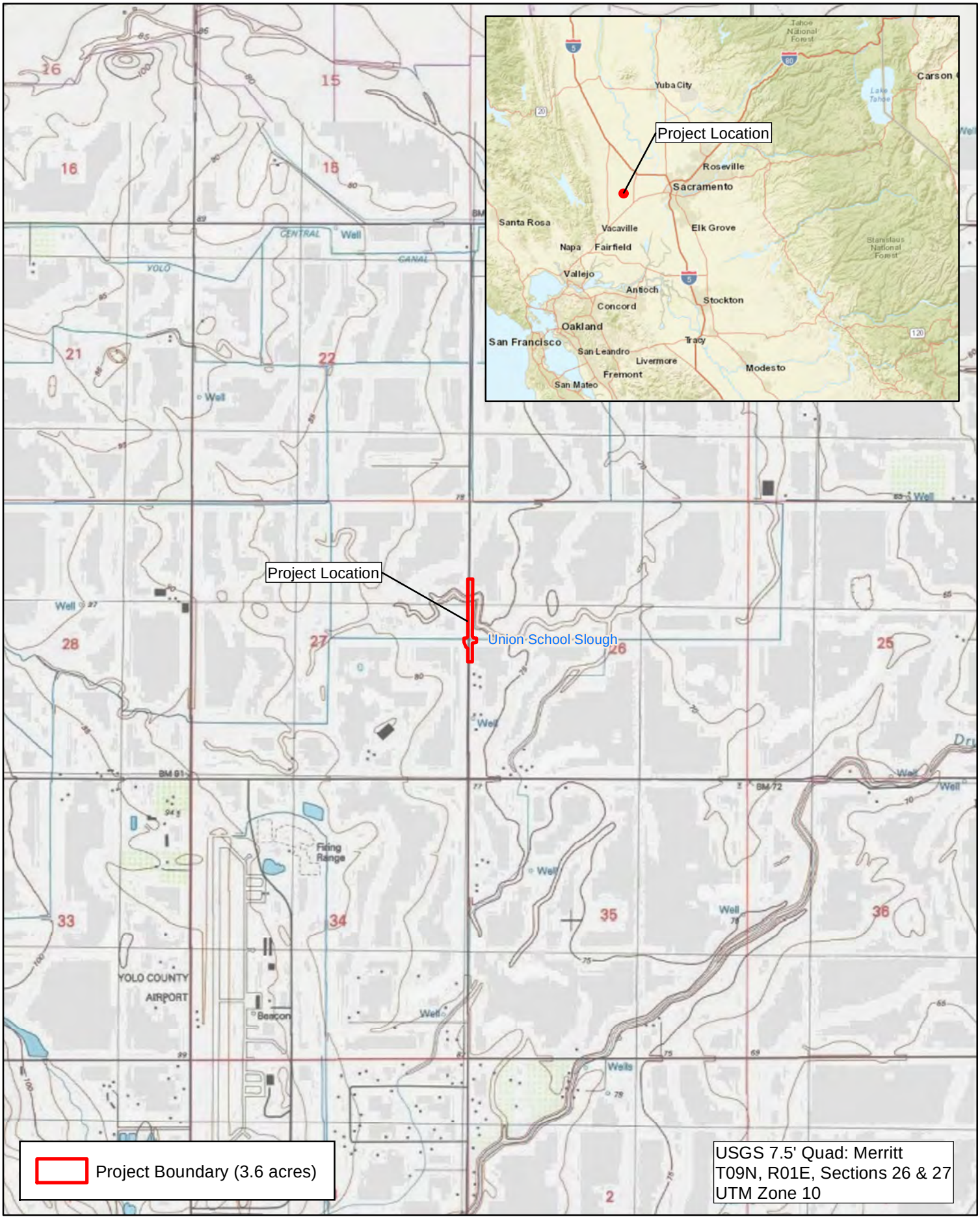
To access the site from the Sacramento area, take I-80 W toward San Francisco. From I-80 W, take exit 70 for CA-113 N. From CA-113 N take exit 31 for Road 29 and turn right onto Road 29. Continue travelling west on Road 29 for approximately 4.1 miles and turn right onto County Road 96. Continue on County Road 96 for approximately 0.6 miles and you will arrive at the County Road 96 Bridge. The survey area encompasses the entire existing County Road 96 over Union School Slough Bridge and diversion channel culvert located to the south of the bridge.

A survey of aquatic resources was conducted on June 23, 2020 and October 20, 2021 by senior botanist Elena Gregg. Data regarding the location and extent of wetlands and other waters of the United States were collected using a Trimble Geo Explorer 6000 Series GPS Receiver. The survey involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual* (1987) (1987 Delineation Manual); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008) (Arid West Manual); the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (2008); the *State of California 2016 Wetland Plant List*; and the *2019 National Wetland Plant List updated information.* Gallaway Enterprises have prepared this report in compliance with the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (January 2016).

Environmental Setting and Site Conditions

The Project site is located within the Central Valley in unincorporated Yolo County, California. The site is primarily composed of an intermittent drainage, Union School Slough, with a narrow band of valley foothill riparian vegetation along the side of the steep banks and surrounded by active agricultural land. The site is the location of an existing structurally deficient bridge, the County Road 96 Bridge over Union School Slough. The Project site is surrounded by agricultural fields including almond orchards and alfalfa and fallowed fields. The stretch of Union School Slough within the Project site is highly channelized.

The average annual precipitation is 17.55 inches and the average annual temperature is 60.35° F (WRCC 2020) in the region where the Project site is located. The Project site occurs at an average elevation of 78 feet above sea level. The overall area is sloped between 0 and 2 percent; however, the channel banks were highly channelized and had slopes of 70 percent or greater. Soils within the site were loams with a restrictive layer occurring more than 80 inches deep.



1:28,500

0 0.25 0.5 Miles

NORTH

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Regional Location
Figure 1

gallaway ENTERPRISES

GE: #17-013B Map Date: 10/12/2021



1:2,200
0 50 100 Feet
Data Sources: ESRI, County of Yolo, USGS

NORTH

County Road 96 Union School Slough
Project Location
Figure 2

gallaway ENTERPRISES

GE: #17-013B Map Date: 10/12/2021

Survey Methodology

The entire Project site was surveyed on-foot by the Gallaway Enterprises staff on June 23, 2020 and October 20, 2021 to identify any potentially jurisdictional features. The survey, mapping efforts, and report production were performed according to the current valid legal definitions of WOTUS (in effect on October 20, 2021). The boundaries of non-tidal, non-wetland waters, when present, were delineated at the ordinary high water mark (OHWM) as defined in 33 Code of Federal Regulations (CFR) 328.3. The OHWM represents the limit of United States Army Corps of Engineers (Corps) jurisdiction over non-tidal waters (e.g., streams and ponds) in the absence of adjacent wetlands (33 CFR 328.04) (Curtis, et. al. 2011). Historic aerial photographs available on Google Earth were analyzed prior to conducting the field visit. Areas identified as having potential wetland or unusual aerial signatures were assessed in the field to determine the current conditions.

Field data were entered onto data sheets using the most current format (**Appendix A**). The perimeters of WOTUS based on the 1987 Delineation Manual and the Arid West Manual were recorded and defined according to their topographic and hydrologic orientation. Only areas exhibiting the necessary wetland parameters according to the 1987 Delineation Manual and Arid West Manual on the date surveyed were mapped as wetlands. Photographs were taken to show WOTUS and current site conditions. The locations of the photo points are depicted in **Figure 3** and the associated photographs are provided at the end of the report.

Many of the terms used throughout this report have specific meanings relating to the federal wetland delineation process. Term definitions are based on the Corps 1987 Delineation Manual; the Arid West Manual; *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, (*Lichvar and McColley 2008*)* and the Corps *Jurisdictional Determination Form Instructional Guidebook* (2007). The terms defined below have specific meaning relating to the delineation of WOTUS as prescribed by §404 of the Clean Water Act (CWA) and described in 33 CFR Part 328 and 40 CFR Parts 110, 112, and 116, and 122.

Determination of Hydrophytic Vegetation

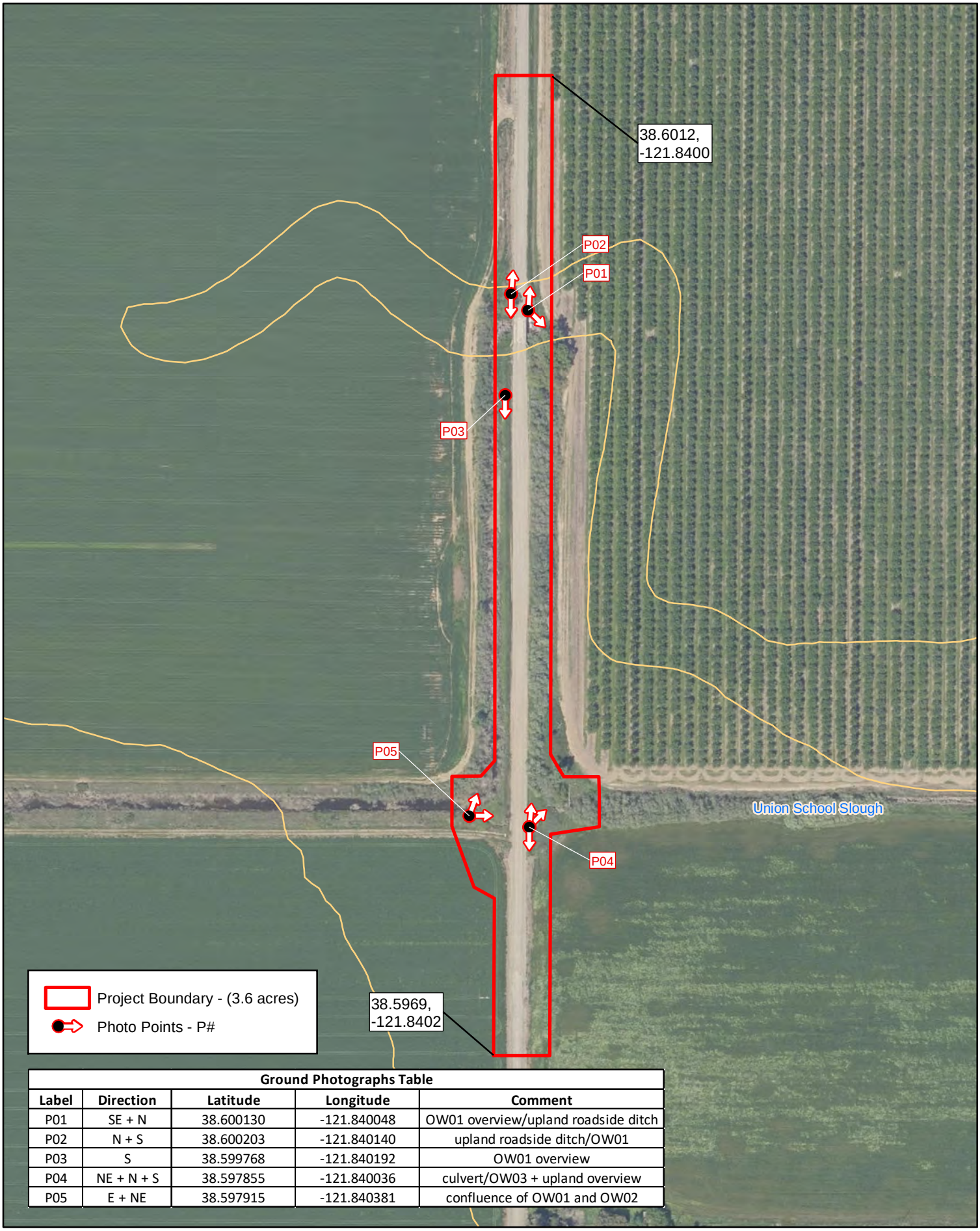
The presence of hydrophytic vegetation was determined using the methods outlined in the 1987 Delineation Manual and the Arid West Manual. Areas were considered to have positive indicators of hydrophytic vegetation if they pass the dominance test, meaning more than 50 percent of the dominant species are obligate wetland, facultative wetland and facultative plants. Plant species were identified to the lowest taxonomy possible. Plant indicator status was determined by reviewing the State of California 2016 Wetland Plant List for the Arid West Region and the National Wetland Plant List 2019 updated information. In situations where dominance can be misleading due to seasonality, the prevalence index will be used to determine hydrophytic status of the community surrounding sample sites.

Plant indicator status categories:

Obligate wetland plants (OBL) – plants that occur almost always (estimated probability 99%) in wetlands under normal conditions, but which may also occur rarely (estimated probability 1%) in non-wetlands.

Facultative wetland plants (FACW) - plants that usually occur (estimated probability 67% to 99%) in wetlands under normal conditions, but also occur (estimated probability 1% to 33%) in non-wetlands.

Facultative plants (FAC) – Plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands.



Ground Photographs Table				
Label	**Direction**	**Latitude**	**Longitude**	**Comment**
P01	SE + N	38.600130	-121.840048	OW01 overview/upland roadside ditch
P02	N + S	38.600203	-121.840140	upland roadside ditch/OW01
P03	S	38.599768	-121.840192	OW01 overview
P04	NE + N + S	38.597855	-121.840036	culvert/OW03 + upland overview
P05	E + NE	38.597915	-121.840381	confluence of OW01 and OW02

NORTH

1:2,400 1 in = 200 ft

0 100 200 Feet

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Ground Photographs Map
Figure 3

gallaway ENTERPRISES

GE: #17-013B Map Date: 11/01/2021

Facultative upland plants (FACU) – Plants that occur sometimes (estimated probability1% to 33%) in wetlands, but occur more often (estimated probability 67% to 99%) in non-wetlands.

Obligate upland plants (UPL) – Plants that occur rarely (estimated probability 1%) in wetlands, but occur almost always (estimated probability 99%) in non-wetlands under natural conditions.

Determination of Hydric Soils

Soil survey information was reviewed for the current site condition. Information regarding local soil and series descriptions is provided in **Appendix B.** The current Natural Resources Conservation Service (NRCS) *Field Indicators of Hydric Soils in the United States, Version 8.2* (NRCS 2018) was on hand to be used in conjunction with the Arid West Manual to determine the presence of hydric soil indicators.

Determination of Wetland Hydrology

Wetland hydrology was determined to be present if a site supported one or more of the following characteristics:

- Landscape position and surface topography (e.g. position of the site relative to an up-slope water source, location within a distinct wetland drainage pattern, and concave surface topography),
- Inundation or saturation for a long duration either inferred based on field indicators or observed during repeated site visits, and
- Residual evidence of ponding or flooding resulting in field indicators such as scour marks, sediment deposits, algal matting, surface soil cracks and drift lines.

The presence of water or saturated soil for approximately 12% or 14 consecutive days during the growing season typically creates anaerobic conditions in the soil, and these conditions affect the types of plants that can grow and the types of soils that develop (Wetland Training Institute 1995).

Historic aerial photographs were analyzed to look for primary and secondary wetland hydrology indicators of inundation or saturation. The historic aerial imagery reviewed was the public, readily available imagery provided on Google Earth (1993-2021). If aerial signatures demonstrated the presence of surface water on 1 or more of the historic aerial photographs viewed, inundation and a primary indicator of wetland hydrology was determined to be present. Saturation, a secondary indicator of wetland hydrology, was determined to be present if saturation, “darker patches within the field,” were observed on 1 or more of the 9 historic aerial photographs viewed and the presence of hydric soils was confirmed in these areas during the field survey.

Determination of Ordinary High Water Mark

Gallaway Enterprises utilized methods consistent with the Arid West Manual and *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Lichvar and McColley 2008) to determine the OHWM. The lateral extents of non-tidal water bodies (e.g. intermittent and ephemeral streams) were based on the OHWM, which is “the line on the shore established by the fluctuations of water” (Corps 2005). The OHWM was determined based on multiple observed physical characteristics of the area, which can include scour, multiple observed flow events (from current and historical aerial photos), shelving, and changes in the character of soil, presence of mature vegetation, deposition, and topography. Due to the wide extent of some floodplains, adjacent riparian scrub areas characterized by hydric soils, hydrophytic vegetation, and

hydrology may be included within the OHWM of a non-tidal water body (Curtis, et. al. 2011). Inclusion of minor special aquatic areas is an acceptable practice as outlined in the Arid West Manual.

OHWM Transects:

Representative OHWM widths measured in the field are shown as transect lines and measured in feet as required by the Corps *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program (2016)*. These transect lines are used to ensure that the other waters of the United States identified within the Project site are mapped and calculated at the appropriate average width for each channel segment based on the Corps definition of OHWM as defined in the Arid West OHWM Field Guide and the *Ordinary High Water Mark Identification RGL 05-05 (2005)* (RGL 05-05). When the average width of a feature changes, this change is shown on the delineation map as a feature transition and a new average channel width is determined. At each transect line Gallaway uses multiple observed physical indicators in determining the OHWM. The lateral extents of the transect lines identify the location of the OHWM where benches, drift, exposed root hairs, changes in substrate/particle size, and, if appropriate, changes in vegetation were observed. If any other physical indicators as described in the Arid West OHWM Field Guide or RGL 05-05 are observed, these indicators are also utilized to help determine the location of the OHWM. Field data gathered along OHWM transects of Union School Slough within the site was entered onto the Arid West OHWM Datasheets (Curtis and Lichvar 2010), which are provided as **Appendix A**.

Determination of Wetland Boundaries in Difficult Wetland Situations

The difficult wetland situation procedures for determining hydrophytic vegetation were used when mapping the boundary of wetlands within the Project site due to the extreme drought conditions experienced in California in 2021. To aid in the determination, spatial patterns, analysis of aerial photographs, topography, and landscape position were used in conjunction with vegetation data to determine the wetland boundary. Areas where wetland vegetation or wetland hydrology was lacking but where the landscape position was likely to concentrate water were closely inspected. Gallaway Enterprises mapped these areas as wetlands if hydric soil indicators were detected and at least one other hydric indicator was present (i.e. wetland hydrology or hydrophytic vegetation).

Aquatic Resource Boundary Determination and Acreage Calculation

The wetland-upland boundary was determined based on the presence or inference of positive indicators of all mandatory criteria. Soil samples were taken within wetland and upland areas. The site was traversed on foot to identify wetland features and boundaries. The spatial data obtained during the preparation of this wetland delineation was collected using a Trimble Geo Explorer 6000 Series GPS Receiver. No readings were taken with fewer than 5 satellites. Point data locations were recorded for at least 25 seconds at a rate of 1 position per second. Area and line data were recorded at a rate of 1 position per second while walking at a slow pace. All GPS data were differentially corrected for maximum accuracy. In some cases, when visual errors and degrees of precision are identified due to environmental factors negatively influencing the precision of the GPS instrument (i.e. dense tree cover, steep topography, and other factors affecting satellite connection) mapping procedures utilized available topographic and aerial imagery datasets in order to improve accuracy in feature alignment and location.

Non-Wetland and Non-Jurisdictional Feature Determination

Areas were determined to be non-wetlands if they did not meet the necessary wetland test parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4) and were determined to be

potentially non-jurisdictional if they were consistent with the description of non-jurisdictional features as presented in the *Corps Jurisdictional Determination Form Instructional Guidebook* (2007). There were no potentially non-jurisdictional features identified within the Project site.

Results

Table 1 Summarizes the area calculations for the pre-jurisdictional features within the Project. A complete Draft Delineation of WOTUS map, utilizing a 1" to 200' scale, is included as **Figure 4**.

Table 1. **Results Summary from the Draft Delineation of Waters of the United States for the County Road 96 Over Union School Slough Bridge Replacement Project.**

Draft Delineation of Waters of the U.S.						
Other Waters						
Label	**Cowardin**	**Description**	**Width**	**Length (ft)**	**Area (sq ft)**	**Acres**
OW01	R4	Intermittent Drainage	24.5	1379.78	33804.60	0.78
OW02	R4	Intermittent Drainage	9.0	54.09	486.82	0.01
OW03	R4	Intermittent Drainage	9.0	45.62	410.56	0.01
Other Waters Totals =				**1479.49**	**34701.98**	**0.80**
Total Waters of the U.S. =				**1479.49**	**34701.98**	**0.80**

Waters of the United States: Other Waters

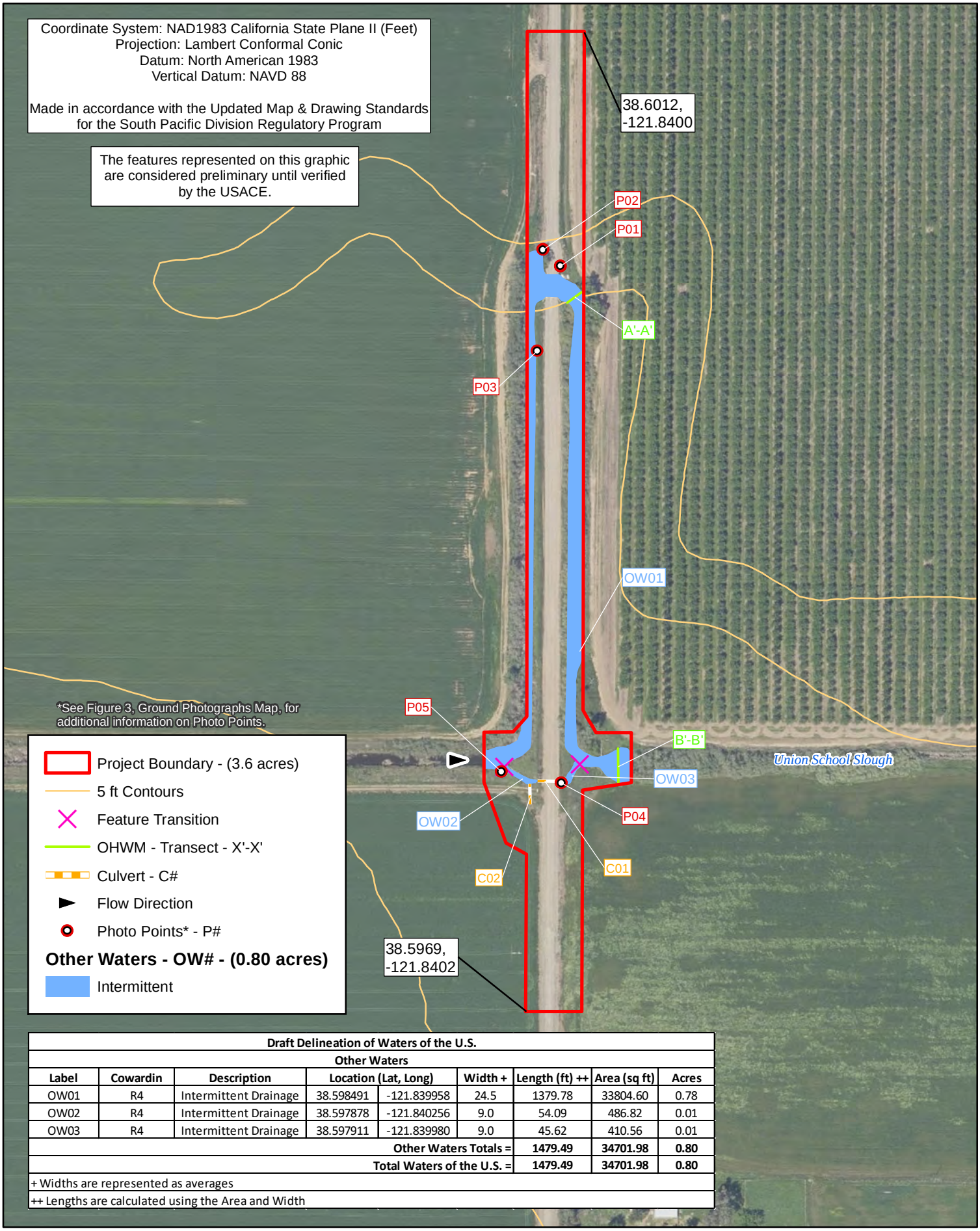
There are three features identified as "other waters of the United States" (OW) within the Project site (**Figure 4**). The area and linear footage data associated with these features are provided in **Table 1**. Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, ephemeral and intermittent drainages, ponds, and other surface water features that exhibit an ordinary high-water mark, but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). The boundaries of all other waters identified within the Project site were delineated based on the observed OHWM, including physical characteristics such as natural lines impressed on the bank, shelving, changes in the character of the soil, the destruction of terrestrial vegetation, debris lines and other appropriate indicators.

All of the OW features identified within the Project site are segments or diversions of Union School Slough, which has been identified as an intermittent drainage. Intermittent drainages are classified by the Corps as Relatively Permanent Waters (RPW). Relatively Permanent Waters are defined as tributaries that typically flow for more than 3 months of the year and have a documented hydrologic connection to a Traditionally Navigable Water (TNW). Flowing water was observed within all of the OW features during the June 2020 field visit but were dry during the October 2021 visit. The OW features identified within the Project site contain appropriate morphology of bed, bank and scour.

Waters of the United States: Adjacent Wetlands

No wetland features occur within the Project site.

During the aerial photography review of the Project site conducted prior to the field visit, it was evident that the channel banks were lined with vegetation that appeared to be riparian vegetation. While riparian vegetation was present within and along the immediate tops of the banks of Union School



Draft Delineation of Waters of the U.S.								
Other Waters								
Label	Cowardin	Description	Location (Lat, Long)		Width +	Length (ft) ++	Area (sq ft)	Acres
OW01	R4	Intermittent Drainage	38.598491	-121.839958	24.5	1379.78	33804.60	0.78
OW02	R4	Intermittent Drainage	38.597878	-121.840256	9.0	54.09	486.82	0.01
OW03	R4	Intermittent Drainage	38.597911	-121.839980	9.0	45.62	410.56	0.01
				Other Waters Totals =		**1479.49**	**34701.98**	**0.80**
				Total Waters of the U.S. =		**1479.49**	**34701.98**	**0.80**
+ Widths are represented as averages								
++ Lengths are calculated using the Area and Width								

1:2,400 1 in = 200 ft

0 100 200 Feet

NORTH

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Draft Delineation of Waters of the U.S.
Figure 4

Delineation by: E. Gregg
Map by: A. McLaughlin

gallaway ENTERPRISES

GE: #17-013B Map Date: 11/09/2021

Slough, no riparian wetlands outside of the channel's OHWM were found to occur when ground-truthed. This was due to the channelized nature and steep banks of Union School Slough. These steep banks preclude the presence of a floodplain and, thus, hydrology to support a riparian wetland feature is lacking. Photo points were taken within the channel and other locations throughout the Project to depict the site conditions (**Figure 3**).

Soils

Field observations of soil characteristics included an assessment of average texture and structure. Gallaway's soil texture evaluations rendered fine textured loams.

The geographic region in which the Project is found is often characterized as having a naturally occurring deep hardpan that undulates throughout the region. Hardpans restrict root growth, limit water infiltration, and result in a perching of the water table in certain locations. Within the Project site, however, the hardpan is typically found at a depth of 80 inches or greater.

Gallaway queried the National Cooperative Soil Survey database to further evaluate the current soil conditions. A copy of the soil survey map and a description of mapped soil units for the Project site are included as **Appendix B**. Three soil map units occur within the Project. These map units are listed below in **Table 2**. Based on Gallaway's review, only two of the soil map units identified within the Project site contain minor amounts of hydric components (1-8%). The landforms on which these hydric soil components would typically be found include basin floors and within channels. A copy of the soil survey map and a description of mapped soil units for the Project site are included as **Appendix B**.

Table 2. Soil Map Units, NRCS hydric soil designation, and approximate totals for the County Road 96 Over Union School Slough Bridge Replacement Project.

Map Unit Symbol	Map Unit Name	% Hydric Component in Map Unit	Landform of Hydric Component	% Map Unit in Survey Area
Ca	Capy silty clay, 0 percent slopes	8	Basin floors	0.9%
HdA	Hillgate loam, moderately deep, 0 to 2 percent slopes	N/A	N/A	78.8%
Ms	Myers clay, 0 to 1 percent slopes	1	Channels	20.3%

Vegetation

The vegetation shading the channel was dominated by a dense shrub canopy of sandbar willow (*Salix exigua*) (FACW) and an understory of Himalayan blackberry (*Rubus armeniacus*) (FAC). Also lining the channel was the occasional valley oak (*Quercus lobata*) (FACU) and shining willow (*Salix lasiandra*) (FACW). The dominant vegetation within the disturbed annual grassland habitat present in the Project included hedge mustard (*Sisymbrium altissimum*) (FACU), ripgut brome (*Bromus diandrus*) (UPL), soft chess (*Bromus hordeaceus*) (FACU), wild oats (*Avena barbata*) (UPL), prickly lettuce (*Lactuca serriola*) (FACU) and Italian thistle (*Carduus pycnocephalus*) (NL). The remaining area surrounding Union School Slough was dominated by active agricultural land.

Hydrology

Precipitation and capture of localized runoff, including from adjacent agricultural land, are the main hydrological inputs for the intermittent OW features within the Project site. The OW features present within the site are Union School Slough (OW 01) and a short diversion channel of Union School Slough (OW02 and OW03) which have all been highly man-altered and straightened/realigned. Union School Slough is a tributary of Willow Slough, which is a tributary of the Toe Drain, which in turn is a tributary of Prospect Slough, which ultimately drains into the Sacramento River, a TNW. Flowing water was observed within all the OW features during the June 2020 field visit, but during the October 2021 visit all the drainages were completely dry.

Site Photos Taken on June 23, 2020



P01 – Union School Slough (OW01) looking southeast



P02 – Upland roadside ditch looking north



P01 – Upland roadside ditch looking north



P03 – Union School Slough (OW01) overview looking south



P02 – End of Union School Slough (OW01) looking south



P04 – Culvert (C01) and diversion channel (OW03) looking northeast



P04 – Upland and roadway overview looking north



P05 – Confluence of Union School Slough (OW01) and diversion channel (OW02) looking northeast



P04 – Upland farm fields and roadway looking south



P05 – Diversion channel (OW02) looking east

Glossary

Abutting: When referring to wetlands that are adjacent to a tributary, abutting defines those wetlands that are not separated from the tributary by an upland feature, such as a berm or dike.

Adjacent: Adjacent as used in "Adjacent to traditional navigable water," is defined in Corps and EPA regulations as "bordering, contiguous, or neighboring." Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes and the like are 'adjacent wetlands. A wetland "abuts" a tributary if it is not separated from the tributary by uplands, a berm, dike, or similar feature.

While all wetlands that meet the agencies' definitions are considered adjacent wetlands, only those adjacent wetlands that have a continuous surface connection because they directly abut the tributary (e.g., they are not separated by uplands, a berm, dike, or similar feature) are considered jurisdictional under the plurality standard. (CWA Jurisdiction Following Rapanos v US and Carabell v US 12-02-08).

The regulations define "adjacent" as follows: "[t]he term adjacent means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are 'adjacent wetlands.'" Under this definition, a wetland does not need to meet all criteria to be considered adjacent. The agencies consider wetlands to be bordering, contiguous, or neighboring, and therefore "adjacent" if at least one of following three criteria is satisfied:

(1) There is an unbroken surface or shallow sub-surface hydrologic connection between the wetland and jurisdictional waters; or

(2) The wetlands are physically separated from jurisdictional waters by "manmade dikes or barriers, natural river berms, beach dunes, and the like;" or,

(3) Where a wetland's physical proximity to a jurisdictional water is reasonably close, that wetland is "neighboring" and thus adjacent. For example, wetlands located within the riparian area or floodplain of a jurisdictional water will generally be considered neighboring, and thus adjacent. One test for whether a wetland is sufficiently proximate to be considered "neighboring" is whether there is a demonstrable ecological interconnection between the wetland and the jurisdictional waterbody. For example, if resident aquatic species (e.g., amphibians, reptiles, fish, mammals, or waterfowl) rely on both the wetland and the jurisdictional waterbody for all or part of their life cycles (e.g., nesting, rearing, feeding, etc.), that may demonstrate that the wetland is neighboring and thus adjacent. The agencies recognize that as the distance between the wetland and jurisdictional water increases, the potential ecological interconnection between the waters is likely to decrease.

The agencies will also continue to assert jurisdiction over wetlands "adjacent" to traditional navigable waters as defined in the agencies' regulations. Under EPA and Corps regulations and as used in this guidance, "adjacent" means "bordering, contiguous, or neighboring." Finding a continuous surface connection is not required to establish adjacency under this definition. The Rapanos decision does not affect the scope of jurisdiction over wetlands that are adjacent to traditional navigable waters. The agencies will assert jurisdiction over those adjacent wetlands that have a continuous surface connection with a relatively permanent, non-navigable tributary, without the legal obligation to make a significant nexus finding.

Atypical situation (significantly disturbed): In an atypical (significantly disturbed) situation, recent human activities or natural events have created conditions where positive indicators for hydrophytic vegetation, hydric soil, or wetland hydrology are not present or observable.

Channel. "An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water" (Langbein and Iseri 1960:5).

Channel bank. The sloping land bordering a channel. The bank has steeper slope than the bottom of the channel and is usually steeper than the land surrounding the channel.

Cobbles. Rock fragments 7.6 cm (3 inches) to 25 .4 cm (10 inches) in diameter.

Debris flow. A moving mass of rock fragments, soil, and mud where more than 50% of the particles are larger than sand-sized.

Ditch. A constructed or excavated channel used to convey water.

Drift. Organic debris oriented to flow direction(s) (larger than small twigs).

Ephemeral stream. An ephemeral stream has flowing water only in direct response to precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Facultative wetland (FACW). Wetland indicator category; species usually occurs in wetlands (estimated probability 67–99%) but occasionally found in non-wetlands.

Flat. A level landform composed of unconsolidated sediments usually mud or sand. Flats may be irregularly shaped or elongate and continuous with the shore, whereas bars are generally elongate, parallel to the shore, and separated from the shore by water.

Gravel. A mixture composed primarily of rock fragments 2mm (0 .08 inch) to 7.6 cm (3 inches) in diameter. Usually contains much sand.

Growing season The frost-free period of the year (see U.S. Department of Interior, National Atlas 1970:110-111 for generalized regional delineation).

Herbaceous. With the characteristics of an herb; a plant with no persistent woody stem above ground.

Hydric soil. Soil is hydric that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic (oxygen-depleted) conditions in its upper part (i.e., within the shallow rooting zone of herbaceous plants).

Hydrophyte, **hydrophytic.** Any plant growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Intermittent stream. An intermittent stream has flowing water during certain times of the year and more than in direct response from precipitation, when elevated groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water.

Jurisdictional Waters. Features that meet the definition of waters of the Unites States provided below and that fall under Corps regulations pursuant to Section 404 of the CWA are considered jurisdictional features.

Litter. Organic debris oriented to flow direction(s) (small twigs and leaves).

Man-induced wetlands. A man-induced wetland is an area that has developed at least some characteristics of naturally occurring wetlands due to either intentional or incidental human activities.

Non-Relatively Permanent Water: A non-relatively permanent water (NRPW) is defined as a tributary that is not a TNW and that typically flows for periods for less than 3 months. NRPWs are jurisdictional

when they have a documented significant nexus to TNWs. All NRPWs must also contain appropriate morphology of bed, bank and scour and be clearly connected to a TNW.

Normal circumstances. This term refers to the soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed.

Obligate hydrophytes. Species that are found only in wetlands e.g., cattail (*Typha latifolia*) as opposed to ubiquitous species that grow either in wetland or on upland-e .g., red maple (*Acer rubrum*).

Obligate wetland (OBL). Wetland indicator category; species occurs almost always (estimated probability 99%) under natural conditions in wetlands.

Other Waters of the United States. Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4).

Palustrine the Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 parts per thousand. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m (6.6 feet) at low water; and (4) salinity due to ocean-derived salts is less than 0.5 parts per thousand.

Perennial stream. A perennial stream has flowing water year-round during atypical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Ponded. Ponding is a condition in which free water covers the soil surface (e.g., in a closed depression) and is removed only by percolation, evaporation, or transpiration.

Problem area. Problem areas are those where one or more wetland parameters may be lacking because of normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events**.**

Relatively Permanent Waters of the U.S. Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months).

Scour. Soil and debris movement.

Sheetflow. Overland flow occurring in a continuous sheet; a relatively high-frequency, low-magnitude event.

Shrub. A woody plant which at maturity is usually less than 6 m(20 feet) tall and generally exhibits several erect, spreading, or prostrate stems and has a bushy appearance ; e.g., speckled alder (*Alnus rugosa*) or buttonbush (*Cephalanthus occidentalis*).

Succession. Changes in the composition or structure of an ecological community.

Traditional Navigable Waters (TNWs)."[a]ll waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." These waters are referred to in this guidance as traditional navigable waters. The traditional navigable waters include all of the "navigable waters of the United States," as defined in 33 C.F.R. Part 329 and by numerous decisions of the federal courts, plus all other waters that

are navigable-in-fact (for example, the Great Salt Lake, UT, and Lake Minnetonka, MN). Thus, the traditional navigable waters include, but are not limited to, the "navigable waters of the United States" within the meaning of Section 10 of the Rivers and Harbors Act of 1899 (also known as "Section 10 waters").

Tree. A woody plant which at maturity is usually 6 m (20 feet) or more in height and generally has a single trunk, unbranched for 1 m or more above the ground, and a more or less definite crown; e.g., red maple (*Acer rubrum*), northern white cedar (*Thuja occidentalis*).

Typical Year. Defined by the EPA and Corps as meaning when precipitation and other climactic variables are within the normal periodic range for the geographic area based on a rolling thirty-year period.

Water table. The upper surface of a zone of saturation. No water table exists where that surface is formed by an impermeable body.

Waters of the United States (WOTUS). This is the encompassing term for areas under federal jurisdiction pursuant to Section 404 of the CWA. Waters of the United States are divided into "wetlands" and "other waters of the United States."

Watershed (drainage basin). An area of land that drains to a single outlet and is separated from other watersheds by a divide.

Wetland. Wetlands are defined as "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" (33 CFR 328.3 [b], 40 CFR 230.3). To be considered under potential federal jurisdiction, a wetland must support positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

Woody plant. A seed plant (gymnosperm or angiosperm) that develops persistent, hard, fibrous tissues, basically xylem; e.g., trees and shrubs.

Xeric. Relating or adapted to an extremely dry habitat.

References

Cheatham, N.H., and J.R. Haller. 1975. An annotated list of California habitat types. Univ. of California Natural Land and Water Reserve System, unpubl. manuscript.

Cowardin, Lewis M., Virginia Carter, Francis C. Golet and Edward T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington D.C.

Curtis, Katherine E., Robert W. Lichvar. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States. ERDC/CRREL TN-10-1. U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH

Curtis, Katherine E., Robert W. Lichvar, Lindsey E. Dixon. 2011. Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region (Technical Report). U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH

Environmental Laboratory 1987. U.S. Army Corps of Engineers wetlands delineation manual. (Technical Report Y-87-1). U.S. Army Waterways Experiment Station. Vicksburg, MS.

Lichvar, R.W., and J.S. Wakeley, ed. 2004. Review of Ordinary High Water Mark indicators for delineating arid streams in the southwestern United States. ERDC/CRREL TR-04-1. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. (http://www.crrel.usace.army.mil/techpub/CRREL _Reports/reports/TR04-21.pdf).

Lichvar, R.W., D. Finnegan, M. Ericsson, and W. Ochs. 2006. Distribution of Ordinary High Water Mark (OHWM) indicators and their reliability in identifying the limits of "Waters of the United States" in arid southwestern channels. ERDC/CRREL TR-06-5. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory. (http://www.crrel.usace.army.mil/techpub/CRREL_Reports/ reports/TR06-5.pdf).

Lichvar, R.W. and S.M. McColley. 2008. A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Western Region of the Western United States. ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory.

Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. State of California 2016 Wetland Plant List: The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 2016-30: 1-17. U.S. Army Corps of Engineers. ISSN 2153 733X.

Mayer, K.E. and W.F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. California Department of Forestry and Fire Protection. Sacramento, CA.

National Oceanic and Atmospheric Administration (NOAA). 2021. National Integrated Drought Information System. U.S. Drought Monitor. Accessed online through the U.S. Drought Portal (www.drought.gov).

Natural Resources Conservation Service (NRCS). 2021. Custom Soil Resource Report for Yolo County, California. Accessed through the NRCS Web Soil Survey website (http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm).

Soil Survey Staff. 2010. Keys to Soil Taxonomy, 11th ed. USDA-Natural Resources Conservation Service, Washington, DC.

U.S. Army Corps of Engineers (Corps). 2008. Regional supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region. J.S. Wakeley, R.W. Lichvar, and C.V. Noble, ed. ERDC/EL TR-06-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center, Environmental Laboratory.

U.S. Army Corps of Engineers, South Pacific Division. 2001. Final summary report: Guidelines for jurisdictional determinations for water of the United States in the arid Southwest. San Francisco, CA: U.S. Army Corps of Engineers, South Pacific Division. (http://www.spl.usace.army.mil/regulatory/lad.htm).

U.S. Army Corps of Engineers (Corps). 2019. National Wetland Plant List; 2018 Update Information. Federal Register, Notices. Vol. 84, No. 111. Monday, June 10, 2019.

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://soils.usda.gov/

United States Department of Agriculture, Natural Resources Conservation Service. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Western Regional Climate Center, Desert Research Institute. 2020. http://www.wrcc.dri.edu. Local Climate Summary for the Davis 2 WSW Exp. Farm, California (042294) NOAA Cooperative Station.

Wetland Training Institute. 1995. Field guide for wetland delineation: 1987 Corps of Engineers manual. (WTI 95-3). Poolsville, MD.

Appendix A: Arid West Intermittent Streams OHWM Datasheet

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: CR96 over Union School Slough Bridge Replacement **Date:** 6-23-20 **Time:** 10:30am
Project Number: 17-013B **Town:** Yolo County **State:** CA
Stream: Union School Slough **Photo begin file#:** **Photo end file#:**
Investigator(s): E. Gregg

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: County Road 96 Bridge over Union School Slough

Projection: Google Earth **Datum:** WGS84
Coordinates: 38.600027°, -121.839968°

Potential anthropogenic influences on the channel system:
Channel is a straightened/realigned drainage used for ag. irrigation and is completely surrounded by agricultural land.

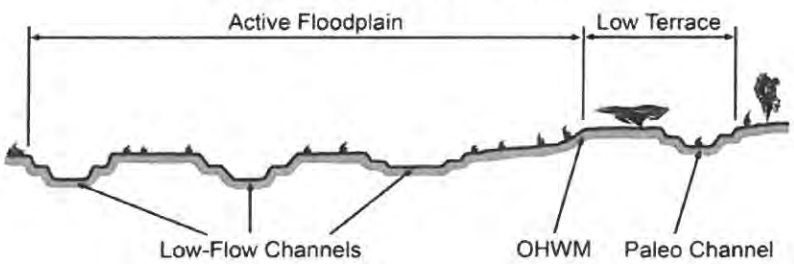
Brief site description: Channel is very channelized w/ steep banks. Banks are dominated by dense sandbar willow and blackberry vines.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

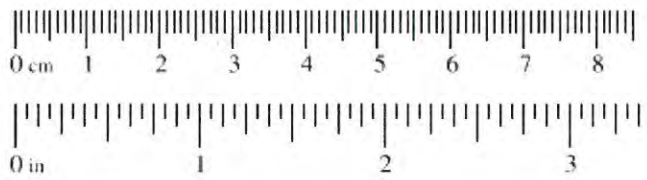


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ Digitized on computer
   - ☒ GPS
   - ☐ Other:

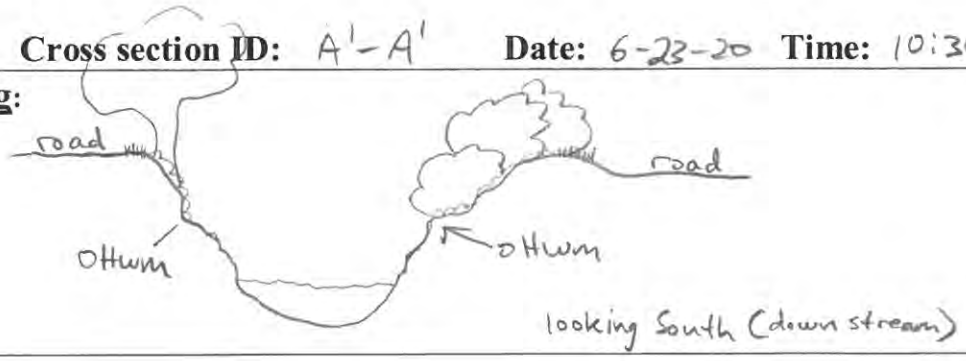
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64		
0.157	4	Pebble	
		Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039		
		Clay	Mud



Project ID: 17-013B **Cross section ID:** A'-A' **Date:** 6-23-20 **Time:** 10:30 am

Cross section drawing:



OHWM

GPS point: See transect A'-A' on map

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: Sediment deposits / debris
- ☒ Other: Exposed roots

Comments:

Floodplain unit:

☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: —

Characteristics of the floodplain unit:

Average sediment texture: Silt — water present so couldn't confirm

Total veg cover: 100 % Tree: 70 % Shrub: ____ % Herb: 30 %

Community successional stage: ↳ tree canopy cover

- ☐ NA
- ☒ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: water present
- ☐ Other: ____
- ☐ Other: ____

Comments:

Project ID: 17-013 B **Cross section ID:** A'-A' **Date:** 6-23-20 **Time:** 10:30am

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: —

Characteristics of the floodplain unit:

Average sediment texture: silt

Total veg cover: 210 % Tree: 80 % Shrub: 50 % Herb: 80 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: sediment deposits
- ☒ Other: change in vegetation cover and composition
- ☒ Other: exposed roots

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: _____

Characteristics of the floodplain unit:

Average sediment texture: _____

Total veg cover: 210 % Tree: 30 % Shrub: 90 % Herb: 90 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: change in vegetation composition
- ☐ Other: _____
- ☐ Other: _____

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: CR 96 over Union School Slough Bridge Replacement
Project Number: 17-013B
Stream: Union School Slough
Investigator(s): E. Gregg
Date: 6-23-20
Town: Yolo County
Photo begin file#:
Time: 12:30
State: CA
Photo end file#:

Y ☒ / N ☐ Do normal circumstances exist on the site?

Y ☐ / N ☒ Is the site significantly disturbed?

Location Details: County Road 96 South of bridge over Union School Slough on East side of CR 96

Projection: Google Earth **Datum:** WGS 84
Coordinates: 38.597945°, -121.839702°

Potential anthropogenic influences on the channel system:
Channel has historically been straightened. Used for agriculture irrigation. Surrounded by ag. land.

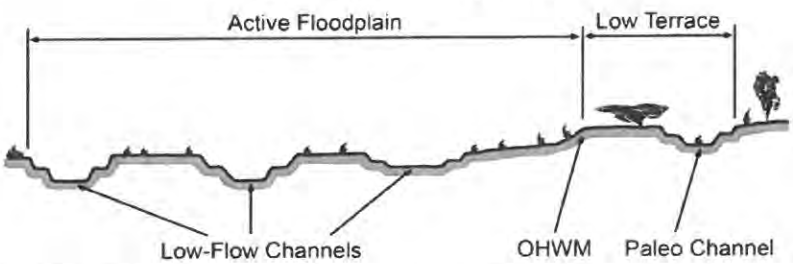
Brief site description: Slough is channelized with steep banks. Dense sandbar willow lining banks.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☒ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☒ Global positioning system (GPS)
- ☐ Other studies

- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

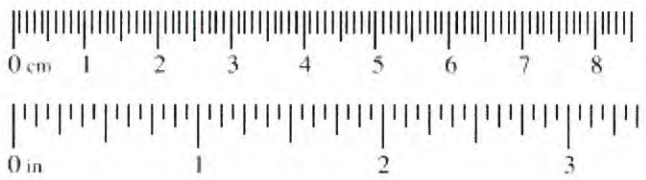


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☒ Digitized on computer
   - ☒ GPS
   - ☐ Other:

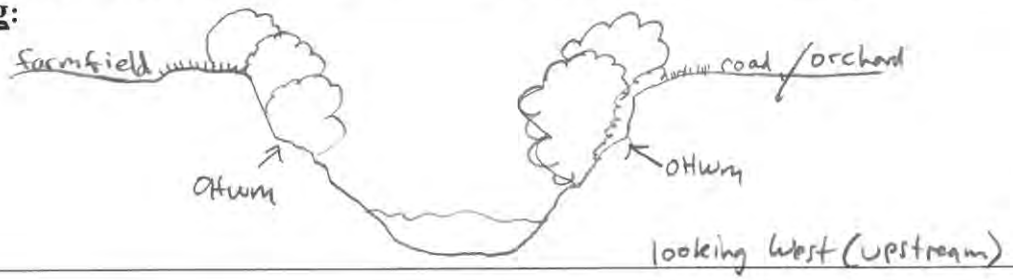
Wentworth Size Classes

Inches (in)	Millimeters (mm)	Wentworth size class	
10.08	256	Boulder	
		Cobble	Gravel
2.56	64	Pebble	
0.157	4	Granule	
0.079	2.00	Very coarse sand	
0.039	1.00	Coarse sand	
0.020	0.50	Medium sand	Sand
1/2 0.0098	0.25	Fine sand	
1/4 0.005	0.125	Very fine sand	
1/8 0.0025	0.0625	Coarse silt	
1/16 0.0012	0.031	Medium silt	
1/32 0.00061	0.0156	Fine silt	Silt
1/64 0.00031	0.0078	Very fine silt	
1/128 0.00015	0.0039	Clay	Mud



Project ID: 17-013B **Cross section ID:** B'-B' **Date:** 6-23-20 **Time:** 12:30

Cross section drawing:



OHWM

GPS point: See transect B'-B' on map

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☒ Other: Drift debris
- ☒ Other: exposed roots

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: —

Characteristics of the floodplain unit:

Average sediment texture: silt

Total veg cover: 110 % Tree: ____ % Shrub: 90 % (→ canopy cover) Herb: 20 %

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: water present
- ☒ Other: Change in veg cover
- ☐ Other: ____

Comments:

Project ID: 17-013B **Cross section ID:** B'-B' **Date:** 6-23-20 **Time:** 12:30

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: —

Characteristics of the floodplain unit:

Average sediment texture: Silt

Total veg cover: 160 % Tree: ____ % Shrub: 100 % Herb: 60 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☒ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: exposed roots
- ☒ Other: sediment deposits
- ☐ Other: ____

Comments:

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point: ____

Characteristics of the floodplain unit:

Average sediment texture: ____

Total veg cover: 190 % Tree: ____ % Shrub: 90 % Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: change in veg. composition
- ☐ Other: ____
- ☐ Other: ____

Comments:

Appendix B: NRCS Soils Map and Soil Series Description

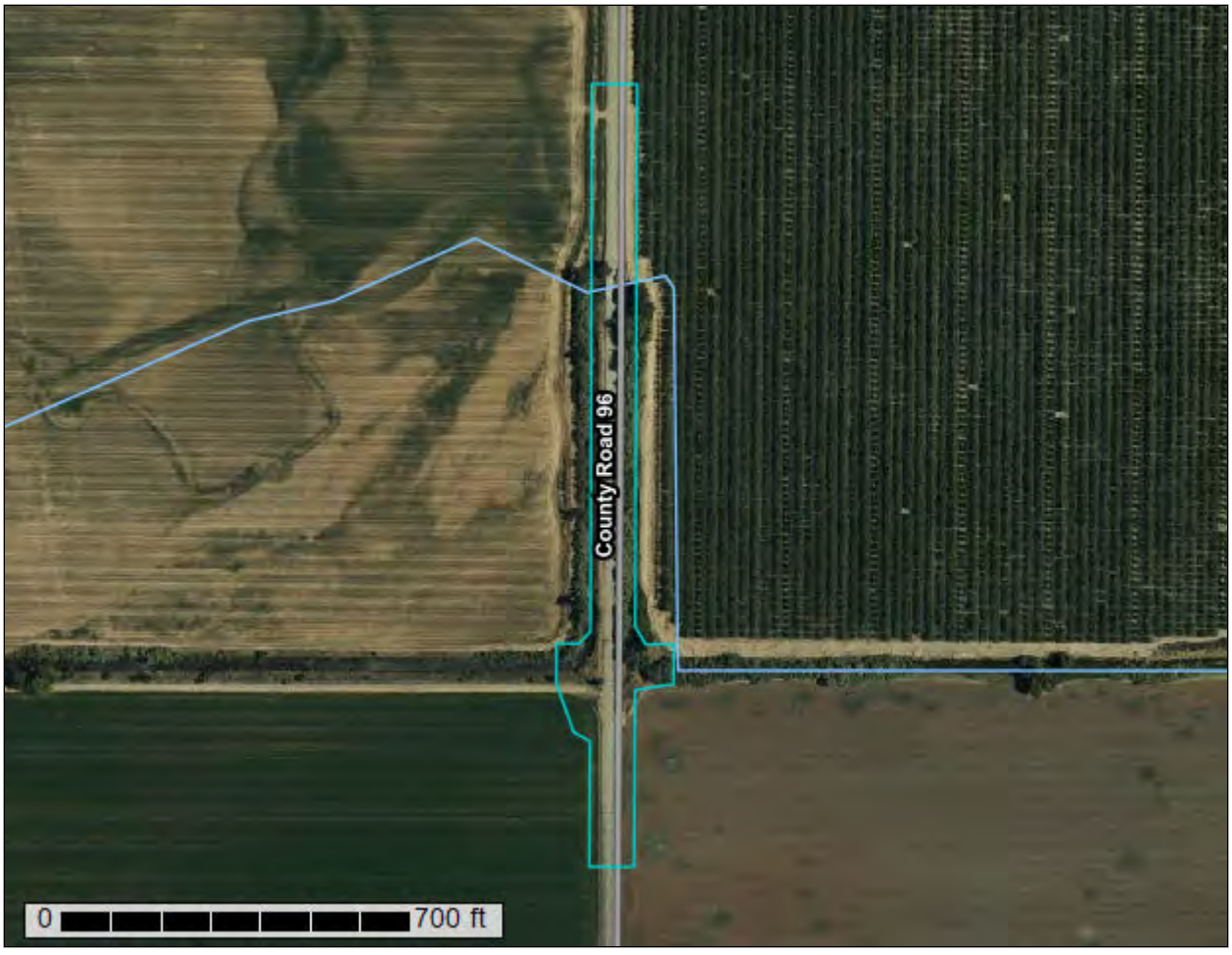
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Yolo County, California



October 26, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....8
Soil Map.....9
Legend.....10
Map Unit Legend.....11
Map Unit Descriptions.....11
Yolo County, California.....13
Ca—Capy silty clay, 0 percent slopes, MLRA 17.....13
HdA—Hillgate loam, moderately deep, 0 to 2 percent slopes.....14
Ms—Myers clay, 0 to 1 percent slopes, MLRA 17.....15
Soil Information for All Uses.....18
Soil Reports.....18
Land Classifications.....18
Hydric Soil List - All Components.....18
References.....21

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

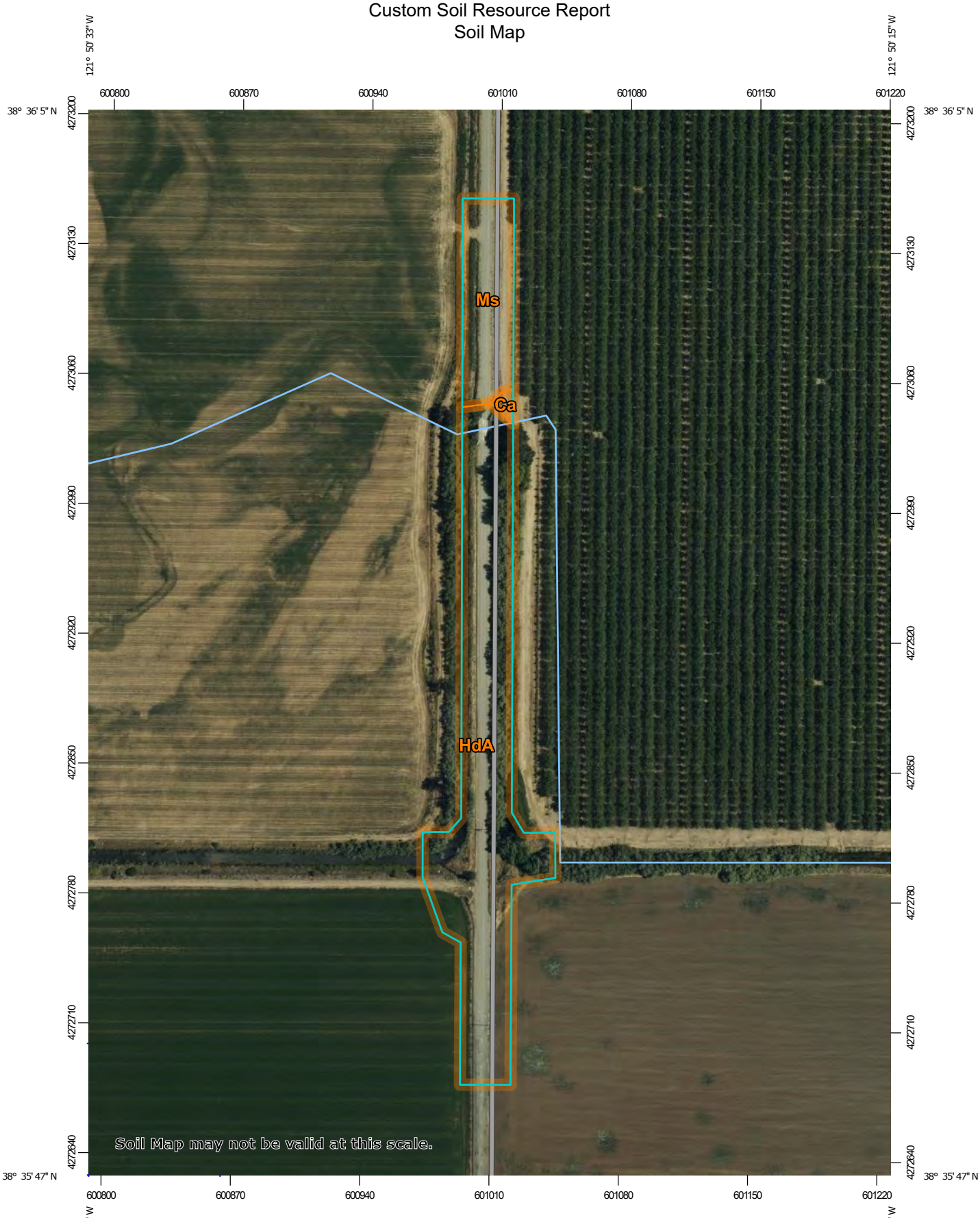
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:2,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Yolo County, California
Survey Area Data: Version 17, Sep 6, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Capy silty clay, 0 percent slopes, MLRA 17	0.0	0.9%
HdA	Hillgate loam, moderately deep, 0 to 2 percent slopes	2.9	78.8%
Ms	Myers clay, 0 to 1 percent slopes, MLRA 17	0.7	20.4%
Totals for Area of Interest		**3.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Yolo County, California

Ca—Capy silty clay, 0 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2xc8z
Elevation: 20 to 180 feet
Mean annual precipitation: 20 to 24 inches
Mean annual air temperature: 61 to 62 degrees F
Frost-free period: 317 to 326 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Capay and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Capay

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and clayey alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 11 inches: silty clay
A - 11 to 18 inches: silty clay
Bss1 - 18 to 36 inches: silty clay
Bkss - 36 to 49 inches: silty clay
B'ss2 - 49 to 64 inches: silty clay

Properties and qualities

Slope: 0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneRare
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline (0.2 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: C
Ecological site: R017XY901CA - Clayey Basin Group

Hydric soil rating: No

Minor Components

Marvin
Percent of map unit: 4 percent
Hydric soil rating: No

Willows
Percent of map unit: 4 percent
Landform: Basin floors
Hydric soil rating: Yes

Clear lake
Percent of map unit: 4 percent
Landform: Basin floors
Hydric soil rating: Yes

Myers
Percent of map unit: 3 percent
Hydric soil rating: No

HdA—Hillgate loam, moderately deep, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hdvw
Elevation: 10 to 350 feet
Mean annual precipitation: 22 inches
Mean annual air temperature: 64 degrees F
Frost-free period: 280 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Hillgate and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hillgate

Setting
Landform: Terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile
H1 - 0 to 25 inches: loam
H2 - 25 to 39 inches: clay
H3 - 39 to 70 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Tehama

Percent of map unit: 10 percent
Hydric soil rating: No

San ysidro

Percent of map unit: 5 percent
Hydric soil rating: No

Ms—Myers clay, 0 to 1 percent slopes, MLRA 17

Map Unit Setting

National map unit symbol: 2xcb8
Elevation: 30 to 410 feet
Mean annual precipitation: 18 to 23 inches
Mean annual air temperature: 62 to 62 degrees F
Frost-free period: 297 to 328 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Myers, clay, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Myers, Clay

Setting

Landform: Basin floors, alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Across-slope shape: Linear
Parent material: Clayey alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 3 inches: clay
Btss - 3 to 25 inches: clay
Bss1 - 25 to 43 inches: clay
Bss2 - 43 to 56 inches: clay
Bt - 56 to 71 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneRare
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.2 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 2.0
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Capay, clay loam

Percent of map unit: 5 percent
Landform: Basin floors
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R017XY901CA - Clayey Basin Group
Hydric soil rating: No

Altamont

Percent of map unit: 3 percent
Landform: Strath terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Arbuckle, sandy loam

Percent of map unit: 2 percent
Landform: Fan remnants
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Across-slope shape: Linear
Hydric soil rating: No

Hillgate

Percent of map unit: 2 percent
Landform: Fan remnants
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Westfan, loam

Percent of map unit: 2 percent
Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Landform: Channels
Hydric soil rating: Yes

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the

upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
    A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
    A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
    B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
    A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or

B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components–CA113-Yolo County, California					
Map symbol and map unit name	**Component/Local Phase**	**Comp. pct.**	**Landform**	**Hydric status**	**Hydric criteria met (code)**
Ca: Capy silty clay, 0 percent slopes, MLRA 17	Capay	85	Basin floors	No	—
	Marvin	4	—	No	—
	Willows	4	Basin floors	Yes	2
	Clear Lake	4	Basin floors	Yes	2
	Myers	3	—	No	—
HdA: Hillgate loam, moderately deep, 0 to 2 percent slopes	Hillgate	85	Terraces	No	—
	Tehama	10	—	No	—
	San Ysidro	5	—	No	—
Ms: Myers clay, 0 to 1 percent slopes, MLRA 17	Myers-Clay	85	Basin floors,alluvial fans	No	—
	Capay-Clay loam	5	Basin floors	No	—
	Altamont	3	Strath terraces	No	—
	Arbuckle-Sandy loam	2	Fan remnants	No	—
	Hillgate	2	Fan remnants	No	—
	Westfan-Loam	2	Alluvial fans	No	—
	Unnamed	1	Channels	Yes	4

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix E

Archaeological Survey Report / Historic Property Survey Report

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	*County*	*Federal Project. Number. (Prefix, Agency Code, Project No.)*	*Location*
03	YOL	BRLO – 5922 (103)	CR 96 Bridge over Union School

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800) and pursuant to the January 2014 *First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act* (Section 106 PA), as well as under Public Resources Code 5024 and pursuant to the January 2015 *Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Office Regarding Compliance with Public Resources Code Section 5024 and Governor's Executive Order W-26-92, addended 2019* (5024 MOU) as applicable.

Project Description:

Yolo County proposes to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough with funding made available through the Federal Highway Administration Highway Bridge Program and administered by the California Department of Transportation. The bridge was determined to be structurally deficient by California Department of Transportation as recently as 2013 and currently has a sufficiency rating of 54.9. The Project site is located at 38.5969,-121.8402 on the Merritt 7.5' quadrangle, sections 26 & 27 of T09N; R01E.

The proposed Project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is anticipated to be a single-span structure, approximately 46 feet long. The structure type is expected to be a cast-in-place, post-tensioned concrete slab. See full project description in the attached Archaeological Survey Report (ASR), attachment 1.

2. AREA OF POTENTIAL EFFECTS

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established in consultation with William Larson, Caltrans Associate Environmental Planner – Archaeology, Vlad Popko, the District 3 Local Assistance Engineer, and Mark Christison, Senior Civil Engineer, on 9/15/2021. The APE map is located in the attached Archaeological Survey Report (ASR), attachment 1, Figure 3.

The APE was originally 2.8 acres and subsequently revised to approximately 3.6 acres and includes a portion of CR 96, including approximately 350 feet of road north of the existing bridge and 1,150 feet of roadway south of the existing bridge. The APE has been established to encompass all Project related activity and ground disturbance.

 Copyright © 2020 State of California. All rights reserved.
Alteration to the title and section headings is prohibited.

Project related activity includes ground disturbance for the construction of the new bridge south of the existing structure. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders including the construction of concrete abutments and roadway approaches. A box culvert will be installed at the current crossing and overhead electrical lines will be relocated, including two utility poles, along the east side of CR 96 is anticipated as part of the Project. The proposed project improvements will remain within the County's right of way and no permanent acquisitions are anticipated. Temporary construction easements will be needed from four parcels adjacent to the bridge to facilitate driveway conforms, utility relocations, and allow construction access.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

☒ Local Government

Mark Christison, Senior Civil Engineer Yolo County Department of Community Services

☒ Native American Heritage Commission

The Native American Heritage Commission (NAHC) was contacted on October 20, 2020 to request a sacred lands file search and contact list. A result was received on October 27, 2020. The sacred lands file search was negative. See appendix b in attachment 1 for consultation record.

☒ Native American Tribes, Groups and Individuals

Contact letters were sent to all parties listed on the contact list received from the NAHC on October 30, 2020. One response was received by the Yocha Dehe Wintun Nation. The project boundary lies within the aboriginal territories of the Yocha Dehe Wintun Nation and claimed authority over the proposed project area. The tribe is not aware of any cultural sites within the project APE and expressed there are no concerns with the current project. Should cultural material or new information be discovered during the course of the project, the Yocha Dehe requests notification. Additionally the tribe recommended cultural sensitivity training prior to construction related activities. Native American consultation efforts can be found in appendix b of the attached ASR (attachment 1).

☒ Local Historical Society / Historical Preservation Groups

In support of the ASR and HPSR completed for this project, Gallaway Enterprises contacted the Archives and Records Center of the Yolo County Library, Historical Resources Management Commission, Davis Historical Society, Friends of Davis Historical Resources, Yolo County Historical Society, Davis Branch Library, and the Davis Friends of Hattie Webber Museum on July 29, 2021 for input, comments and information

 Copyright © 2020 State of California. All rights reserved.
Alteration to the title and section headings is prohibited.

regarding potential historic resources that may be affected by the project. (See Appendix B of Attachment 2)

4. SUMMARY OF IDENTIFICATION EFFORTS

- ☒ National Register of Historic Places (NRHP)
- ☒ California Register of Historical Resources (CRHR)
- ☒ National Historic Landmark (NHL)
- ☒ California Historical Landmarks (CHL)
- ☒ California Points of Historical Interest
- ☒ California Historical Resources Information System (CHRIS)
- ☒ Caltrans Historic Bridge Inventory
- ☒ Other Sources consulted:

  BLM GLO records, historic aerial imagery, USGS topographic quadrangles

- ☒ Results:

  A record search of the Northwest Information Center (NWIC) at Sonoma State University was performed by NWIC staff on November 20, 2020 (Record Search No. 20-0778). Results of the record search indicated no previous cultural resources within the APE and no cultural resources recorded within a half mile of the Project boundary. One cultural resource report is recorded within the Project boundary and no reports have been recorded within a half mile of the Project boundary. Archival research indicates the bridge was previously assessed as part of the Caltrans Statewide Historic Bridge Inventory Program. The bridge at CR 96 over Union School Slough, bridge #22C0126, was determined not eligible for the National Register of Historical Places (NRHP) as a category 5 bridge. Although the bridge was built in 1930, a bridge appears in the same alignment on quadrangle maps dating back to 1907. No structures are indicated as ever existing within the Project APE.

5. PROPERTIES IDENTIFIED

- ☒ Caltrans, in accordance with Section 106 PA Stipulation VIII.C.5 has determined there are cultural resources within the APE that were **previously determined not eligible** for inclusion in the NRHP with SHPO concurrence and those determinations remain valid. Copy of SHPO/Keeper correspondence is attached.

 Copyright © 2020 State of California. All rights reserved.
Alteration to the title and section headings is prohibited.

☒ Bridges listed as **Category 5** (previously determined not eligible for listing in the NRHP) in the Caltrans Historic Bridge Inventory are present within the APE and those determinations remain valid. Appropriate pages from the Caltrans Historic Bridge Inventory are attached.

County Road 96 over Union School Slough, Bridge No. 22C0126 (see Appendix C of the ASR for the Caltrans Historic Bridge Inventory Sheet)

6. FINDING FOR THE UNDERTAKING

☒ Caltrans, pursuant to Section 106 PA Stipulation IX.A, has determined a Finding of **No Historic Properties Affected** is appropriate for this undertaking because there are no historic properties within the APE.

7. CEQA CONSIDERATIONS

☒ Not applicable; **Caltrans is not the lead agency under CEQA**.

8. LIST OF ATTACHED DOCUMENTATION

☒ Project Regional, Location, and APE Maps: Figures 1, 2 and 3, respectively, within the attached ASR – Attachment 1

☒ Caltrans Historic Bridge Inventory Sheet: Appendix C of the ASR

☒ Archaeological Survey Report (ASR): Catherine Davis, February 2021. Archaeological Survey Report for County Road 96 Bridge Over Union School Slough Replacement Project, Yolo County, California - Attachment 1

 Copyright © 2020 State of California. All rights reserved.
Alteration to the title and section headings is prohibited.

9. HPSR PREPARATION AND CALTRANS APPROVAL

Prepared by: _____ 9/17/2021

Catherine Davis, Archaeology/Anthropology Date
PQS Archaeology, Gallaway Enterprises, Chico, CA

Reviewed for
Approval by: William E. Larson 9/20/21

William Larson, District 3 Caltrans PQS PI – Prehistoric Archaeology Date

Approval by: Laura Loeffler 09/29/21
Laura Loeffler, District 3 Caltrans Environmental Branch Chief Date

Copyright © 2020 State of California. All rights reserved.
Alteration to the title and section headings is prohibited.

Attachment 1

ARCHAEOLOGICAL SURVEY REPORT
FOR
County Road 96 Bridge Over Union School Slough Replacement Project
Yolo County, California

California Department of Transportation District 3
Yolo County, California

Prepared by: _____ Date 9/17/2021

Catherine Davis, M.A., RPA
Gallaway Enterprises
Chico, California 95928

Reviewed by: William E. Larson Date 9/20/21

William Larson, PQS: PI - Prehistoric Archaeology
Environmental Planner – Archaeology,
California Department of Transportation
District 3, Marysville

Approved by: Laura Loeffler Date 09/29/21

Laura Loeffler, Environmental Branch Chief
California Department of Transportation
District 3, Marysville

USGS Merritt 7.5'
Circa 2.8 acres (revised to 3.6 acres)
May 2021

Contents

1 INTRODUCTION 1

1.1 Project Description 1

1.2 Area of Potential Effects 4

1.3 Regulatory Context 6

1.4 Personnel 6

2 SOURCES CONSULTED 6

2.1 Summary of Methods and Results 6

2.1.1 Records Search and Results 6

2.1.2 Summary of Native American Consultation 7

2.1.3 Summary of Historical Group Consultation 7

3 BACKGROUND 8

3.1 Environment 8

3.2 Ethnography 8

3.3 Prehistory 9

3.4 History 10

4 FIELD METHODS 11

4.1 Survey Methods and Coverage 11

5 STUDY FINDINGS AND CONCLUSIONS 12

5.1 Unidentified Cultural Materials 12

5.2 Site Photos Taken on December 10, 2020 14

6 REFERENCES 15

FIGURES

Figure 1. Regional Location Map 2

Figure 2. Project Location Map 3

Figure 3. Area of Potential Effects Map 5

Figure 4. Archaeological Survey Coverage Map 13

Figure 5. Overview of the bridge approach, viewing south 14

Figure 6. Bridge damage, viewing southwest 14

APPENDICES

Appendix A ……Northwest Information Center Record Search
Appendix B ……...Native American and Historical Society Outreach
Appendix C……..Caltrans Historic Bridge Inventory Sheet

Summary of Findings

Yolo County (County) proposes to replace the existing bridge on County Road (CR) 96 Bridge over Union School Slough with funding made available through the Federal Highway Administration Highway Bridge Program and administered by the California Department of Transportation (Caltrans). The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The Project (Project) is located within the Merritt 7.5' USGS Quadrangle, Sections 26 & 27, T09N; R01E, in Yolo County, California. The Project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. CR 96 is a rural local roadway that extends between Russell Boulevard to the south and CR 27 to the north. Within the Project vicinity, CR 96 is an unpaved, gravel road, bordered primarily by agricultural land. The purpose of the Project is to improve public safety while traveling on the county road. Construction of this Project is anticipated to begin spring of 2023 and to be completed within a single construction season.

The proposed Project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur.

Cultural resources identification efforts for this report included survey of the entire APE, a records search at the Northwest Information Center (NWIC), and archival research. As a result of the record search at the NWIC, no cultural resources were recorded within the Project Area of Potential Effects (APE). The pedestrian survey resulted in a finding of no cultural resources identified within the APE. Native American outreach efforts resulted in a negative result for cultural resources.

It is Caltrans' policy to avoid cultural resources whenever possible. Further investigations may be needed if the site[s] cannot be avoided by the Project. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. Additional survey will be required if the Project changes to include areas not previously surveyed.

Archaeological Survey Report

Project Location:

Yolo County, California

Sections 26 & 27, T09N; R01E,

7.5 USGS Quadrangle Merritt

1 INTRODUCTION

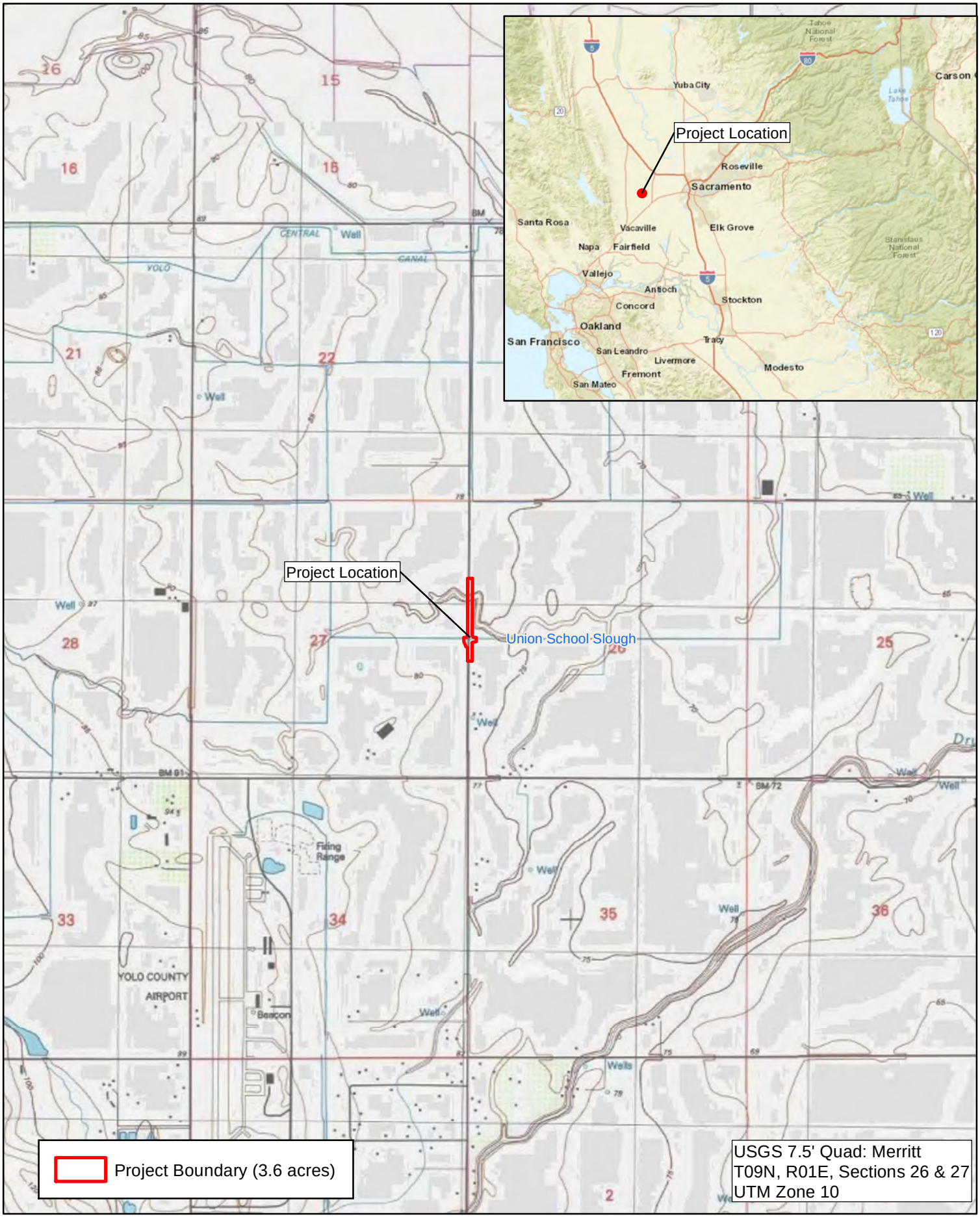
Gallaway Enterprises has been requested to conduct an Archaeological Survey Report for the County Road 96 Bridge over Union School Slough Replacement Project (Project). Yolo County proposes to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough with funding made available through the Federal Highway Administration Highway Bridge Program and administered by the California Department of Transportation. The bridge was determined to be structurally deficient by California Department of Transportation as recently as 2013 and currently has a sufficiency rating of 54.9. The Project site is located at 38.5969,-121.8402 on the Merritt 7.5' quadrangle, sections 26 & 27 of T09N; R01E (**Figure 1 & 2**).

To access the site from the Sacramento area, take I-80 W toward San Francisco. From I-80 W, take exit 70 for CA-113 N. From CA-113 N take exit 31 for CR 29 and turn right onto CR 29. Continue travelling west on CR 29 for approximately 4.1 miles and turn right onto CR 96. Continue on CR 96 for approximately 0.6 miles and you will arrive at the CR 96 Bridge. The survey area encompasses the entire existing CR 96 Bridge over Union School Slough and diversion channel culvert located to the south of the bridge.

1.1 Project Description

Yolo County proposes to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough with funding made available through the FHWA Highway Bridge Program and administered by Caltrans. The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. County Road (CR) 96 is a rural local roadway that extends between Russell Boulevard on the south and CR 27 on the north. Within the project vicinity, CR 96 is an unpaved, gravel road with an approximate width of 20 feet and no shoulders. The bridge, with an Average Daily Traffic of 200 vehicles, is bordered primarily by agricultural land. There are no posted speed limits within the project vicinity.



NORTH

1:28,500

0 0.25 0.5 Miles

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Regional Location
Figure 1

gallaway ENTERPRISES

GE: #17-013B Map Date: 09/16/21



1:2,200
0 50 100 Feet
Data Sources: ESRI, County of Yolo, USGS

NORTH

County Road 96 Union School Slough
Project Location
Figure 2

gallaway ENTERPRISES

GE: #17-013B Map Date: 09/16/2021

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 46 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has been an issue, which has only exacerbated the documented scouring at the site.

The proposed project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is anticipated to be a single-span structure, approximately 46 feet long. The structure type is expected to be a cast-in-place, post-tensioned concrete slab.

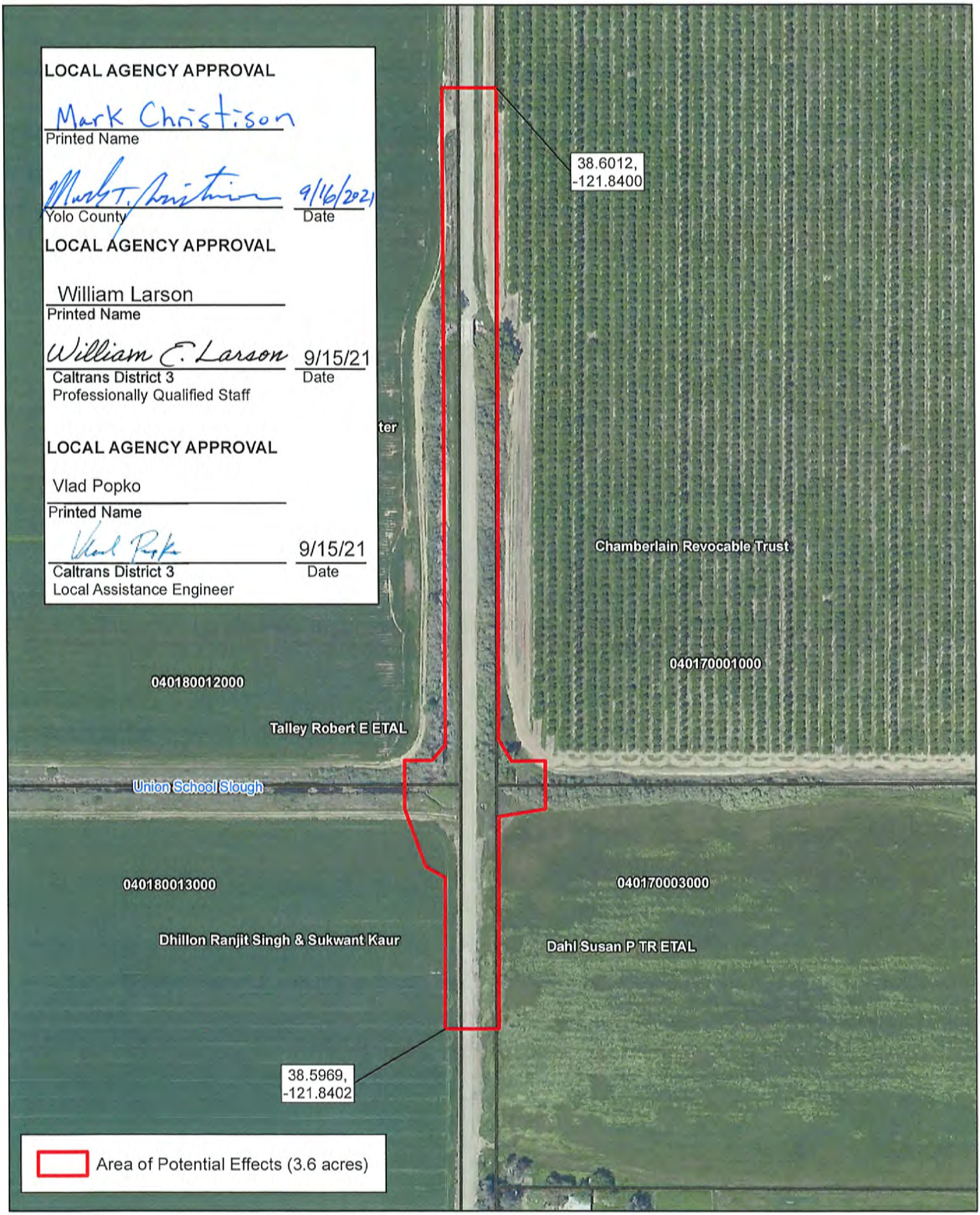
Construction of the bridge will involve excavation to a depth of 13 feet for the construction of concrete abutments, founded on driven piles. Construction of the roadway approaches will involve the placement of new roadway fill material, aggregate base, hot mix asphalt pavement, and installation of guard rail. Tree removal and removal of other vegetation along the slough will be necessary for the project. Temporary work within Union School Slough includes removal of the existing structure, installation of a box culvert at the existing bridge location, falsework erection and removal, and installation of scour countermeasures at the abutments. Temporary slough diversion is anticipated in order to complete activities within the waterway.

Relocation of overhead electrical lines, including two utility poles, along the east side of CR 96 is anticipated as part of the project. A SMUD gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be southerly of the proposed bridge location and therefore not in conflict. The proposed project improvements will remain within the County's right of way and no permanent acquisitions are anticipated. Temporary construction easements will be needed from four parcels adjacent to the bridge to facilitate driveway conforms, utility relocations, and allow construction access.

During construction, CR 96 will be closed to through traffic and a detour route made available. Vehicular traffic will be able to utilize CR 95, 27 and 29 as alternative routes. Construction is anticipated to begin in Spring 2023 and have a duration of approximately eight months.

1.2 Area of Potential Effects

The Area of Potential Effects (APE) for the Project was established in consultation with and signed by William Larson, PQS: PI - Prehistoric Archaeology, Mark Christison, Senior Civil Engineer, and Local Assistance Engineer, Vlad Popko; approved on 9/15/2021. The APE was originally 2.8 acres and subsequently revised to approximately 3.6 acres and includes a portion of CR 96, including approximately 350 feet of road north of the existing bridge and 1,150 feet of roadway south of the existing bridge. The APE has been established to encompass all Project related activity and ground disturbance (**Figure 3**).



1:2,500
0 50 100 Feet
Data Sources: ESRI, County of Yolo, USGS
NORTH

County Road 96 Union School Slough
Area of Potential Effects
Figure 3

gallaway ENTERPRISES
GE: #17-013B Map Date: 09/15/21

Project related activity includes ground disturbance for the construction of the new bridge south of the existing structure. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders including the construction of concrete abutments and roadway approaches. The construction of the abutment will require excavation to a depth of 13 feet. A box culvert will be installed at the current crossing and overhead electrical lines will be relocated, including two utility poles, along the east side of CR 96 is anticipated as part of the Project.

1.3 Regulatory Context

The proposed Project is considered a federal undertaking subject to 36 CFR Part 800, implementing regulations for Section 106 of the National Historic Preservation Act (NHPA) and conducted under the guidelines of the January 1, 2014, First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act (January 1, 2014) (PA). In addition, the Project is subject to state historic preservation laws and regulations set forth in the California Environmental Quality Act (PRC§21000 et seq.).

1.4 Personnel

Archaeological background research and fieldwork for the Project and preparation of this ASR was completed by:

- Catherine Davis; M.A. in Anthropology from California State University Chico, Chico; RPA certified; 6+ years archaeological experience in California; 4 years in cultural resource management.

2 SOURCES CONSULTED

2.1 Summary of Methods and Results

Archaeological survey report efforts included a pedestrian survey, a records search, Native American outreach, and archival research. No cultural resources were identified as a result of the pedestrian survey, Native American outreach, or archival research efforts and record search results. No information about any historical resources resulted from consultation with historical groups; at the time of writing this document, no responses from the historical society have been received in regard to this Project.

2.1.1 Records Search and Results

A record search of the Northwest Information Center (NWIC) at Sonoma State University was performed by NWIC staff on November 20, 2020 (Record Search No. 20-0778). The search included all previously recorded cultural resources and reports within a half mile radius of the APE (see Appendix A). The record search was conducted to determine if any portion of the Project has been previously surveyed and if any cultural resources have been previously recorded within the Project APE.

Results of the record search indicated no previous cultural resources within the APE and no cultural resources recorded within a half mile of the Project boundary. One cultural resource report is recorded

within the Project boundary and no reports have been recorded within a half mile of the Project boundary. Six reports classified as "other" reports have been conducted on geographical boundaries that include the Project boundary. These reports are general research reports or thesis research that generally include large portions of land and do not include pedestrian survey.

Archival research indicates the bridge was previously assessed as part of the Caltrans statewide historic bridge inventory. The CR 96 Bridge over Union School Slough, bridge #22C0126, was determined not eligible for the National Register of Historic Places (NRHP) as a category 5 bridge (see Appendix C). Although the bridge was built in 1930, a bridge appears in the same alignment on quadrangle maps dating back to 1907.

The Project area appears to have a long history of agricultural use. The land continues to be used for agricultural purposes. Historic aerial imagery shows the property surrounding the APE was used being used for agriculture as early as 1968. A bridge in the approximate location of the existing bridge is depicted on USGS historic topos dating to the Woodland 1907 USGS topographical map. Union School Slough was realigned where it runs through the Project boundary dating between 1968 and 1993. No structures are indicated as ever existing within the Project APE.

2.1.2 Summary of Native American Consultation

Native American outreach was initiated on October 20, 2020 with a record search and sacred land files request sent to the Native American heritage Commission. A result of the sacred lands file returned a negative result. All parties listed on the contact list were sent notification letters on October 30, 2020.

One response was received by the Yocha Dehe Wintun Nation THPO. The letter indicated the Yocha Dehe Wintun Nation have cultural interest in the Project location and assigned the Tribe as the authority in the proposed Project area.

The response indicated no known cultural resources within the Project boundary and stated no monitor would be required. Should any new information or items be discovered as result of Project related activity, the Yocha Dehe Wintun Nation requests notification. Additionally, the tribe recommended sensitivity training prior to construction related activity. The assigned contact information is also provided and available in Appendix B.

2.1.3 Summary of Historical Group Consultation

Gallaway Enterprises contacted local historical groups consisting of the Archives and Records Center of the Yolo County Library, Historical Resources Management Commission, Davis Historical Society, Friends of Davis Historical Resources, Yolo County Historical Society, Davis Branch Library, and the Davis Friends of Hattie Webber Museum on July 29, 2021 for input, comments and information regarding potential historic resources that may be affected by the project. No responses to the initial outreach were received by August 12, 2021. Gallaway Enterprises made additional attempts to contact the historical groups by phone and email on August 13 and 16, 2021. At the time of writing this document, no responses from the historical groups have been received in regard to this Project.

3 BACKGROUND

3.1 Environment

The Project site is located within the Central Valley in unincorporated Yolo County, California. The site is primarily composed of Union School Slough, with a narrow band of valley foothill riparian vegetation along the side of the steep banks and surrounded by active agricultural land. The site is the location of an existing structurally deficient bridge, the CR 96 Bridge over Union School Slough. The Project site is surrounded by agricultural fields including almond orchards, alfalfa fields and a fallow wheat field. The stretch of Union School Slough within the Project site is highly channelized.

The average annual precipitation is 17.55 inches and the average annual temperature is 60.35° F (WRCC 2020) in the region where the Project site is located. The Project site occurs at an average elevation of 78 feet above sea level. The overall area is sloped between 0 and 2 percent; however, the channel banks were highly channelized and had slopes of 70 percent or greater. Soils within the site were loams with a restrictive layer occurring more than 80 inches deep.

3.2 Ethnography

The APE is located in the traditional territory of the Patwin. The Patwin belong to the Wintuan family of Penutian speakers, a linguistic language family whose members are found throughout California (Moratto 1984). Wintuan language subgroups consist of Wintu (Northern Wintuan), Nomlaki (Central Wintuan) and Patwin (Southern Wintuan) (Kroeber 1925). The Patwin are traditionally subdivided into two groups, the Hill Patwin and the River Patwin. The APE lies in the traditional territory of the River Patwin who inhabited areas of high ground along the Sacramento River. Patwin were said to have had one of the largest nations of the state, consisting of the triblets (Powers 1877).

The Patwin subsistence patterns consisted of hunting, fishing, and gathering. Acorns are considered to have been a staple of the Patwin and were used for gruel, soup, and bread. Other good gathered included berries, roots, nuts, seeds, wild honey, and greens. Hunting sources included aquatic birds, quail, tule elk, rabbits, beaver, deer, fishing, and shellfish collecting. Deer were an important resource and typically caught using snares, or by community drives. Fish were another important resource to the River Patwin and salmon runs and fishing rights were regulated by the River Patwin. Fish were consumed fresh and dried to be consumed during winter months (Johnson 1978).

Villages contained several structures including houses, the menstrual hut, dance houses, granaries, and sweat houses (Kroeber 1925). Villages typically contained anywhere from four to five, to several dozen houses. Patwin technology included ground and flaked stone tools, mortars and sinew backed bows, basketry, nets, and leather working. Trade was conducted with surrounding tribes and included obsidian, marine shells, acorns, and chert tools.

At the time of contact, Native Americans in the Sacramento Valley suffered devastating consequences. Euro-American presence in the region including fur trapping expeditions through the region in 1832-33

resulted in the introduction of devastating diseases. As a result, large population and territory losses were suffered by the Patwin and neighboring Native American groups.

3.3 Prehistory

Archaeological data has shown human occupation in California, including the Sacramento Valley, for at least the past 10,000–12,000 years. Due to the varied environmental conditions throughout California, technological adaptations are greatly varied both geographically and temporally. The following cultural chronology has been synthesized from work by Moratto (1984), and Rosenthal, White, and Sutton (2007). The prehistory of this region is defined in five major periods, the Paleo-Indian, Lower Archaic, Middle Archaic, Upper Archaic, and Emergent.

The Paleo-Indian Period (11,500 BC–8550 BC) – Represented by relatively few known sites. Sites are located along the shores of large lakes. Traditionally, Paleo-Indian subsistence and land use has been tied to the hunting. Fluted Projectile points and concave base points.

The Lower Archaic Period (8550 BC–5550 BC) - Generally, drier conditions prevailed bringing about a reduction in the size and number of large pluvial lakes. Subsistence focus shifted to the consumption of plant foods. Assemblages represented by stemmed points, chipped stone crescents, and other flaked stone. Valley floor assemblages also seem to vary from the Coast Range foothills where unlike the absence of milling implements in valley floor assemblages, the Coast Range Foothills sites often contain accumulations of milling slabs, handstones, and other milling implements.

The Middle Archaic Period (5550 BC– 550 BC) – this period is represented by a marked change in environmental temperature to a warmer drier climate resulting in the declines of lakes throughout the region. Along with the shrinking of lakes came the birth of the Sacramento- San Joaquin Delta. Research done on this period has led to the identification of two settlement-subsistence adaptations, those being the foothills and valley floor adaptations. Foothill Traditions are marked by expedient cobble-based pounding, chopping, scraping, and mulling tools. Assemblages are composed of flaked and ground stone tools. Valley Traditions assemblages are rare in number especially compared to those associated with the foothill tradition. The assemblages of this tradition are marked by increasing year round settlement along the river corridors of the Sacramento and San Joaquin Rivers marked by an archaeological assemblage of specialized tools and trade objects.

Upper Archaic Period (550 BC–1100 AD) - Upper Archaic environmental conditions are marked by cooler, wetter weather, and a more stable climate. Archaeological assemblages represent more cultural diversity evidenced by differences in burials and material cultures. Bone tools, beads, ceremonial blades, polished ground stone plummets are all common in this period. Substantial village settlements evidenced by mound sites in the region.

Emergent Period (1000 AD– Historic) – The emergent period is marked by the Sweetwater and Shasta Complexes in the northern Sacramento Valley. This period is also representative of the most substantial

artifact assemblage. Several technological and social changes distinguish this period. The bow and arrow were introduced. Territorial boundaries between groups became well established and settlement patterns were highly sedentary. Exchange of goods between groups is more regular with more resources, including raw materials, entering into the exchange networks. During the latter years of this period, large-scale European settlement began to greatly impact traditional Native American lifeways.

3.4 History

The Project boundary lies within the County of Yolo, one of the original 27 counties of California. Yolo is bounded by Colusa County to the north, Solano County to the south Napa County and Lake County to the west and Sutter County and Sacramento County to the east. The Sacramento River comprises the eastern boundary of the county and a majority of the western boundary is comprised of ridgeline. Yolo County, within in the Sacramento Valley, contained land with rich soil and many came to the area to take advantage of the fertile soil. Settlement of Yolo County began with towns concentrated near the Sacramento River. The first County seat, Fremont, was founded in 1849 at the confluence of the Sacramento and Feather Rivers.

Originally, Yolo County was divided into several Mexican Land Grants. Settlement patterns in the county continued to grow through the 1800s as farmers and ranchers flocked to the county in pursuit of the rich soil and land. John Wolfskill acquired a grant of four leagues along Putah Creek approximately six miles southwest of the APE in 1842. Wolfskill introduced vines and orchards to his rancho and provided cuttings to new immigrants. In 1845 the Mexican government granted Rancho Laguna de Santos Calle east of Wolfskill's grant, to Marcos Vaca and Victor Prudon. Immigrant Joseph B. Chiles purchased a portion of the grant, upon which Davis sits, in 1849 (Larkey and Walters, 1987).

During the next several decades factors that increased stability for the residents along Putah Creek in southern Yolo County included a growing concern over transportation. Prior to 1862, Washington (later known as Broderick), a town on the western bank of the Sacramento River, had served as the County seat. On the eastern bank of the Sacramento River, just east of Washington, laid the City of Sacramento. The first bridge crossing the Sacramento River was built in 1857 and connected Washington and Sacramento. In 1869, the bridge was rebuilt to accommodate the transcontinental railroad (Kyle 1990). With the introduction of the rail line growth in the region was largely influenced by the railroad and as the route diverted traffic away from Washington and through the greater Sacramento area, Washington was incorporated into West Sacramento.

The introduction of the railroad is also credited with the establishment of the City of Davis. The Project lies four miles northwest of the City of Davis. The City of Davis is located at the junction of the Vallejo-Sacramento line, and the north bound line. The City of Davis was originally called Davisville and was named after a ranching family who owned a ranch that covered 12,000 acres of land, a portion of which the City would later be built on. The California Pacific Railroad purchased 7,000 acres of the ranch in the 1868 to establish a stop on the railroad line. This route was an important transport route connecting the agricultural lands with the Bay Area and was later joined by a rail line running north-south. The original

stop, called the Town of Davisville became an important hub of transportation. After a bid to be the location of a university farm was won,the town newspaper renamed itself the Davis Enterprise and in 1907 the town post office officially adopted the name change. In 1908, Berkley's College of Agriculture opened a university state farm near Davis increasing the population and infrastructure to the area. After a fire in the town in 1916, the town expanded its civic services and infrastructure, and the City of Davis was incorporated in 1917. The University would continue to play a large role in the development of the City with the inclusion of a four year college degree program (Larkey 1980).

Just southwest of the Project lies the Yolo County Airport. The airport is a general aviation airport four miles west of the City of Davis. Originally termed the Winters-Davis Flight Strip, the airport was built in in 1941 with construction completing in 1942. The facility was a military training ground on land acquired from a local farming family. The airport is also famously associated with assisting in the training of the Tokyo Raiders attack in 1942 known as the Doolittle Raid. Additional facilities included an operation tower, five bomb fuze storage magazines, thirteen bomb storage revetments, temporary troop quarters and various associated structures. The flight strip was assigned inactive status on December 30, 1945 (USACE 1995). In 1949 the airstrip was placed into the administrative control of Yolo County and renamed the Yolo County International Airport. While the airport was named the Yolo County airport, the site did not function as a traditional airport. In 1974, Yolo Aviation Inc. leased 14.9 acres of the airport and began small scale flight operations for activities such as crop dusting, and for instructional use (USACE 1995; Gallaudet, 2021).

4 FIELD METHODS

4.1 Survey Methods and Coverage

A pedestrian survey was completed on December 10, 2020 by Gallaway Enterprises Archaeologist, Catherine Davis. Due to the narrow Project boundary, the pedestrian survey was completed in 5 meter transects (**Figure 4**). The weather was sunny with no cloud cover.

The entire APE is comprised of paved road, agricultural land, or private residence approaches. Areas within the APE that contained dense ground cover where surveyed using surface scrapings and the portion of Union School Slough running through the Project boundary was difficult to access and had low visibility. Additionally the eastern portion of the Project APE by the current bridge contained thick tree coverage and ground coverage and visibility was poor in this region, a posted sign reading 'Private Property' lay just southeast of the existing bridge. The roadway within the APE is very narrow unpaved gravel roadway and abuts private property throughout the APE (**Figure 5**). The existing bridge is in very poor condition with graffiti and broken concrete (**Figure 6**). A great deal of trash has been disposed underneath the existing bridge. A large piece of corrugated metal piping lies rusted and bent along the western side of the Project boundary. Approximately 95 percent of the Project APE consists of disturbed surface. No archaeological sites were identified during the pedestrian survey.

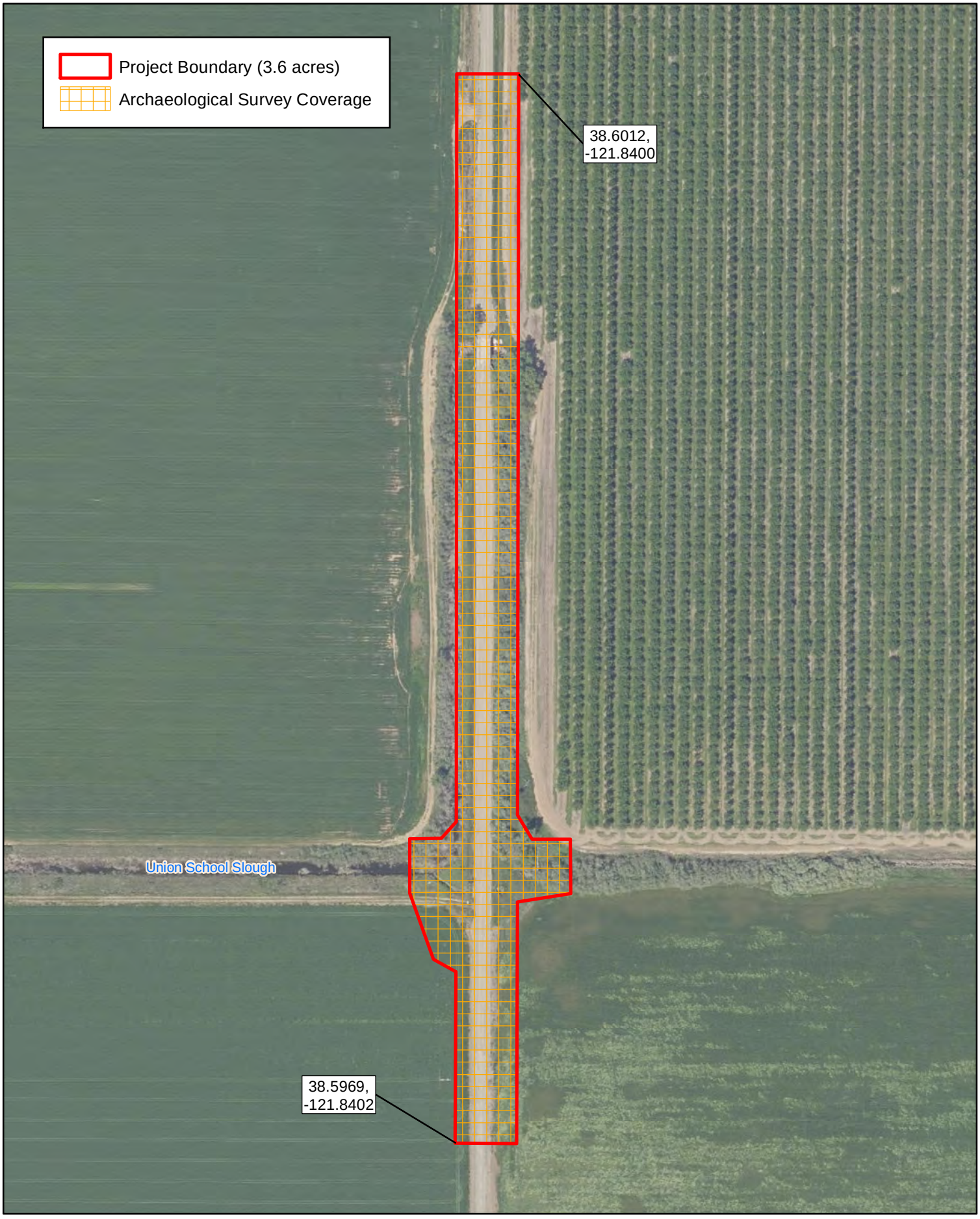
5 STUDY FINDINGS AND CONCLUSIONS

As a result of the pedestrian survey no previously unidentified archaeological sites were identified. Native American outreach likewise returned a negative result for culturally sensitive material or known archaeological sites. A record search returned a finding of no previously recorded archaeological sites within the Project boundary and no resources previously identified within a half mile of the Project location.

Archival research indicates the bridge was previously assessed as part of the Caltrans statewide historic bridge inventory. The CR 96 Bridge over Union School Slough, bridge #22C0126, was determined not eligible for the National Register of Historic Places (NRHP) as a category 5 bridge (see Appendix C).

5.1 Unidentified Cultural Materials

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.



NORTH

1:2,200

0 50 100 Feet

Data Sources: ESRI, County of Yolo, USGS

County Road 96 Union School Slough
Archaeolgical Survey Coverage
Figure 4

gallaway ENTERPRISES

GE: #17-013B Map Date: 09/16/2021

5.2 Site Photos Taken on December 10, 2020



Figure 5. Overview of the bridge approach, viewing south



Figure 6. Bridge damage, viewing southwest

Appendix A

Northwest Information Center Record Search

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLATA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

11/20/2020 NWIC File No.: 20-0778

Catherine Davis
Gallaway Enterprises
117Meyers Street, Suite 120
Chico, CA 95928

Re: County Road 96 ion School Slough

The Northwest Information Center received your record search request for the project area referenced above, located on the Merritt USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a 0.5 mi. radius:

Resources within project area:	None listed
Resources within 0.5 mi. radius:	None listed
Reports within project area:	S-595*, 9795*, 15333, 17835*, 30204*, 32596*, 51085*
Reports within 0.5 mi. radius:	None listed

Resource Database Printout (list):		☐ enclosed	☐ not requested	☒ nothing listed
Resource Database Printout (details):		☐ enclosed	☐ not requested	☒ nothing listed
Resource Digital Database Records:		☐ enclosed	☐ not requested	☒ nothing listed
Report Database Printout (list):		☒ enclosed	☐ not requested	☐ nothing listed
Report Database Printout (details):		☒ enclosed	☐ not requested	☐ nothing listed
Report Digital Database Records:		☒ enclosed	☐ not requested	☐ nothing listed
Resource Record Copies:		☐ enclosed	☐ not requested	☒ nothing listed
Report Copies:		☒ enclosed	☐ not requested	☐ nothing listed
OHP Built Environment Resources Directory:		☒ enclosed	☐ not requested	☐ nothing listed
Archaeological Determinations of Eligibility:		☐ enclosed	☐ not requested	☒ nothing listed
CA Inventory of Historic Resources (1976):	**	☐ enclosed	☐ not requested	☐ nothing listed
Caltrans Bridge Survey:		☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	**	☐ enclosed	☐ not requested	☐ nothing listed

Historical Literature:		☐ enclosed	☐ not requested	☒ nothing listed
Historical Maps:		☒ enclosed	☐ not requested	☐ nothing listed
Local Inventories:	***	☐ enclosed	☐ not requested	☐ nothing listed
GLO and/or Rancho Plat Maps:		☒ enclosed	☐ not requested	☐ nothing listed

Notes:
*These are in our "Other Reports' category, no PDFs requested.
** Sent with 20-0777: County Rd 49 ovr Hamilton Crk.
*** Sent with 20-0778:CR 96 Union School Slough

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

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

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

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

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

Sincerely,

Annette Neal

Researcher

Appendix B

Native American and Historical Society Outreach

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
Marshall McKay
Wintun

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

October 27, 2020

Catherine Davis, MA, RPA
Gallaway Enterprises

Via Email to: cate@gallawayenterprises.com

Re: County Road 96 Over Union School Slough Project, Yolo County

Dear Ms. Davis:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Sarah.Fonseca@nahc.ca.gov.

Sincerely,

Sarah Fonseca
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Yolo County
10/27/2020

Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
Clifford Mota, Tribal Preservation Liaison
3730 Highway 45 Wintun
Colusa, CA, 95932
Phone: (530) 458 - 8231
cmota@colusa-nsn.gov

Cachil Dehe Band of Wintun Indians of the Colusa Indian Community
Daniel Gomez, Chairman
3730 Highway 45 Wintun
Colusa, CA, 95932
Phone: (530) 458 - 8231
dgomez@colusa-nsn.gov

Cortina Rancheria - Kletsel Dehe Band of Wintun Indians
Charlie Wright, Chairperson
P.O. Box 1630 Wintun
Williams, CA, 95987
Phone: (530) 473 - 3274
Fax: (530) 473-3301

Yocha Dehe Wintun Nation
Isaac Bojorquez, Director of Cultural Resources
PO Box 18 Brooks, CA 95606 Patwin
Phone: (530) 796 - 0103
ibojorquez@yochadehe-nsn.gov

Yocha Dehe Wintun Nation
Leland Kinter, THPO
P.O. Box 18 Patwin
Brooks, CA, 95606
Phone: (530) 796 - 3400
thpo@yochadehe-nsn.gov

Yocha Dehe Wintun Nation
Anthony Roberts, Chairperson
P.O. Box 18 Patwin
Brooks, CA, 95606
Phone: (530) 796 - 3400
aroberts@yochadehe-nsn.gov

Yocha Dehe Wintun Nation
Laverne Bill, Site Protection Manager
P.O. Box 18 Patwin
Brooks, CA, 95606
Phone: (530) 796 - 3400
lbill@yochadehe-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed County Road 96 Over Union School Slough Project, Yolo County.

Communication Log	
	Initial Outreach Letter
Daniel Gomez, Chairperson, Cachil Dehe Band of Wintun Indians of the Calusa Indian Community	30-Oct-20
Clifford Mota, Tribal preservation Liasion, Cachil Dehe Band of Wintun Indians of the Colusa Indian Community	30-Oct-20
Charlie Wright, Chairperson, Cortina Rancheria - Kletsel Dehe Band of Wintun Indians	30-Oct-20
Anthony Roberts, Chairperson, Yocha Dehe Wintun Nation	30-Oct-20
Leland Kinter, THPO, Yocha Dehe Wintun Nation	30-Oct-20
Laverne Bill, Site Protection Manager, Yocha Dehe Wintun Nation	30-Oct-20
Isaac Bojorquez, Director of Cultural Resources, Yocha Dehe Wintun Nation	30-Oct-20

gallaway
ENTERPRISES

117 Meyers Street • Suite 120 • Chico CA 95928 • 530-332-9909

October 30, 2020

Laverne Bill, Site Protection Manager
Yocha Dehe Wintun Nation
P.O. Box 18
Brooks, CA, 95606

RE: County Road 96 over Union School Slough Bridge Replacement Project

Dear Mr. Bill;

Gallaway Enterprises has been requested to conduct an archaeological survey of the County Road 96 over Union School Slough Bridge Replacement Project (Project) consisting of approximately 2.8 acres. The project site is located within the southern region of Yolo County, between County Road 27 and County Road 29. County Road 96 is a rural local roadway that extends between Russell Boulevard on the south and County Road 27 on the north. Within the project vicinity, County Road 96 is an unpaved, gravel road, is bordered primarily by agricultural land. Yolo County proposes to replace the existing bridge on County Road 96 crossing over Union School Slough with funding made available through the Federal Highway Administration Highway Bridge Program and administered by the California Department of Transportation.

Gallaway Enterprises is contacting the Yocha Dehe Wintun Nation to aid in the identification of any cultural resources within the project boundary or any initial concerns with the proposed project. Please notify us within 14 days with any pertinent information you may have regarding the project location. We value your assistance and look forward to your response. Please contact Catherine Davis at Gallaway Enterprises with any questions or concerns you may have. Thank you for your attention to this matter.

Sincerely,

Catherine Davis, M. A., RPA
Gallaway Enterprises, Inc.
530.332.9909 ext. 206
Cate@gallawayenterprises.com
117 Meyers St. Suite 120
Chico, Ca. 95928

Encl. *County Road 96 over union School Slough Replacement Project Project Location Map.*

DocuSign Envelope ID: 7778A577-28BB-469D-B91F-2E9665A7EDF9

YOCHA DEHE
CULTURAL RESOURCES

November 23, 2020

Gallaway Enterprises
Attn: Catherine Davis, M. A., RPA
117 Meyers St. Suite 120
Chico, CA 95928

RE: CR96 Union School Slough Bridge Project YD-02042020-02

Dear Ms. Davis:

Thank you for your project notification letter dated, October 30, 2020, regarding cultural information on or near the proposed CR96 Union School Slough Bridge Project, Yolo County. We appreciate your effort to contact us and wish to respond.

The Cultural Resources Department has reviewed the project and concluded that it is within the aboriginal territories of the Yocha Dehe Wintun Nation. Therefore, we have a cultural interest and authority in the proposed project area.

Based on the information provided, Yocha Dehe Wintun Nation is not aware of any known cultural resources near this project site and a cultural monitor is not needed. However, if any new information is available or cultural items are found, please contact the Cultural Resources Department. In addition, we recommend cultural sensitivity training for any pre-project personnel. Please contact the individual listed below to schedule the cultural sensitivity training, prior to the start of the project.

Laverne Bill, Cultural Resources Manager
Yocha Dehe Wintun Nation
Phone: (530) 723-3891
Email: lbill@yochadehe-nsn.gov

Please refer to identification number YD – 02042020-02 in correspondence concerning this project.

Thank you for providing us the opportunity to comment.

Sincerely,

DocuSigned by:
5C39F9463F58429...
Tribal Historic Preservation Officer

Organizations/ Individuals Receiving Letter Soliciting Input Regarding Historic Resources

Ike Nijoku, Staff Planner
Historical Resources Management Commission
City of Davis
23 Russell Blvd Suite 2
Davis, CA 95616

Mark Fink
Yolo County Archives
226 Buckeye Street
Woodland, CA 95695

John Lofland,
Davis Historical Society
jlofland@dcn.org

Tim Allis
Friends of Davis Historical Resources
timallis@ucdavis.edu

Kathy Harryman, President
Yolo County Historical Society
PO Box 1447
Woodland, CA 95776

Mary L. Stephens - Davis Branch Library
315 E 14th Street
Davis, CA 95616

Jim Becket
Davis Friends of Hattie Webber Museum
jimbecket@sbcglobal.net

Communication Log	Mail/Email	
CR 96 Bridge -Union School Slough	**Initial Outreach Letter**	**Follow Up**
Ike Nijoku, Staff Planner, Historical Resources Management Commission, City of Davis	Mailed 7/29/2021	Ike Nijoku called on 8/16/21 and no comments
Mark Fink- Yolo County Archives	Mailed 7/29/2021	Mark called on 8/16/21 and no Comments
John Lofland, Davis Historical Society	Emailed 7/29/2021	John emailed on 8/16/21 and no comments
Tim Allis, Friends of Davis Historical Resources	Emailed 7/29/2021	Email Undeliverable
Kathy Harryman, President,Yolo County Historical Society	Mailed 7/29/2021	Left Msg 8/13/21 and 8/16/2021
Mary L. Stephens - Davis Branch Library	Mailed 7/29/2021	Left Msg 8/13/21 and 8/16/2021
Jim Becket, Davis Friends of Hattie Webber Museum	Emailed 7/29/2021	Left Msg 8/13/21 and 8/16/2021

Appendix C

Caltrans Historic Bridge Inventory Sheet

Structure Maintenance & Investigations

Historical Significance - Local Agency Bridges



District 03

Yolo County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	
22C0075	COTTONWOOD SLOUGH	1.78 MI W OF CO RD 86A	5. Bridge not eligible for NRHP	1932	1956
22C0076	WILLOW SLOUGH BYPASS	Just North of CR #29	5. Bridge not eligible for NRHP	1997	
22C0078	CHICKAHOMINY SLOUGH	0.7 MI W OF C.R. #95	5. Bridge not eligible for NRHP	1983	
22C0079	DRY SLOUGH	JUST EAST OF C.R. #95	5. Bridge not eligible for NRHP	1959	
22C0080	DRY SLOUGH	0.2 MI WEST OF C.R. #96	5. Bridge not eligible for NRHP	1959	
22C0081	WEST ADAMS CANAL	1 MILE NORTH OF CAPAY	5. Bridge not eligible for NRHP	1930	
22C0082	GOODNOW SLOUGH	3.0 MI NORTH OF CAPAY	5. Bridge not eligible for NRHP	1925	
22C0083	SOUTH FORK OAT CREEK	0.4 MI N OF CR # 13	5. Bridge not eligible for NRHP	2006	
22C0084	SYCAMORE SLOUGH	0.10 Mi S of Route 45	5. Bridge not eligible for NRHP	1961	
22C0085	BRANCH PUTAH CREEK	0.1 MI E OF C.R. #103	5. Bridge not eligible for NRHP	1921	
22C0086	UNION SCHOOL SLOUGH	0.2 MI N OF C.R. #29	5. Bridge not eligible for NRHP	1980	
22C0087	SOUTH FORK WILLOW SLOUGH	0.71 MI N OF C.R. 27	5. Bridge not eligible for NRHP	1980	
22C0088	WILLOW SLOUGH	1.5 MI W OF CO RD 98	5. Bridge not eligible for NRHP	1987	
22C0091	CACHE CREEK	0.12 MI FR S.H. 16	5. Bridge not eligible for NRHP	1930	
22C0094	PINE CREEK	0.14 MI N/O SH 16	5. Bridge not eligible for NRHP	1960	
22C0095	HAMILTON CREEK	0.11 MI N/O C. R. 50	5. Bridge not eligible for NRHP	1911	
22C0096	SALT CREEK	0.60 MI N/O SH 16	5. Bridge not eligible for NRHP	1940	
22C0098	WINTERS CANAL	0.32 MI E OF C.R. 85B	5. Bridge not eligible for NRHP	1939	
22C0100	WINTERS CANAL	0.64 MI S C.R. #23	5. Bridge not eligible for NRHP	1950	
22C0102	COTTONWOOD SLOUGH	0.14 MI W OF C.R. #86A	5. Bridge not eligible for NRHP	1917	
22C0103	WINTERS CANAL	0.24 MI E/O CR #87	5. Bridge not eligible for NRHP	1955	
22C0105	CHICKAHOMINY SLOUGH	2.53 MI W OF C. R. 88	5. Bridge not eligible for NRHP	1917	
22C0106	CREEK S14	0.01 MI S OF S.H. 128	5. Bridge not eligible for NRHP	1930	
22C0107	COTTONWOOD SLOUGH	0.55 MI S OF C. R. 23	5. Bridge not eligible for NRHP	1930	
22C0108	UNION SCHOOL SLOUGH	0.57 MI W/O CR #88	5. Bridge not eligible for NRHP	1955	
22C0109	UNION SCHOOL SLOUGH	0.96 MI S OF C.R. #27	5. Bridge not eligible for NRHP	1916	
22C0110	WINTERS CANAL	0.15 MI N OF C.R. #29	5. Bridge not eligible for NRHP	1930	
22C0111	UNION SCHOOL SLOUGH	0.67 MI W OF C.R. #91B	5. Bridge not eligible for NRHP	1940	
22C0112	WINTERS CANAL	0.13 MI E OF C.R. #88	5. Bridge not eligible for NRHP	1920	
22C0113	CHICKAHOMINY SLOUGH	0.51 MI N OF C.R. #31	5. Bridge not eligible for NRHP	1957	
22C0115	SOUTH FORK WILLOW SLOUGH	0.29 E OF C.R.93	5. Bridge not eligible for NRHP	1930	
22C0116	NORTH FORK WILLOW SLOUGH	0.22 MI E OF C.R. #95	5. Bridge not eligible for NRHP	1930	
22C0117	DRY SLOUGH	0.77 MI W OF C.R. #98	5. Bridge not eligible for NRHP	1930	
22C0118	CHICKAHOMINY SLOUGH	0.27 MI W OF C.R. 91A	5. Bridge not eligible for NRHP	1976	
22C0119	DRY SLOUGH	0.77 MI N OF I 505 RAMP	5. Bridge not eligible for NRHP	1970	
22C0120	DRY SLOUGH	0.83 MI N OF SR 128	5. Bridge not eligible for NRHP	1947	
22C0121	DRY SLOUGH	0.06 MI N OF C.R. #32	5. Bridge not eligible for NRHP	1913	
22C0125	DRY SLOUGH	0.06 MI N OF C.R. #31	5. Bridge not eligible for NRHP	1930	
22C0126	UNION SCHOOL SLOUGH	1.38 MI S OF C.R. #27	5. Bridge not eligible for NRHP	1930	
22C0127	DRY SLOUGH	0.45 MI N OF C.R. #31	5. Bridge not eligible for NRHP	1929	
22C0128	DRY SLOUGH	0.34 MI N OF C.R.29	5. Bridge not eligible for NRHP	1975	
22C0129	BRETONA CREEK	0.50 MI E OF C.R. #91B	5. Bridge not eligible for NRHP	1940	
22C0131	WILLOW SPRING CREEK	0.04 Mi West of CR #94	5. Bridge not eligible for NRHP	1940	

6 REFERENCES

California, State of
1970 Public Resources Code, Section 21000, et seq. (CEQA), and The California Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines, as amended December 28, 2018)

Gallaudet, Bruce
2021 Yolo at war: Warbirds left their mark at airport. The Davis Enterprises, https://www.davisenterprise.com/news/local/yolo-county-airport-once-hosted-doolittles-raiders/, accessed 2/15/2021

Hoover, Mildred B., Hero E. Rensch, and Ethal G. Rensch
1990 Historic Spots in California. Fourth Edition Revised by Douglas E. Kyle. Stanford University Press. Stanford, California

Johnson, Patti J.
1978 Patwin. In Handbook of North American Indians, Volume 8, California, edited by Robert F. Heizer, pp. 350-360. Smithsonian Institution, Washington, D.C.

Kroeber, A.L.
1916 California Place Names of Indian Origin. University of California Publications *in* American Archaeology and Ethnology 12(2):31-69

1925 Handbook of the Indians of California. Bureau of American Ethnography, Bulletin 78. Washington, D.C.: Smithsonian Institution. DuBois, Cora

Kyle, Douglas E. ed.
2002 Historic Spots in California, 5th Edition. Stanford: Stanford University Press

Larkey Joann L. and Shipley Walters
1987 *Yolo County: Land of Changing Patterns.* Northridge, CA: Windsor Publications

Larkey, Joann Leach
1980 *Davisville '68 The History and Heritage of The City of Davis, Yolo County California.* Davis, CA: Davis Historical and Landmarks Commission, 1969 reprint

Morratto, Michael J.
1984 California Archaeology. Academic Press, Inc. Orlando, Florida

Powers, Stephen
1877 Tribes of California. Contributions to North American Ethnology 3. U.S. Geographic and Geological Survey of the Rocky Mountain Region, Washington. Somerset Publishers, Inc.

Rosenthal, Jeffrey S., Gregory G. White, and Mark Q. Sutton
2007 The Central Valley: A view from the Catbird's Seat *in* California Prehistory; Colonization, Culture, and Complexity. Ed. Terry L. Jones and Kathrym A. Klar

State of California Office of Historic Preservation
2020 California Register of Historical Resources, Yolo County. Electronic Document. https://ohp.parks.ca.gov/ListedResources/?view=county&criteria=57, accessed 12-15-2020

United States Army Corps of Engineers St. Louis District
1995 Yolo County Airport Formerly Winters-Davis Flight Strip, Yolo County California. Project No. J09CA009402, http://www.militarymuseum.org/WintersASR.pdf, accessed 2-15-2021

United States Department of the Interior; Bureau of Land Management
2020 Bureau of Land Management; General Land Office Records. https://glorecords.blm.gov/results/default.aspx?searchCriteria=type=patent|st=CA|cty=|twp_nr=08|twp_dir=N|rng_nr=01|rng_dir=E|sec=3|m=21|sp=true|sw=true|sadv=false, accessed 12-07-2020

United States Department of the Interior, National Park Service
2020 National Register of Historic Places. Electronic Document https://npgallery.nps.gov/NRHP/SearchResults/, accessed 12-15-2020

United States Geological Survey [USGS].
1941 Woodland, California 60-minunte quadrangle map. Electronic document https://livingatlas.arcgis.com/topoexplorer/index.html /, accessed 12-15-2020

Western Regional Climate Center,

2020 Desert Research Institute http://www.wrcc.dri.edu. Local Climate Summary for the Davis 2 WSW Exp. Farm, California (042294) NOAA Cooperative Station.

Appendix F

Floodplain Evaluation Report

County Road 96 Bridge Over Union School Slough Project
Yolo County, California
Federal-Aid Project No. BRLO-5922(103)
Existing Bridge No. 22C0126

Floodplain Evaluation Report



Source: Caltrans, 2011

Prepared for:

Prepared by:

January 2022

This page intentionally left blank

County Road 96 Bridge Over Union School Slough Project
Yolo County, California
Federal-Aid Project No. BRLO-5922(103)
Existing Bridge No. 22C0126

Floodplain Evaluation Report

Submitted to:
County of Yolo

This report has been prepared by or under the supervision of the following Registered Engineer. The Registered Civil Engineer attests to the technical information contained herein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

Han-Bin Liang, Ph.D., P.E.
Registered Civil Engineer



1/17/2022
Date

January 2022

This page intentionally left blank

Table of Contents

Executive Summary iii
Acronyms v
Technical Information for Location Hydraulic Study vi
Floodplain Evaluation Report Summary viii
1 General Description 1
1.1 Project Description 1
1.2 Study Purpose 7
1.3 Regulatory Setting 7
1.3.1 Executive Order 11988 (Floodplain Management, 1977) 7
1.3.2 California's National Flood Insurance Program 7
1.3.3 Yolo County Floodplain Data 8
1.4 Design Standards 8
1.4.1 FEMA Standards 8
1.4.2 Floodplain Regulations 8
1.4.3 Hydraulic Design Criteria 9
1.5 Traffic 10
1.6 Vertical Datum 10
2 Affected Environment 11
2.1 Geographic Location 11
2.2 Watershed Description 11
2.3 FEMA Floodplains 11
3 Hydrology and Hydraulics 14
3.1 Hydrologic Assessment 14
3.2 Hydraulic Assessment 15
3.2.1 Hydraulic Model Development 15
3.2.2 Hydraulic Model Results 17
3.2.3 Bridge Freeboard 20
4 Project Evaluation 21
4.1 Risk Associated with the Proposed Action 21
4.1.1 Change in Land Use 21
4.1.2 Change in Impervious Surface Area 21
4.1.3 Fill Inside the Floodplain 21
4.1.4 Change in the 100-Year Water Surface Elevation 21
4.2 Summary of Potential Encroachments 22
4.2.1 Potential Traffic Interruptions for the Base Flood 22
4.2.2 Potential Impacts on Natural and Beneficial Floodplain Values 22
4.2.3 Support of Probable Incompatible Floodplain Development 23
4.2.4 Longitudinal Encroachments 23
5 Avoidance, Minimization, and/or Mitigation Measures 24
5.1 Minimize Floodplain Impacts 24
5.2 Restore and Preserve Natural and Beneficial Floodplain Values 24
5.3 Alternatives to Significant Encroachments 24
5.4 Coordination with Local, State, and Federal Water Resources and Floodplain Management Agencies 25

6 References 26

Figures

Figure 1. Project Location Map 3
Figure 2. Project Vicinity Map 4
Figure 3. Project Aerial Map 5
Figure 4. General Plan for the Proposed Bridge 6
Figure 5. Project Watershed Map 12
Figure 6. FEMA FIRM 13
Figure 7. Cross Section Locations 16
Figure 8. Upstream Face of Existing Bridge, Looking Downstream (East) 18
Figure 9. Upstream Face of Proposed Bridge, Looking Downstream (East) 18
Figure 10. Union School Slough 100-Year Water Surface Profile at CR 96 19

Tables

Table 1. Peak Discharge for Union School Slough from FEMA FIS 14
Table 2. Project Watershed Basin Characteristics 15
Table 3. Union School Slough 100-Year Water Surface Elevations 17
Table 4. Union School Slough 100-Year Water Surface Elevations 20
Table 5. Beneficial Use List 23

Appendices

Appendix A Federal Emergency Management Agency Flood Insurance Rate Maps
Appendix B HEC-RAS Results Output: Existing Condition
Appendix C HEC-RAS Results Output: Proposed

Executive Summary

The County of Yolo (County) is proposing to replace the existing bridge on County Road (CR) 96 over Union School Slough. The CR 96 Bridge over Union School Slough Project (Project) is located approximately 6 miles northwest of the City of Davis. The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet (ft) long and 20 ft wide. The proposed Project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-ft-wide travel lanes and 2-ft-wide shoulders. The new bridge is a 46.5-ft-long, 29.5-ft-wide, single-span structure.

The purpose of this *Floodplain Evaluation Report* is to examine and analyze the existing floodplain within the Project limits, and to determine any potential impacts to recommend any avoidance, minimization, or mitigation measures that may be required to address the impacts.

The Project is located within a Zone AE area, which is designated for areas within the 100-year floodplain and where Base flood elevations (BFE) are shown. The existing approach roadways of CR 96 within the Project are also located within the Zone AE floodplains. The BFE upstream of the roadway is 81 ft and the BFE downstream of the roadway is 79 ft.

The selected 100-year peak design flow for Union School Slough was obtained from the Flood Insurance Study (FIS). The 100-year flow is 2,278 cubic feet per second (cfs).

The hydraulic assessment was performed using the United States Army Corps of Engineers' (USACE) Hydrologic Engineering Center's River Analysis System (HEC-RAS) modeling software. The hydraulic analysis indicates that the proposed bridge replacement would result in no increases in water surface elevation (WSE) for the 100-year storms in the vicinity of the bridge.

The Project is not proposing to change the overall land uses within the watershed. The Project is anticipated to add impervious area. However, this increase is insignificant compared to the size of the watershed. The proposed bridge replacement will provide additional fill along the roadway approach to the bridge. Based on the hydraulic model, the bridge and roadway approaches for both the existing and the proposed conditions result in overtopping of the roadway approach on either side of the bridge. Therefore, the existing and proposed bridge replacement would be expected to experience traffic interruptions during a 100-year flow.

The Project has been designed to minimize floodplain impacts and special mitigation measures are not proposed. The Project would not trigger incompatible floodplain development. The Project would maintain local and regional access, and would not create new access to developed or undeveloped lands.

Potential short-term adverse effects to natural and beneficial floodplain values during the removal and replacement of the bridge include loss of vegetation during construction activity, and temporary disturbances to vegetation, waters, or sensitive habitats. With proposed measures, long-term adverse effects to the natural and beneficial floodplain values are not anticipated from the Project. Temporary environmental impacts from construction activities for the proposed Project could be minimized with standard measures that meet the requirements of the Project's permit conditions. The County will coordinate with local, state, and federal water resources and floodplain management agencies as necessary during all aspects of the proposed Project.

Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ADT	average daily traffic
BFE	Base Flood Elevation
BIR	Bridge Inspection Report
Caltrans	California Department of Transportation
CFR	Code of Federal Regulations
cfs	cubic feet per second
County	County of Yolo
CR	County Road
CVFPB	Central Valley Flood Protection Board
DWR	Department of Water Resources
ESRI	Environmental Systems Research Institute
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
ft	feet, foot
HDM	Highway Design Manual
HEC-RAS	Hydrologic Engineering Center's River Analysis System
NES	Natural Environment Study
NFIP	National Flood Insurance Program
NAVD 88	North American Vertical Datum of 1988
SMUD	Sacramento Municipal Utility District
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
WSE	water surface elevation

TECHNICAL INFORMATION FOR LOCATION HYDRAULIC STUDY

Dist. 03 Co. Yolo County Rte. County Road 96 Project ID N/A
Federal-Aid Project Number: BRLO-5922(103)

Floodplain Description:
The Project site is located in FEMA FIRM Number 06113C0580G, effective on June 18, 2010. The Project is located within a Zone AE area, which is designated for areas within the 100-year floodplain and where BFEs are shown. The existing approach roadways of CR 96 within the Project are also located within the Zone AE floodplains. The BFE upstream of the roadway is 81 ft and the BFE downstream of the roadway is 79 ft.

1. Description of Proposal *(include any physical barriers i.e. concrete barriers, sound walls, etc. and design elements to minimize floodplain impacts)*
Yolo County proposes to replace the existing bridge on CR 96 crossing over Union School Slough. The proposed Project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur.

2. ADT: Current 200 (2009) Projected 262 (2037)

3. Hydraulic Data: Base Flood Q100= 2,278 CFS
WSE100= existing= 81.2 ft Proposed= 81.1 ft *The flood of record, if greater than Q100:*
Q= N/A CFS WSE= N/A
Overtopping flood Q= 490 CFS WSE= 79.5 ft
Are NFIP maps and studies available? NO ____ YES ✓

4. Is the highway location alternative within a regulatory floodway?
NO ✓ YES ____

5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain.

Potential Q100 backwater damages:

A.	Residences?	NO ✓	YES ____
B.	Other Bldgs?	NO ✓	YES ____
C.	Crops?	NO ✓	YES ____
D.	Natural and beneficial Floodplain values?	NO ✓	YES ____

"Natural and beneficial flood-plain values" shall include but are not limited to fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

6. Type of Traffic:

A.	Emergency supply or evacuation route?	NO ✓ YES ____
B.	Emergency vehicle access?	NO ✓ YES ____
C.	Practicable detour available?	NO ____ YES ✓
D.	School bus or mail route?	NO ✓ YES ____

7. Estimated duration of traffic interruption for 100-year event hours: 19

8. Estimated value of Q100 flood damages (if any) – moderate risk level.

A.	Roadway	$ N/A
B	Property	$ N/A
	Total	$ N/A

9. Assessment of Level of Risk
Low ✓
Moderate ____
High ____

For High Risk projects, during design phase, additional Design Study Risk Analysis may be necessary to determine design alternative.

TECHNICAL INFORMATION FOR LOCATION HYDRAULIC STUDY FORM cont.

Dist. 03 Co. Yolo County Rte. County Road 96 P.M. N/A
Federal-Aid Project Number: BRLO-5922(103)
Project ID N/A Bridge No. 22C0126
PREPARED BY:

Signature:
I certify that I have conducted a Location Hydraulic Study consistent with 23 CFR 650 and that the information summarized in items numbers 3, 4, 5, 7, and 9 of this form is accurate.

_____ *Date* _____
District Hydraulic Engineer *(capital and 'on' system projects)*

_____ *Date* 1/17/2022
Local Agency/Consulting Hydraulic Engineer *(local assistance projects)*

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? NO ✓ YES _____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

Information developed to comply with the Federal requirement for the Location Hydraulic Study shall be retained in the project files.

I certify that item numbers 1, 2, 6 and 8 of this Location Hydraulic Study Form are accurate and will ensure that Final PS&E reflects the information and recommendations of said report:

_____ *Date* _____
District Project Engineer *(capital and 'on' system projects)*

_____ *Date* _____
Local Agency Project Engineer *(local assistance projects)*

CONCURRED BY:
I have reviewed the quality and adequacy of the floodplain submittal consistent with the attached checklist, and concur that the submittal is adequate to meet the mandates of 23 CFR 650.

_____ *Date* _____
District Project Manager *(capital and 'on' system projects)*

_____ *Date* _____
Local Agency Project Manager *(Local Assistance projects)*

_____ *Date* _____
District Local Assistance Engineer *(or District Hydraulic Branch for very complex projects or when required expertise is unavailable. Note: District Hydraulic Branch review of local assistance projects shall be based on reasonableness and concurrence with the information provided).*

I concur that the natural and beneficial floodplain values are consistent with the results of other studies prepared pursuant to 23 CFR 771, and that the NEPA document or determination includes environmental mitigation consistent with the Floodplain analysis.

_____ *Date* _____
District Senior Environmental Planner *(or Designee)*

Note: If a significant floodplain encroachment is identified as a result of floodplains studies, FHWA will need to approve the encroachment and concur in the Only Practicable Alternative Finding.

FLOODPLAIN EVALUATION REPORT SUMMARY

Dist. ___03_____Co. __Yolo_____ Rte.__CR 96_____ K.P. ___N/A_____
Federal-Aid Project Number *(Local Assistance)*_____BRLO-5922(103)_____
Project No.: _____N/A_____ Bridge No. _____22C0126_____
Limits: __The approximate limits for this Project are 800 ft to the north of the existing bridge and 100 ft to the south of the existing bridge_____
Floodplain Description: __The Project site is located in FEMA FIRM Number 06113C0580G, effective on June 18, 2010 . The Project is located within a Zone AE area, which is designated for areas within the 100-year floodplain and where BFEs are shown. The existing approach roadways of CR 96 within the Project are also located within the Zone AE floodplains. The BFE upstream of the roadway is 81 ft and the BFE downstream of the roadway is 79 ft._____

		No	Yes
1.	Is the proposed action a longitudinal encroachment of the base floodplain?	_✓_	___
2.	Are the risks associated with the implementation of the proposed action significant?	_✓_	___
3.	Will the proposed action support probable incompatible floodplain development?	_✓_	___
4.	Are there any significant impacts on natural and beneficial floodplain values?	_✓_	___
5.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	_✓_	___
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	_✓_	___
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain.	___	_✓_

PREPARED BY:

_____ *Date* _____
District Project Engineer *(capital and 'on' system projects)*

_____ *Date* _1/17/2022_____
Local Agency/Consulting Hydraulic Engineer *(local assistance projects)*

CONCURRED BY:

_____ *Date* _____
District Project Manager *(capital and 'on' system projects)*

_____ *Date* _____
District Local Assistance Engineer *(Local Assistance projects)*

I concur that impacts to natural and beneficial floodplain values are consistent with the results of other studies prepared pursuant to 23 CFR 771, and that the NEPA document or determination includes environmental mitigation consistent with the Floodplain analysis.

_____ *Date* _____
District Senior Environmental Planner *(or Designee)*

Note: If a significant floodplain encroachment is identified as a result of floodplains studies, FHWA will need to approve the encroachment and concur in the Only Practicable Alternative Finding.

1 GENERAL DESCRIPTION

The County of Yolo (County) is proposing to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough. The CR 96 Bridge Over Union School Slough Project (Project) is located approximately 6 miles northwest of the City of Davis. See Figure 1 for the Project Location map, Figure 2 for the Project Vicinity Map, and Figure 3 for the Project Aerial map.

1.1 Project Description

Yolo County proposes to replace the existing bridge on CR 96 crossing over Union School Slough with funding made available through the Federal Highway Administration (FHWA) Highway Bridge Program and administered by California Department of Transportation (Caltrans). The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The Project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. CR 96 is a rural local roadway that extends between Russell Boulevard on the south and CR 27 on the north. Within the Project vicinity, CR 96 is an unpaved, gravel road with an approximate width of 20 feet (ft) and no shoulders. The bridge, with an Average Daily Traffic (ADT) of 200 vehicles, is bordered primarily by agricultural land. There are no posted speed limits within the Project vicinity.

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40-ft-long and 20-ft-wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has been an issue, which has only exacerbated the documented scouring at the site.

The proposed Project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and 2-foot shoulders. The new bridge is a 46.5-ft-long, 29.5-ft-wide, single-span structure (See Figure 4). The structure type is cast-in-place (CIP), post-tensioned concrete slab.

Construction of the bridge will involve excavation for and construction of concrete abutments, founded on driven piles. Construction of the roadway approaches will involve the placement of new roadway fill material, aggregate base, hot mix asphalt pavement, and installation of guardrail. Tree removal and removal of other vegetation along the slough will be necessary for the Project. Temporary work within Union School Slough includes removal of the existing structure, installation of a box culvert at the existing bridge location, falsework erection and removal, and installation of scour

countermeasures at the abutments. Temporary slough diversion is anticipated to complete activities within the waterway.

Relocation of overhead electrical lines, including two utility poles, along the east side of CR 96 is anticipated as part of the Project. A Sacramento Municipal Utility District (SMUD) gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be South of the proposed bridge location and therefore, not in conflict. The proposed Project improvements will remain within the County's right-of-way and no permanent acquisitions are anticipated. Temporary construction easements will be needed from four parcels adjacent to the bridge to facilitate driveway conforms, utility relocations, and allow construction access.

During construction, CR 96 will be closed to through-traffic and a detour route will be made available. Vehicular traffic will be able to utilize CR 95, 27, and 29 as alternative routes. Construction is anticipated to begin in Spring 2023 and have a duration of approximately eight months.

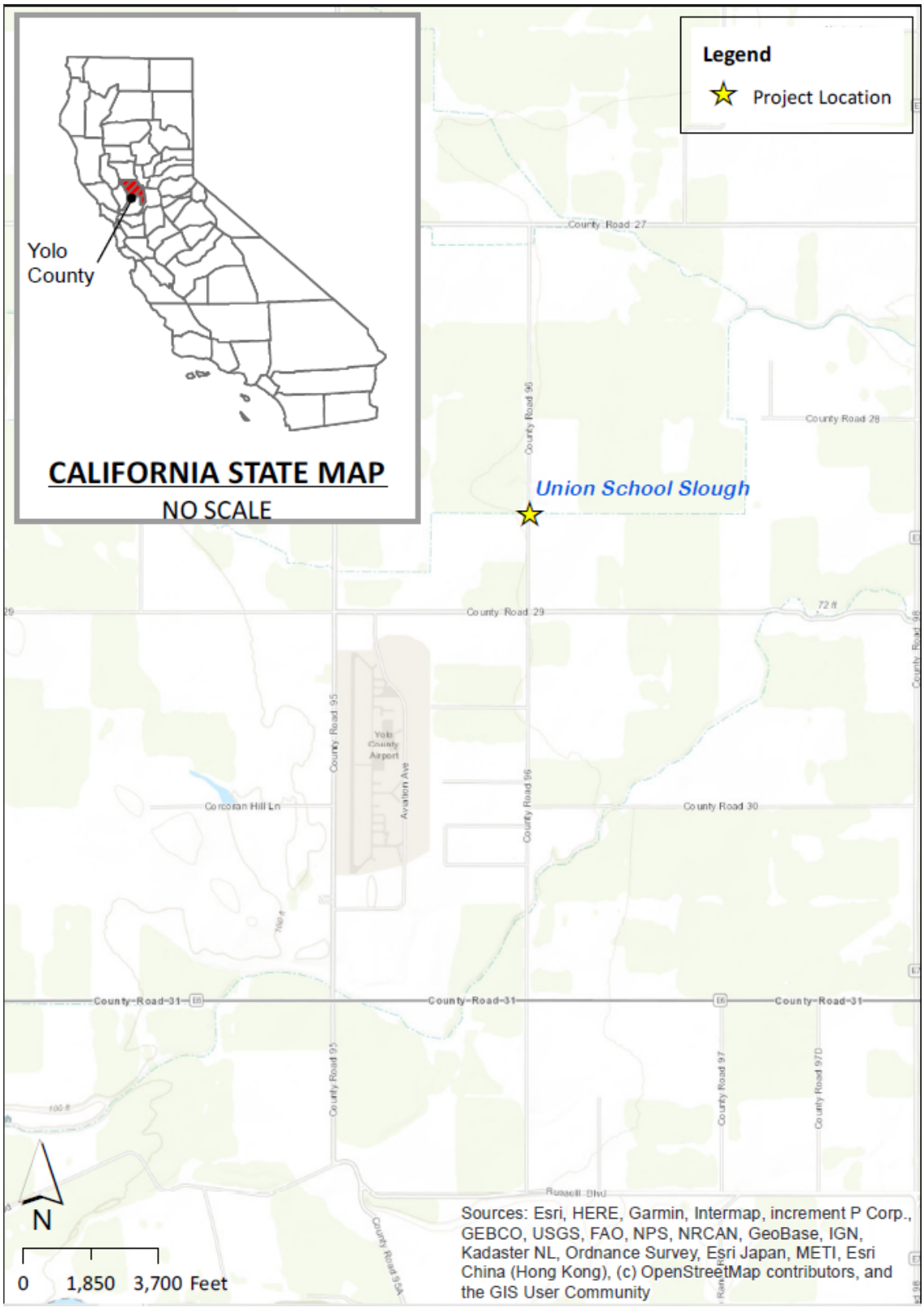


Figure 1. Project Location Map

Source: Environmental Systems Research Institute (ESRI), 2021

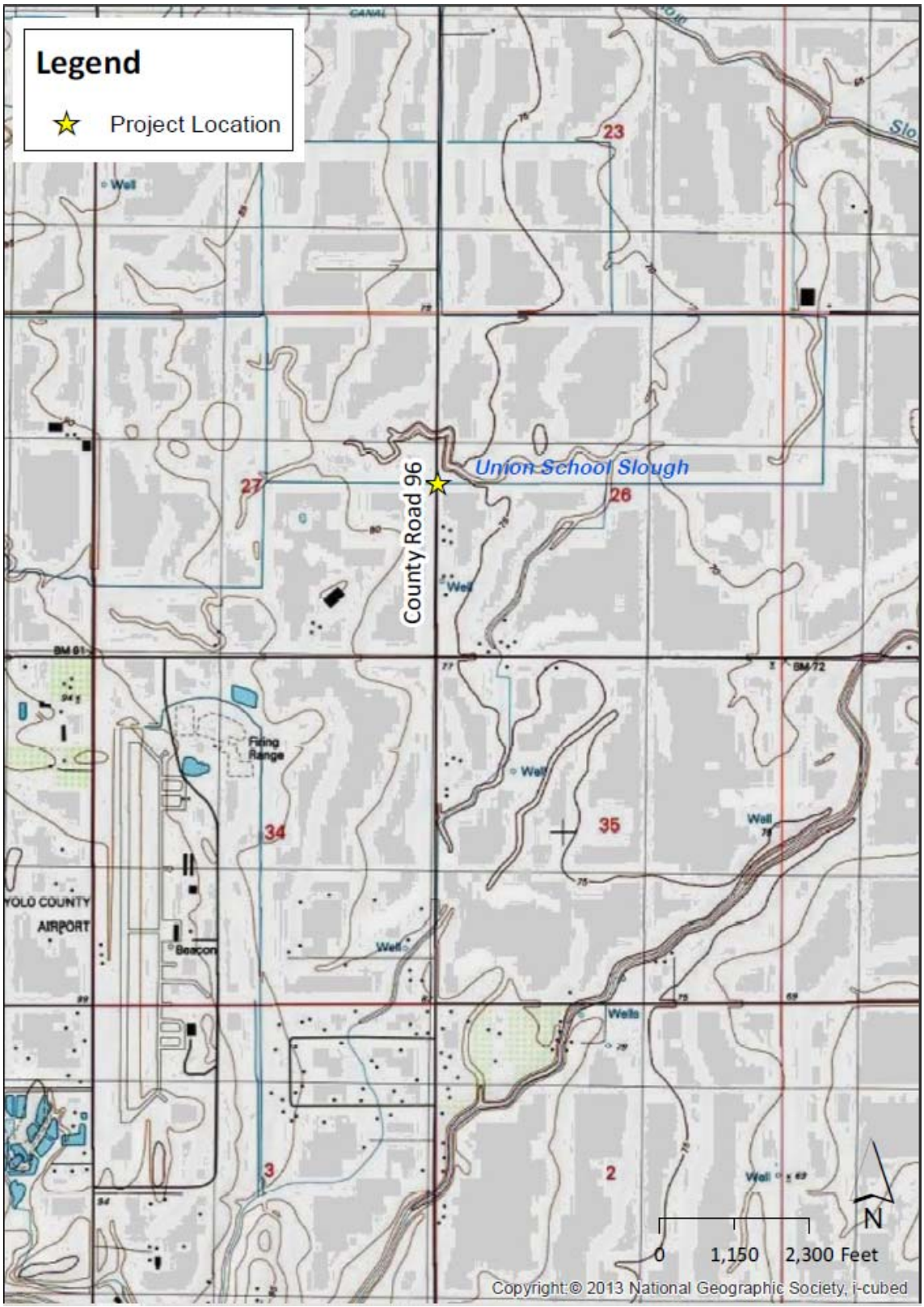


Figure 2. Project Vicinity Map

Source: United States Geological Survey (USGS), 2012

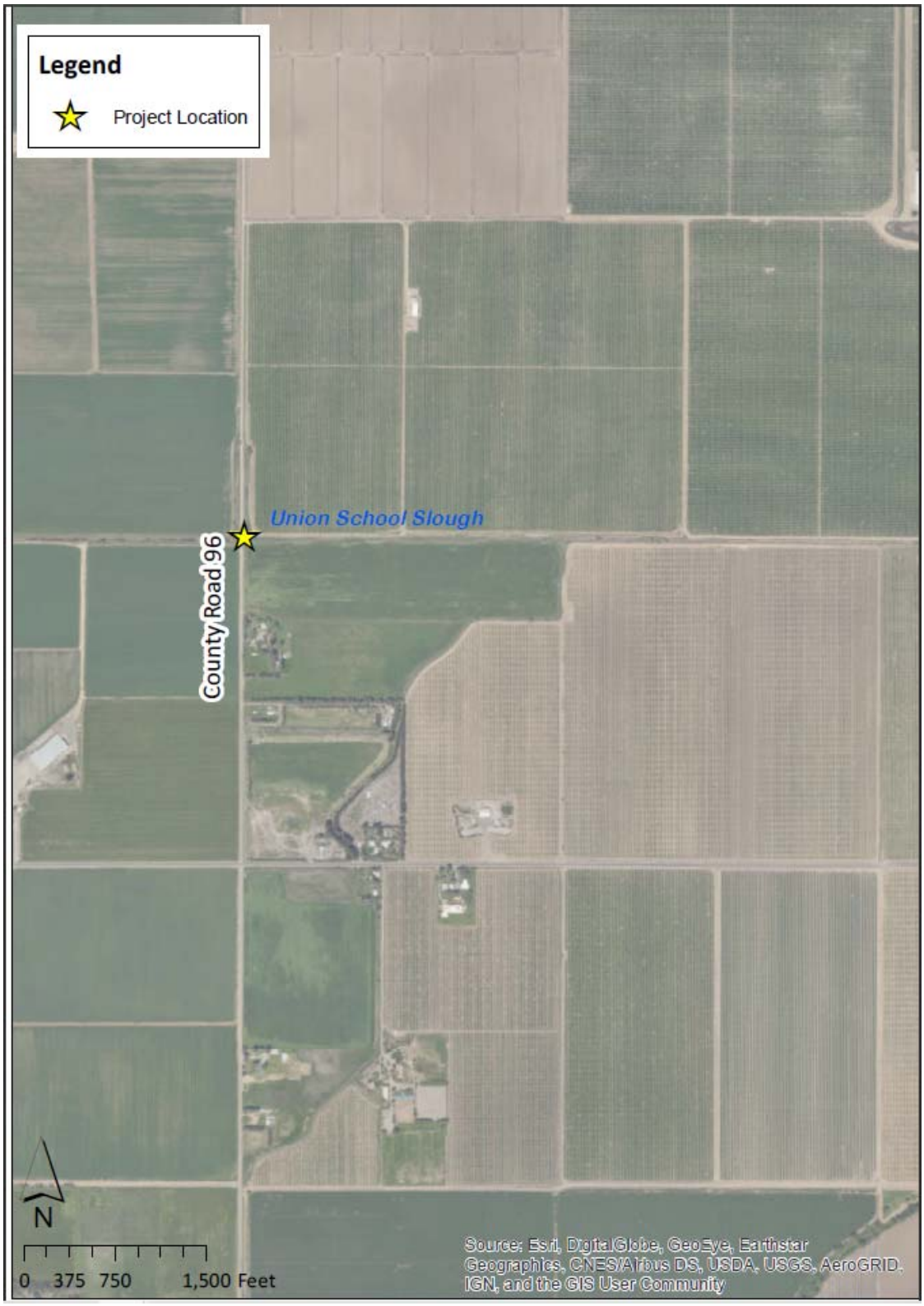


Figure 3. Project Aerial Map

Source: ESRI, 2021

This page intentionally left blank

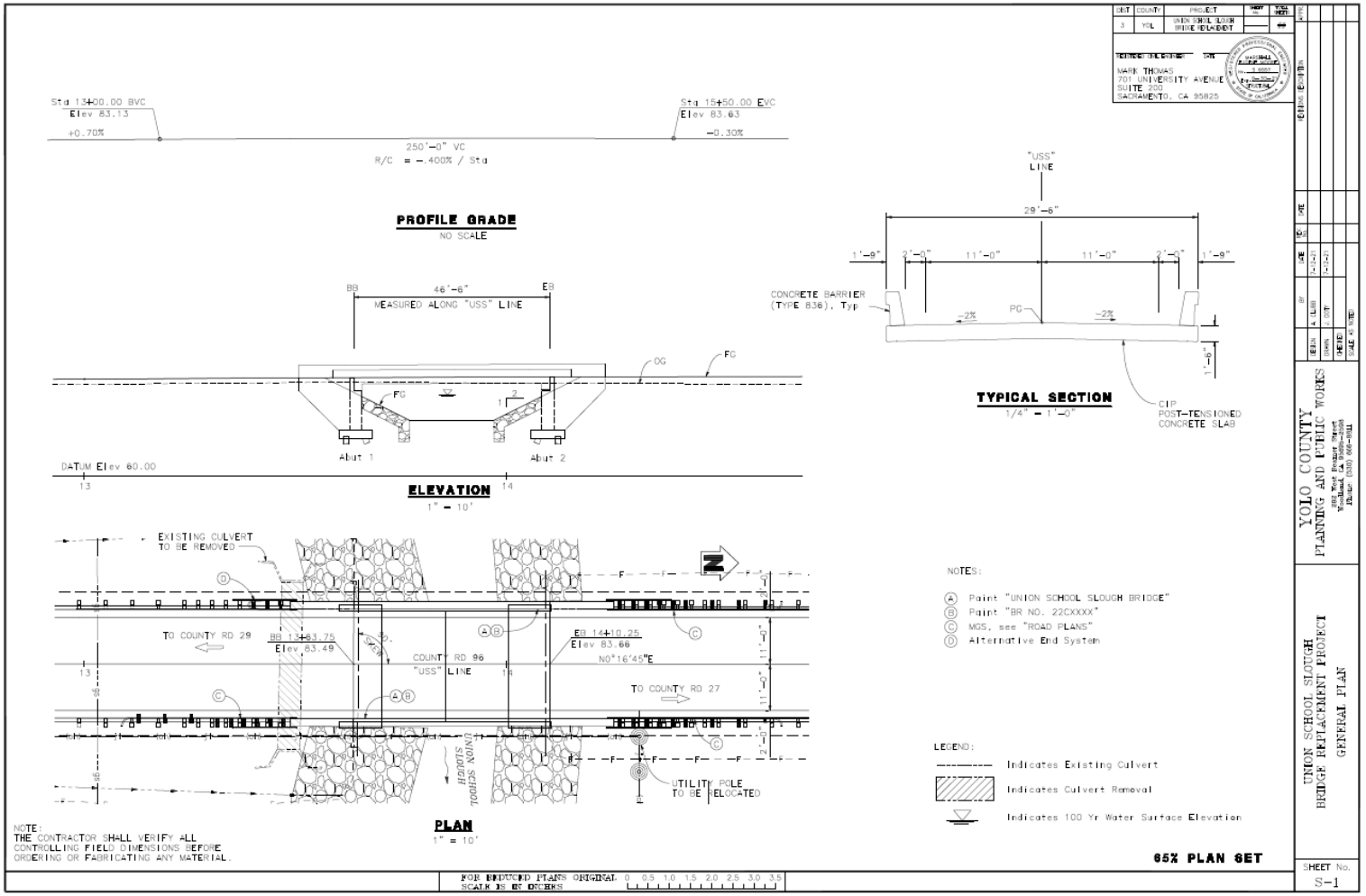


Figure 4. General Plan for the Proposed Bridge

Source: Mark Thomas, 2021

This page intentionally left blank

1.2 Study Purpose

The purpose of this *Floodplain Evaluation Report* is to examine and analyze the existing base floodplain within the Project limits; to document any potential impacts to or encroachments upon the base floodplain as a result of the Project; and to recommend any avoidance, minimization, or mitigation measures that may be required. The base flood is defined as a flood that has a 1% chance of being equaled or exceeded in any given year, and it is also referred to as a 100-year flood (Federal Emergency Management Agency [FEMA], 2020).

1.3 Regulatory Setting

1.3.1 Executive Order 11988 (Floodplain Management, 1977)

Executive Order 11988 (Floodplain Management) directs all federal agencies to avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative (1977). Requirements for compliance are outlined in Title 23, Code of Federal Regulations (CFR), Part 650, Subpart A titled "Location and Hydraulic Design of Encroachment on Floodplains" (United States, Federal Highway Administration [FHWA], Department of Transportation, 2019).

If the preferred alternative involves significant encroachment onto the floodplain, the final environmental document (final Environmental Impact Statement or finding of no significant impact) must include:

- The reasons why the proposed action must be located in the floodplain,
- The alternatives considered and why they were not practicable, and
- A statement indicating whether the action conforms to applicable state or local floodplain protection standards.

1.3.2 California's National Flood Insurance Program

FEMA is the nationwide administrator of the National Flood Insurance Program (NFIP), which is a program that was established by the National Flood Insurance Act of 1968 to protect lives and property, and to reduce the financial burden of providing disaster assistance. Under the NFIP, FEMA has the lead responsibility for flood hazard assessment and mitigation, and it offers federally backed flood insurance to homeowners, renters, and business owners in communities that choose to participate in the program. FEMA has adopted the 100-year floodplain as the base flood standard for the NFIP. FEMA is also concerned with construction that would be within a 500-year floodplain for proposed projects that are considered "critical actions," which are defined as any activities where even a slight chance of flooding is too great. FEMA issues the Flood Insurance Rate Maps (FIRM) for communities that participate in the NFIP. These FIRMs present delineations of flood hazard zones.

In California, nearly all of the State's flood-prone communities participate in the NFIP, which is locally administered by the California Department of Water Resources' (DWR) Division of Flood Management. Under California's NFIP, communities have a mutual agreement with the State and federal governments to regulate floodplain development according to certain criteria and standards, which are further detailed in the NFIP.

1.3.3 Yolo County Floodplain Data

As part of the NFIP, typically, each county (or community) has a Flood Insurance Study (FIS), which is used to locally develop FIRMs and Base Flood Elevations (BFE). The Project site is located along Union School Slough within unincorporated Yolo County. Yolo County's effective FIS, which was last revised May 16, 2012, presents flood hazards for Yolo County (FEMA, 2012). The Project is located within a 100-year floodplain where BFEs have been determined. Additional details of the flood hazards are presented in Section 2.3 of this Floodplain Evaluation Report. The FIS includes peak discharges for Union School Slough, which are presented in Section 3.1 of this Report.

1.4 Design Standards

1.4.1 FEMA Standards

FEMA standards are employed for design, construction, and regulation to reduce flood loss and to protect resources. Two types of standards are often employed: design criteria and performance standards.

A design criteria or specified standard dictates that a provision, practice, requirement, or limit be met; e.g., using the 1% flood and establishing floodway boundaries so as not to cause more than a 1-ft increase in flood stages.

A performance standard dictates that a goal is to be achieved, leaving it to the individual application as to how to achieve the goal; e.g., providing protection to the regulatory flood, keeping post-development stormwater runoff the same as pre-development, or maintaining the present quantity and quality of water in a wetland.

The 1% annual chance flood and floodplain have been adopted as a common design and regulatory standard in the United States. The NFIP adopted it in the early 1970s, and it was adopted as a standard for use by all federal agencies with the issuance of Executive Order 11988. States or local agencies are free to impose a more stringent standard within their jurisdiction.

1.4.2 Floodplain Regulations

According to Title 44, Section 60.3(c) of the CFR, areas designated in the FIRM as Zone AE floodplains include water surface elevation (WSE) data but have not identified a floodway or coastal high hazard area. These Zone AE floodplains require that the cumulative effect of the proposed development will not increase the WSE of the base

flood by more than 1 ft. Construction, improvements, and development within the base floodplain need to meet the standards in Section 60.3(b) (FEMA, 2020).

1.4.3 Hydraulic Design Criteria

1.4.3.1 FHWA Standards

Bridges must be designed per the *California American Association of State Highways and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications (2017 Eighth Edition)* (AASHTO LRFD BDS) (Caltrans, 2019). AASHTO LRFD BDS Section 2.6.3 defers to state requirements for hydraulic studies.

From *Memo to Designers 16-1 Hydraulic Design for Structures over Waterways*, the proposed bridge soffit should provide adequate freeboard to pass anticipated drift for the 50-year design flood, or to pass the 100-year base flood without freeboard, whichever is greater (Caltrans, 2017).

1.4.3.2 Caltrans Standards

From Chapter 820 of the Caltrans' *Highway Design Manual* (HDM), the criteria for the hydraulic design of bridges is that they be designed to pass the 2% probability of annual exceedance flow (50-year design discharge) with adequate freeboard to pass anticipated drift and debris (2020). Two (2) ft of freeboard is commonly used in bridge designs. Alternatively, the bridge can also be designed to pass the 1% probability of annual exceedance flow (100-year design discharge, or base flood). No freeboard is added to the base flood.

1.4.3.3 Central Valley Flood Protection Board Standards

Streams regulated by the Central Valley Flood Protection Board (CVFPB) must adhere to the design criteria from Title 23 of the California Code of Regulations. Union School Slough is not included in the CVFPB regulated stream list. However, Union School Slough outfalls into the Willow Slough Bypass. Therefore, non-permissible work periods for Willow Slough Bypass during the flood season from November 1 through April 15 are expected to apply to this Project.

1.4.3.4 Yolo County Standards

Per the Yolo County *City/County Drainage Design* criteria, a minimum of 2 ft of freeboard for the 100-year event and 1 ft of freeboard for the 200-year event shall be provided for bridges at crossings (Yolo County, 2010).

1.4.3.5 Freeboard Criteria Adopted for Project

The proposed bridge has been designed to pass the 100-year flow and 50-year flow with some freeboard. The existing bridge does not meet applicable design standards.

1.5 Traffic

Based on the 2019 Bridge Inspection Report (BIR) (Caltrans, 2019) the Average Daily Traffic (ADT) in 2009 was 200 vehicles. The future ADT in 2037 is expected to be 262 vehicles. The CR 96 bridge over Union School Slough is not an emergency supply or evacuation route. It is not an emergency vehicle access route or mail and school bus route. There are practicable detour available using CR 95.

1.6 Vertical Datum

The Project references the North American Vertical Datum of 1988 (NAVD 88). All elevations in this report are reported in ft and reference NAVD 88.

2 AFFECTED ENVIRONMENT

2.1 Geographic Location

The Project is located within the southern region of Yolo County at 38°35’51.91” North latitude and 121°50’2430” West longitude.

2.2 Watershed Description

The headwaters of the Union School Slough watershed originate from Edgar Peak, which is located directly east of the Yolo/Napa County line west of the Project site. Several small tributaries in the headwaters converge at the eastern slope of Edgar Peak to form the main stem of Union School Slough. The tributaries converge into the mainstem upstream, approximately 9 miles west, of the Project site (see Figure 5 for the Project watershed). Union School Slough continues flowing northeast for approximately 2 miles before merging with Willow Slough.

2.3 FEMA Floodplains

The Project site is located in FEMA FIRM Number 06113C0580G, effective on June 18, 2010 (see Figure 6). The Project is located within a Zone AE area, which is designated for areas within the 100-year floodplain and where BFEs are shown. The existing approach roadways of CR 96 within the Project are also located within the Zone AE floodplains. The BFE upstream of the roadway is 81 ft and the BFE downstream of the roadway is 79 ft. The FIRM at the Project site is presented in Appendix A.

This page intentionally left blank

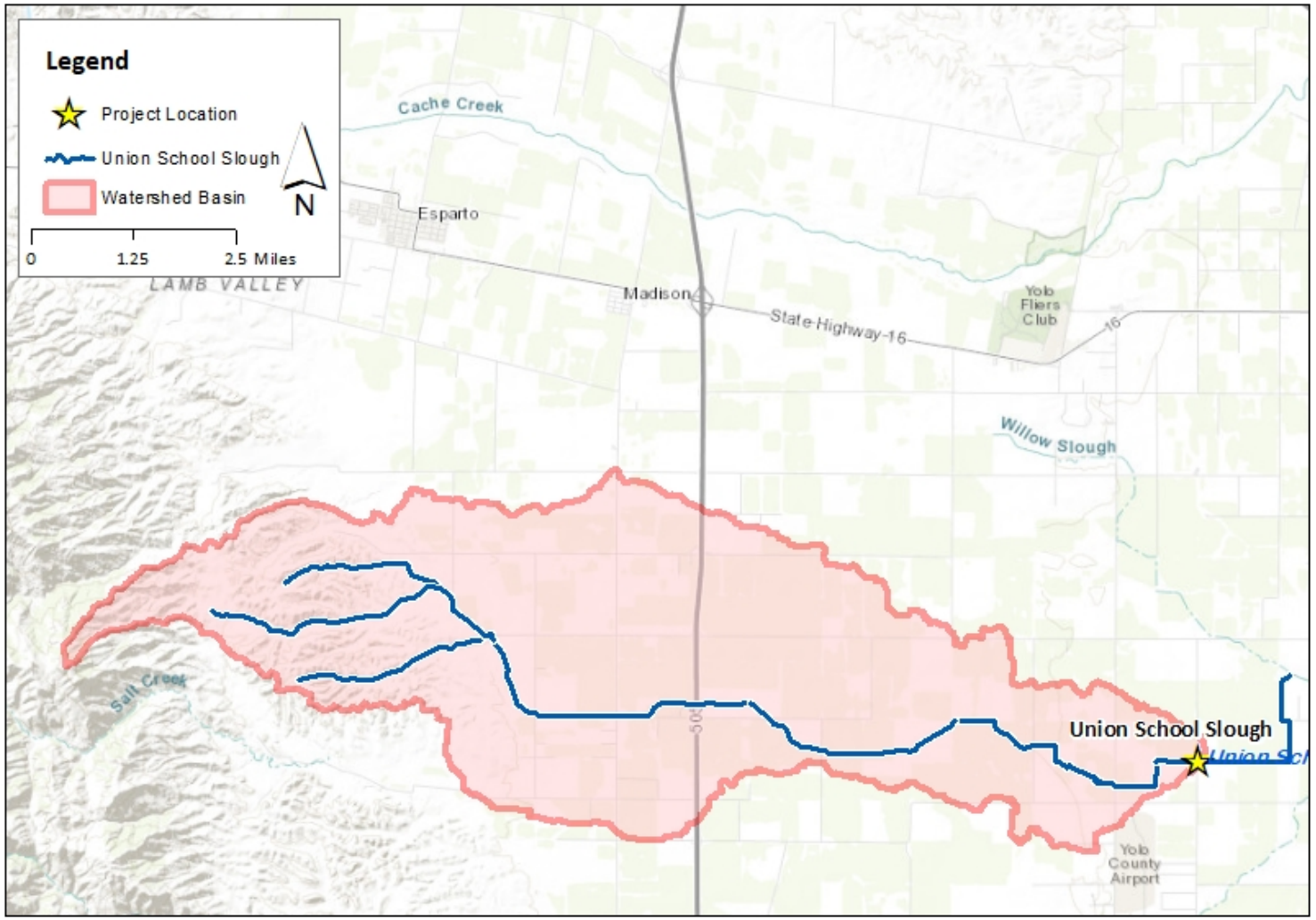


Figure 5. Project Watershed Map

Source: USGS, StreamStats, 2021

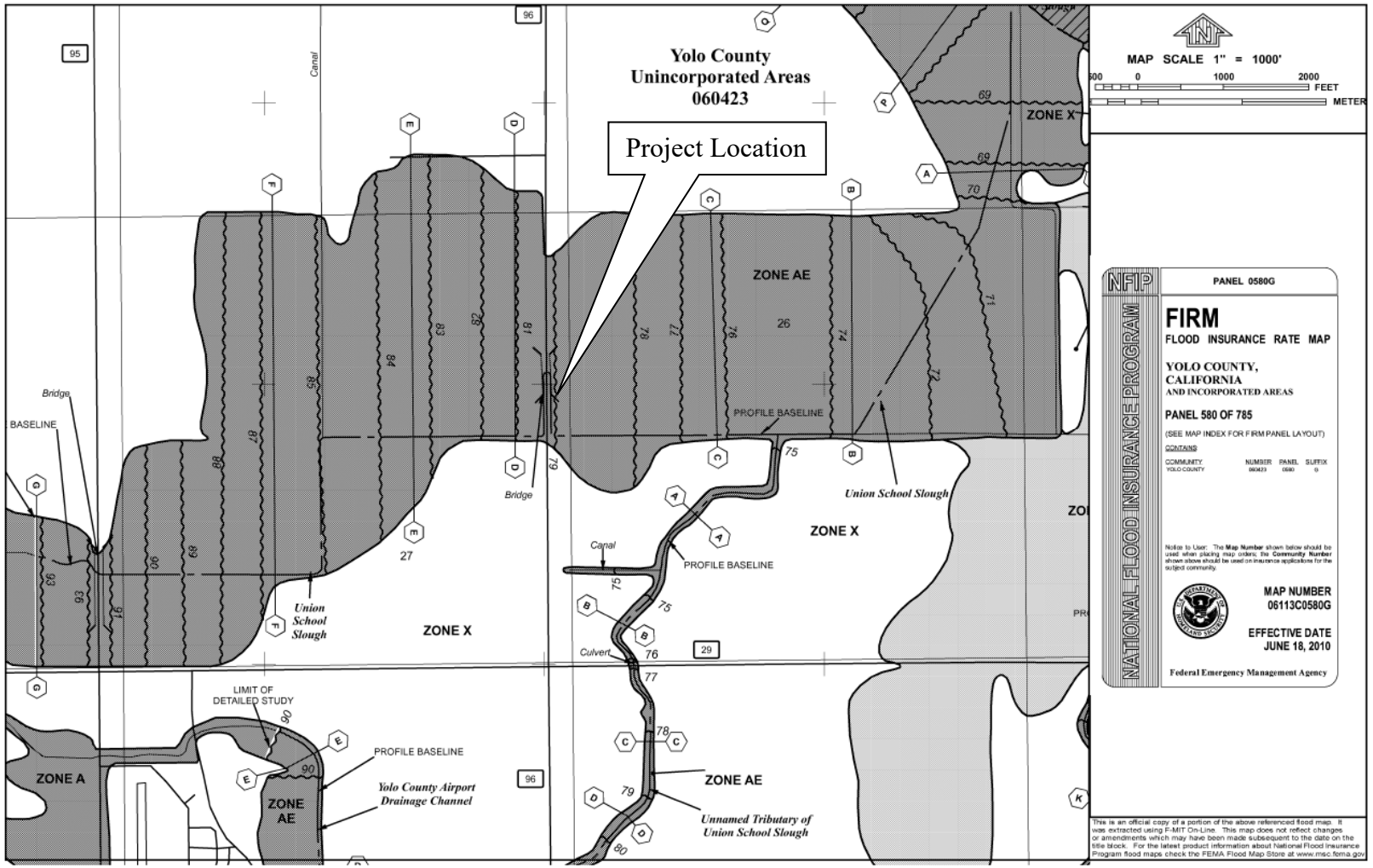


Figure 6. FEMA FIRM

Source: FEMA, 2010

3 HYDROLOGY AND HYDRAULICS

3.1 Hydrologic Assessment

WRECO evaluated the hydrology at the Project site using the following hydrologic design methods:

1. FEMA FIS
2. USGS Regional Regression Equations

The FEMA FIS indicates that a detailed study of Union School Slough was performed from the confluence with Willow Slough to approximately 3.6 miles upstream of the confluence. The FIS includes detailed flood information for Union School Slough and provides 100-year peak discharges for Union School Slough at the confluence with Willow Slough. (see Table 1).

Table 1. Peak Discharge for Union School Slough from FEMA FIS

Location	Drainage Area (square miles)	100-Year Peak Flow Rate (cubic feet per second [cfs])
At confluence with Willow Slough	27.43	2,278

Source: FEMA, 2012

The Project site is located within the studied reach approximately 2.0 miles upstream of the confluence with Willow Slough. The 100-year flow from the FIS considers flows that spill out of the channel and leave the watershed.

Flood-frequency equations were developed by the USGS and based on analysis of data from gaging stations. California is divided into six regions; the Project site is within the North Coast region (Region 1). These flood-frequency equations are generally used to estimate stream flow for ungaged sites that are not affected by substantial urban development and that are natural (unregulated) streams.

On July 18, 2012, the USGS issued *Methods for Determining Magnitude and Frequency of Floods in California, Based on Data through Water Year 2006* (Gotvald et al. 2012), which presents the regional flood-frequency equations, and the boundaries of the six unique regions within California. These equations are based on annual peak flow data through water year 2006 for 771 streamflow-gaging stations in California with 10 or more years of data. The updated equation was used in support of the Project's hydrologic analysis. The flood-frequency equation is as follows (Gotvald et al., 2012):

$$Q_{100} = 48.5(\text{DRNAREA})^{0.866}(\text{PRECIP})^{0.556}$$

Where:

Q_n = peak flow rate for return period n-year (cfs)
DRNAREA = watershed area (square miles)
PRECIP = mean annual precipitation (inches)

Basin characteristics values from USGS StreamStats are based on the user selected ungaged stream location at the Project site. The Project watershed basin characteristics are identified in Table 2.

Table 2. Project Watershed Basin Characteristics

Parameter	Value	Unit
Drainage area	30.6	square miles
Mean annual precipitation	22.4	inches
Mean basin elevation	211.0	ft

Source: USGS, 2021

The 100-year peak discharge at the Project site was calculated using the USGS regional regression equation to be 5,630 cfs.

The regional regression equation was developed for the North Coast region using data from sites with a wide range of basin characteristics: drainage areas ranging from 0.04 to 3,200 square miles and mean annual precipitation ranging from 20 to 125 inches (Gotvald et al., 2012). Although the basin characteristics for the Project watershed (see Table 2) are within the range of basin characteristics, which the regional regression equation was developed based on, the equation does not consider flow that escape from Union School Slough. Because the USGS regional regression estimate does not account for the escaped flows, the flow from the FEMA FIS was adopted for the hydraulic analyses for the Project (see Table 1).

3.2 Hydraulic Assessment

The following sections discuss the development of the hydraulic models and summarize the results for the existing and proposed conditions. The water surface profile plots, hydraulic summary tables, and channel cross sections are included in Appendix B for the existing bridge and Appendix C for the proposed bridge.

3.2.1 Hydraulic Model Development

A one-dimensional steady-state hydraulic model was developed to evaluate and assess whether the Project improvements would impact the 100-year WSEs of Union School Slough. The hydraulic analyses were performed for the existing and proposed conditions using the United States Army Corps of Engineers' (USACE) HEC-RAS modeling software, Version 5.0.7.

The cross-sectional channel geometry for the hydraulic model was developed using survey data provided by Mark Thomas (2018). The survey references NAVD 88. Four cross sections were used in the hydraulic models of the Union School Slough channel within the Project vicinity. The upstream-most cross section is approximately 1,095 ft

upstream of the existing bridge and the downstream-most cross section is approximately 2,785 ft downstream of the existing bridge. The cross section locations are shown in Figure 7.



Figure 7. Cross Section Locations

Source: ESRI and Mark Thomas, 2018

The existing bridge was modeled based on the survey data provided by Mark Thomas (2018). The hydraulic opening of the bridge between the abutment faces (perpendicular to the flow direction) is modeled as 36 ft. The existing bridge has a minimum soffit elevation of 80.2 ft (NAVD 88).

The new bridge is proposed approximately 1,440 ft south of the existing bridge to have another opening to let water flow straight under CR 96. The proposed bridge was modeled based on the General Plan (see Figure 4) provided by Mark Thomas (2021). The hydraulic opening of the bridge between the abutment faces (perpendicular to the flow direction) is modeled as 42.5 ft. The proposed bridge has a minimum soffit elevation of 81.7 ft (NAVD 88).

A box culvert will be placed at the existing bridge location to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The proposed box culvert was modeled as an 8-ft-wide and 4-ft-high single box culvert at the location of the existing bridge.

A normal depth slope of 0.0018 ft/ft was used as the downstream boundary condition, and it was based on the thalweg elevations from the survey provided by Mark Thomas of Union School Slough downstream of the bridge.

Manning's roughness coefficients were used in the hydraulic model to estimate energy losses in the flow due to friction. A roughness coefficient of 0.07 and 0.1 was used to describe the channel, and a roughness coefficient of 0.07 was used to describe the overbank areas. These values were selected based on site photos from Caltrans' BIR (2019) and aerial images on Google Earth (2021).

Expansion and contraction coefficients were used in the hydraulic model to represent energy losses in the channel. An expansion coefficient of 0.3 and a contraction coefficient of 0.1 were used to represent the channel. These values represent a channel with gradual transitions between cross sections. The expansion and contraction coefficients used in the vicinity of the bridge were 0.5 and 0.3, respectively. These values represent the flow interference caused by the bridge.

3.2.2 Hydraulic Model Results

The WSEs were estimated for the existing and proposed conditions as described in Section 3.2.1. The WSEs comparison between the existing and proposed conditions are shown in Table 3. The cross sections facing downstream at the upstream faces of the existing and proposed structures are shown in Figure 8 and Figure 9, respectively. The 100-year water surface profiles along the studied reach are presented for the existing and proposed conditions in Figure 10.

Table 3. Union School Slough 100-Year Water Surface Elevations

River Station (RS)	Description/Distance from Existing Bridge Centerline (ft)	100-Year Water Surface Elevation (ft NAVD 88)		Difference (ft)
		Existing	Proposed	
3881.5	Approximately 862 ft Upstream	81.9	81.8	-0.1
2807.8	Approximately 22 ft Upstream	81.2	81.1	-0.1
2785.8 BR U	Upstream Face of Bridge	81.1	81.0	-0.1
2785.8 BR D	Downstream Face of Bridge	81.0	80.8	-0.1
2763.8	Approximately 22 ft Downstream	80.9	80.9	0.0
0.0	Approximately 2,192 ft Downstream	76.5	76.5	0.0

Notes:
BR U=Upstream bridge face
BR D=Downstream bridge face

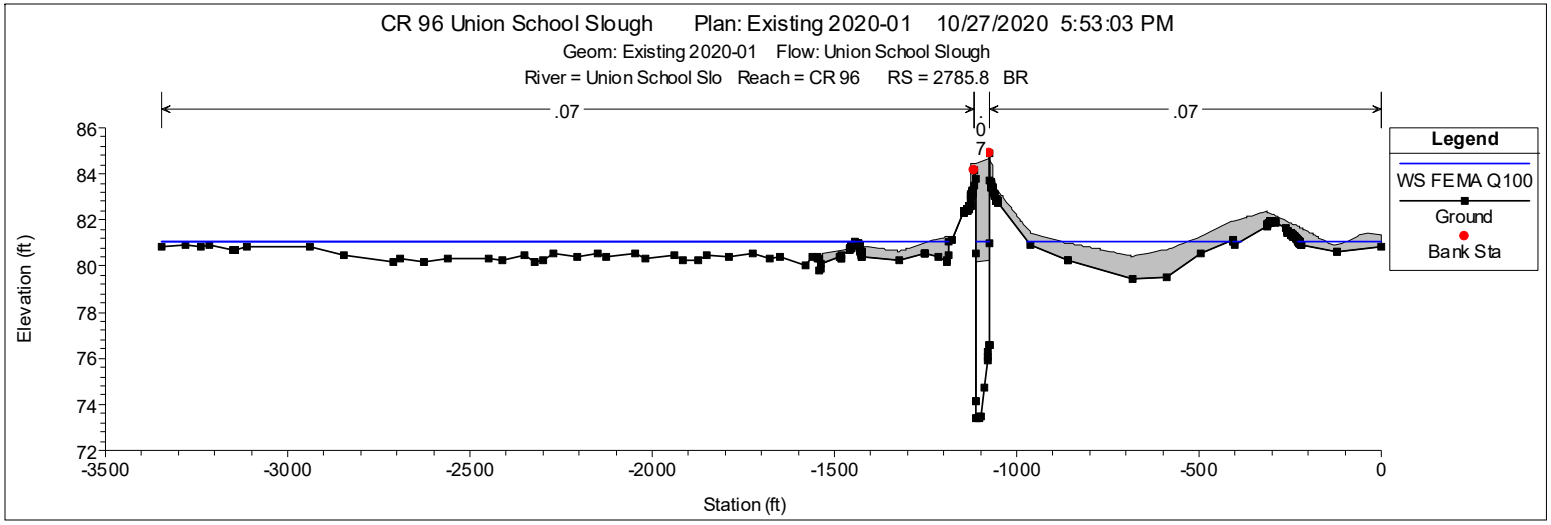


Figure 8. Upstream Face of Existing Bridge, Looking Downstream (East)

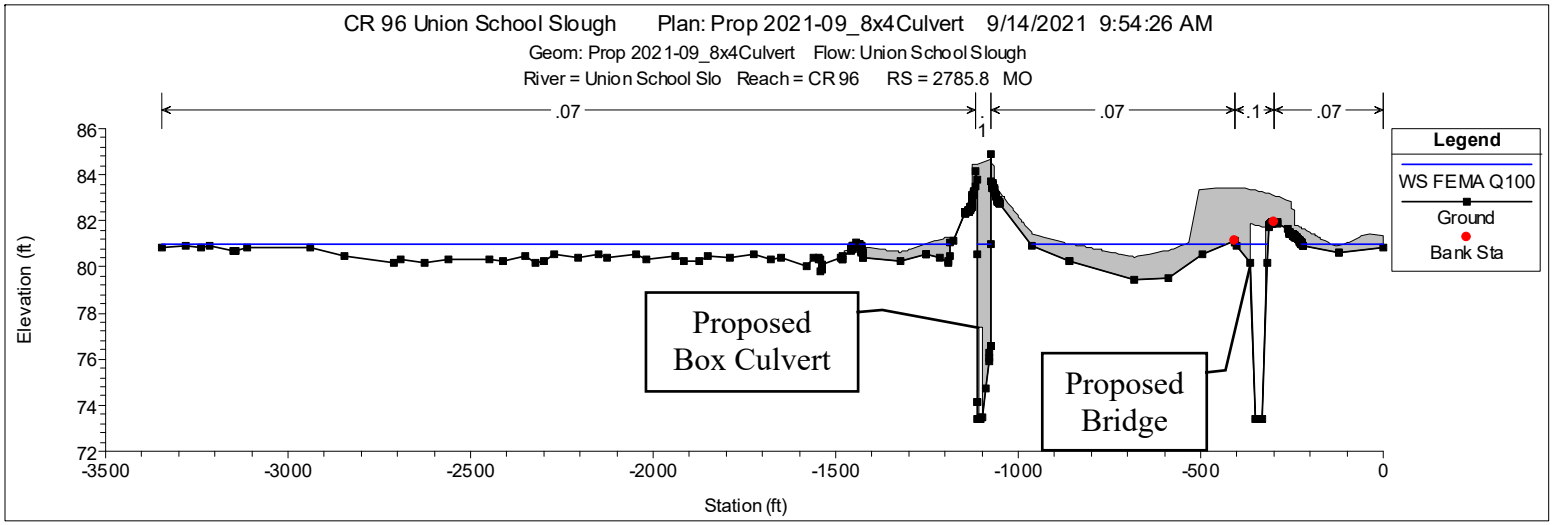


Figure 9. Upstream Face of Proposed Bridge, Looking Downstream (East)

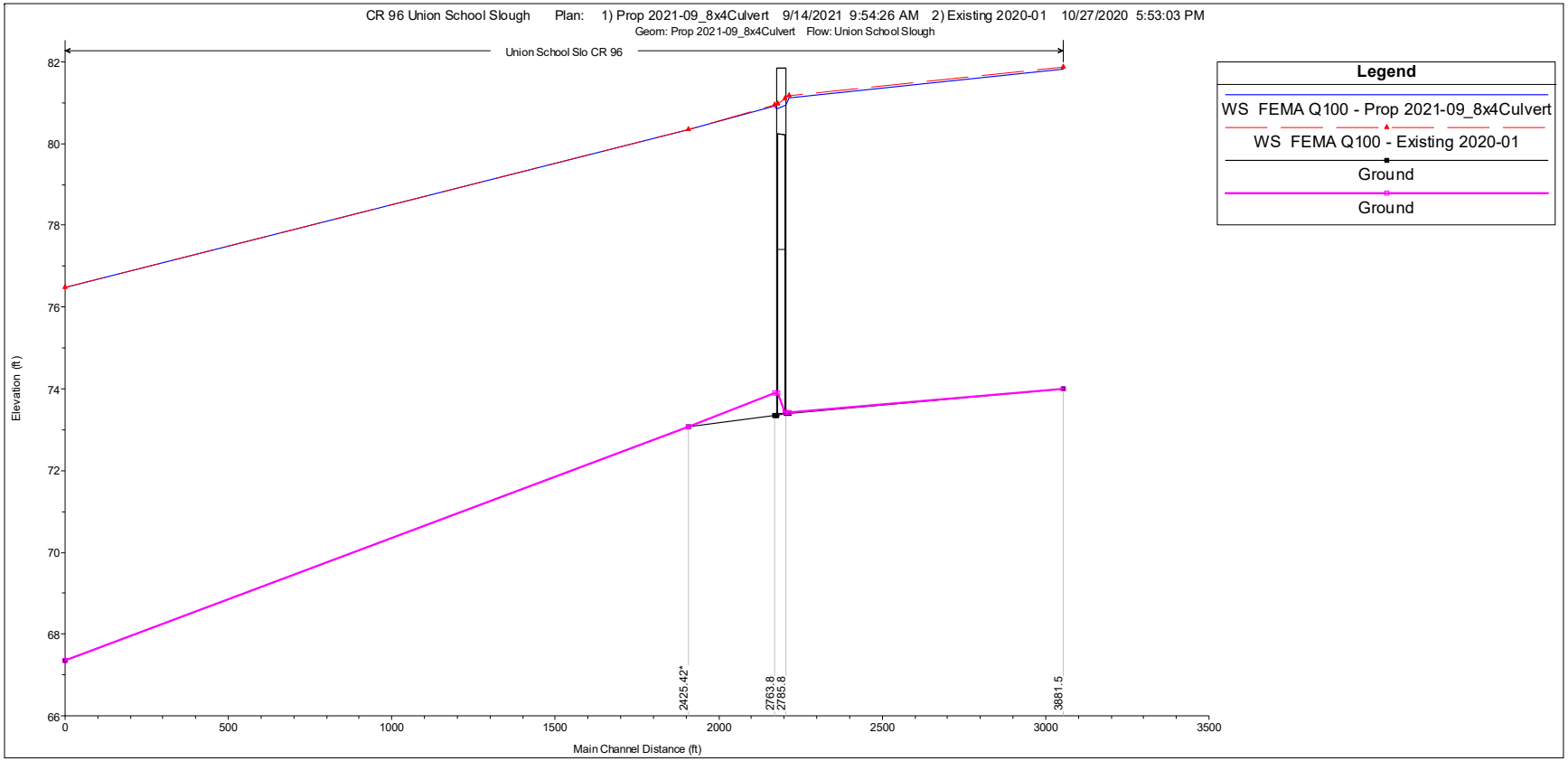


Figure 10. Union School Slough 100-Year Water Surface Profile at CR 96

3.2.3 Bridge Freeboard

The available freeboard for the existing and proposed conditions for the 100-year storm event are summarized in Table 4.

Table 4. Union School Slough 100-Year Water Surface Elevations

Bridges	Soffit Elevation	WSE	Available Freeboard
	(ft NAVD 88)	(ft NAVD 88)	(ft)
Existing	80.2	81.2	-1.0
Proposed	81.7	81.1	0.6

The soffit of the existing bridge does not pass the 100-year storm. The approach roadways of the existing bridge are overtopped due to the wide floodplain. Both the existing and proposed bridges do not meet the freeboard criteria of FHWA, Caltrans, or Yolo County. The freeboard requirements applicable to the Project are described in Section 1.4.3. For the proposed condition, flows overtop the north and south approach roadway of the proposed bridge and box culvert during the 100-year storm event.

This page intentionally left blank

4 PROJECT EVALUATION

Executive Order 11988 requires federal agencies to avoid to the maximum extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. This section analyzes the impacts associated with this Project.

4.1 Risk Associated with the Proposed Action

As defined by the FHWA, risk shall mean the consequences associated with the probability of flooding attributable to an encroachment. It shall include the potential for property loss and hazard to life during the service life of the bridge and roadway.

The potential risk associated with the implementation of the proposed action includes, but is not limited to: 1) change in land use, 2) change in impervious surface area, 3) fill inside the floodplain, or 4) change in the 100-year WSE. The measures to minimize the potential floodplain impacts associated with the action are summarized in Section 5.

4.1.1 Change in Land Use

According to the Yolo County *2030 Countywide General Plan,* the land around CR 96 crossing over Union School Slough within the Project limits consists of largely agricultural uses (County of Yolo, 2009). The proposed Project will construct a new bridge to the south of the existing structure and install a box culvert at the existing crossing. Due to the nature of the work proposed, the Project would not change the overall land use within the watershed basin.

4.1.2 Change in Impervious Surface Area

The Project is anticipated to increase the impervious area due to the culvert installation and the bridge replacement. The Project will result in a net increase in impervious surface area. However, this increase is minor compared to the size of the watershed area.

4.1.3 Fill Inside the Floodplain

The proposed bridge replacement to the south of the existing culvert will provide additional fill along the roadway approach to the bridge to raise the bridge profile. The replacement bridge will pass the 100-year flow and the additional box culvert will allow for additional conveyance though the crossing.

4.1.4 Change in the 100-Year Water Surface Elevation

As demonstrated by the HEC-RAS hydraulic model, the proposed bridge would result in a decrease in the WSE upstream of and at the bridge.

4.2 Summary of Potential Encroachments

The FHWA defines a significant encroachment as a highway encroachment, and any direct support of likely base floodplain development, that would involve one or more of the following construction or flood-related impacts: 1) significant potential for interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route, 2) a significant risk, or 3) a significant adverse impact on the natural and beneficial floodplain values (FHWA, 1994). The following sections discuss the potential impacts to the floodplain that may result from the proposed action. The risk associated with implementation of the action is discussed in Section 4.1.

4.2.1 Potential Traffic Interruptions for the Base Flood

The base flood is that flood that has a 1% chance of occurrence in any given year (100-year flood). Potential flooding conditions for the proposed Project were evaluated based on the hydraulic modeling of the existing and proposed conditions using HEC-RAS. The hydraulic modeling shows the bridge for the proposed conditions pass the 100-year storm event. However, roadway approaches for both the existing and the proposed conditions result in overtopping of the roadway approach on either side of the bridge. Therefore, the existing and proposed bridge replacement would be expected to experience traffic interruptions during a 100-year flow.

The approach roadways of the existing bridge are overtopped due to the wide floodplain. The proposed bridge profile will be raised slightly to clear the 100-year storm, but will not be raised to meet the 2 ft of freeboard over the 50-year WSE criteria. The proposed bridge will clear the 50-year storm with some freeboard. Raising the bridge to meet the 2 ft of freeboard over the 50-year WSE criteria would require the approach roadways be raised, which would further block the flood flows.

4.2.2 Potential Impacts on Natural and Beneficial Floodplain Values

Natural and beneficial floodplain values include, but are not limited to: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge.

Based on the *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Board Central Valley Region* (2018), the beneficial uses of the Hydrologic Unit number 511 for Putah Creek, Lake Berryessa to Yolo Bypass, are listed in Table 5. Putah Creek is directly south of Union School Slough and both flow into the Bypass.

Potential short-term adverse effects during the removal and replacement of the bridge to natural and beneficial floodplain values include: 1) loss of vegetation during construction activity; and 2) temporary disturbance to aquatic and/or wildlife habitat. With proposed measures (see Section 5.2), long-term adverse effects to the natural and beneficial floodplain values are not anticipated from the Project.

Table 5. Beneficial Use List

Beneficial use	Lake Berryessa to Yolo Bypass
Municipal and Domestic Supply	E
Irrigation	E
Stock Watering	E
Process Industry	E
Power Industry	E
Water Contact Recreation	E
Canoeing and Rafting Recreation	E
Other Non-Water Contact Recreation	E
Warm Freshwater Habitat	E
Cold Freshwater Habitat	E
Cold Spawning	E
Wildlife Habitat	E

Note: E= Existing

Source: California Regional Water Quality Control Board (2018)

4.2.3 Support of Probable Incompatible Floodplain Development

As defined by the FHWA, the support of incompatible base floodplain development will encourage, allow, serve, or otherwise facilitate incompatible base floodplain development, such as commercial development or urban growth.

The Project would not trigger incompatible floodplain development. The Project proposes to replace an already existing bridge. The proposed bridge would not create new access route to developed or undeveloped lands.

4.2.4 Longitudinal Encroachments

As defined by the FHWA, a longitudinal encroachment is an action within the limits of the base floodplain that is longitudinal to the normal direction of the floodplain.

A longitudinal encroachment is "[a]n encroachment that is parallel to the direction of flow. Example: A highway that runs along the edge of a river is usually considered a longitudinal encroachment." The requirement for consideration of avoidance alternatives must be included in a Location Hydraulic Study by including an evaluation and a discussion of the practicability of alternatives to any significant encroachment or any support of incompatible floodplain development.

Because the proposed bridge replacement would be approximately perpendicular to the direction of the flow for the 100-year flood, the Project would not be considered a longitudinal encroachment.

This page intentionally left blank

5 AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The proposed Project would not change the overall land use within the Project watershed. There would be an increase in impervious area. However, based on the results of the hydraulic analysis, the proposed bridge decreases the WSE. The Project has been designed to minimize floodplain impacts and special mitigation measures are not proposed.

5.1 Minimize Floodplain Impacts

The proposed bridge profile will be raised to clear the 100-year storm, but will not be raised to meet the 2 ft of freeboard over the 50-year WSE criteria. To minimize the floodplain impacts, the proposed bridge roadway approach is relatively insignificant and the WSE is maintained to prevent any additional blocking of flow in the floodplain.

5.2 Restore and Preserve Natural and Beneficial Floodplain Values

Temporary environmental impacts from construction activities for the proposed Project could be minimized with standard best management practice measures to reduce erosion such as protection of existing vegetation with erosion and sediment controls, stabilization of exposed soils, and revegetation. Per the Project's *Natural Environment Study* (NES) (Caltrans, 2021), there is no suitable habitat for special-status plant species in the Project area. There is suitable habitat for Swainson's hawk, white-tailed kite, tri-colored blackbird, and western pond turtle, which are species covered under the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan. Additionally, suitable habitat for the northern harrier, migratory birds, and raptors are within the Project area and are covered under the Migratory Bird Treaty Act and California Fish and Game Code. According to the NES, there will be no impact to the species listed above with the implementation of avoidance and minimization measures in accordance with the Yolo County Habitat Conservation Plan/Natural Community Conservation Plan. Mitigation for impacts to Union School Slough and the jurisdictional "Waters of the United States" will be addressed by purchasing credits at the USACE-approved mitigation bank or to a USACE-approved in-lieu fund. Regulatory permits and approvals are expected to be required from the RWQCB, USACE, and California Department of Fish and Wildlife (CDFW). A Section 401 Water Quality Certification from the RWQCB, a Section 404 Nationwide Permit from the USACE, and a Section 1602 Streambed Alteration Agreement from the CDFW are expected to be required for the Project.

5.3 Alternatives to Significant Encroachments

The Project would not be a significant encroachment to the base floodplain. Therefore, alternatives to significant encroachments were not analyzed.

5.4 Coordination with Local, State, and Federal Water Resources and Floodplain Management Agencies

The County will coordinate with local, state, and federal water resources and floodplain management agencies as necessary during all aspects of the proposed Project.

6 REFERENCES

Caltrans. (2020). *Highway Design Manual*. U.S. Customary Units. (Seventh Edition). <https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm> (Last accessed: November 4, 2021).

Caltrans. (2019). *California Amendments to the AASHTO LRFD Bridge Design Specifications (2017 Eighth Edition).* <https://dot.ca.gov/programs/engineering-services/manuals/lrfd-ca-amendments-8th-edition> (Last accessed: November 4, 2021).

Caltrans. (2017). Memo to Designers 16-1 Hydraulic Design for Structures over Waterways. <https://dot.ca.gov/-/media/dot-media/programs/engineering/documents/memotodesigner/f0006651-mtd-16-1-final.pdf> (Last accessed: November 4, 2021).

FEMA. (2020). Title 44 Section 60.3 "Flood plain management criteria for flood-prone areas," *Code of Federal Regulations*, U.S. Government Publishing Office. <https://www.govinfo.gov/content/pkg/CFR-2020-title44-vol1/pdf/CFR-2020-title44-vol1-sec60-3.pdf> (Last accessed: November 4, 2021).

FEMA. (2012). *Flood Insurance Study, Yolo County, California and Incorporated Areas*. Flood Insurance Study Number 06113CV000B.

FEMA. (2010). *Flood Insurance Rate Map, Yolo County, California and Incorporated Areas*. Map Number 06113C0580G. Panel 580 of 785.

FHWA. (2020). Title 23 Part 650. "Bridges, Structures, and Hydraulics," *Code of Federal Regulations*, U.S. Government Publishing Office. <https://www.govinfo.gov/content/pkg/CFR-2020-title23-vol1/pdf/CFR-2020-title23-vol1-part650-subpartA.pdf> (Last accessed: November 4, 2021).

Mark Thomas. (2018). Wreco_Yolo 3 Bridges_Union School_TO

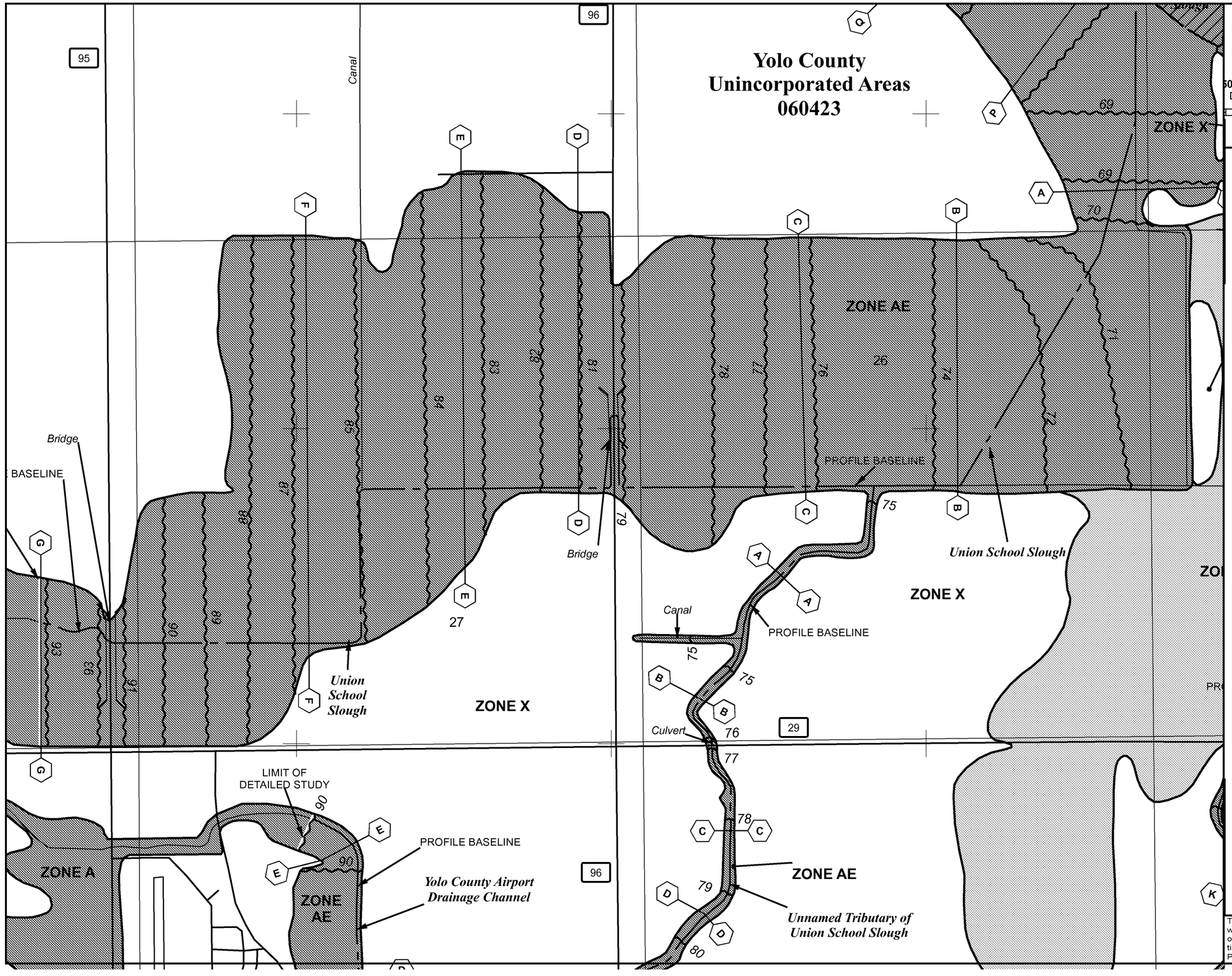
United States Army Corps of Engineers - Hydrologic Engineering Center. (2019). River Analysis System. HEC-RAS. (Version 5.0.7) [Computer software]. March 2019. Available from: https://www.hec.usace.army.mil/software/hec-ras/download.aspx.]

California Water Board. (2018) *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Board Central Valley Region.* https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/ > (Last accessed: November 4, 2021).

This page intentionally left blank

Appendix A Federal Emergency Management Agency Flood Insurance Rate Maps

This page intentionally left blank



NFIP

PANEL 0580G

FIRM

FLOOD INSURANCE RATE MAP

YOLO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 580 OF 785

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
YOLO COUNTY	060423	0580	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06113C0580G

EFFECTIVE DATE
JUNE 18, 2010

Federal Emergency Management Agency

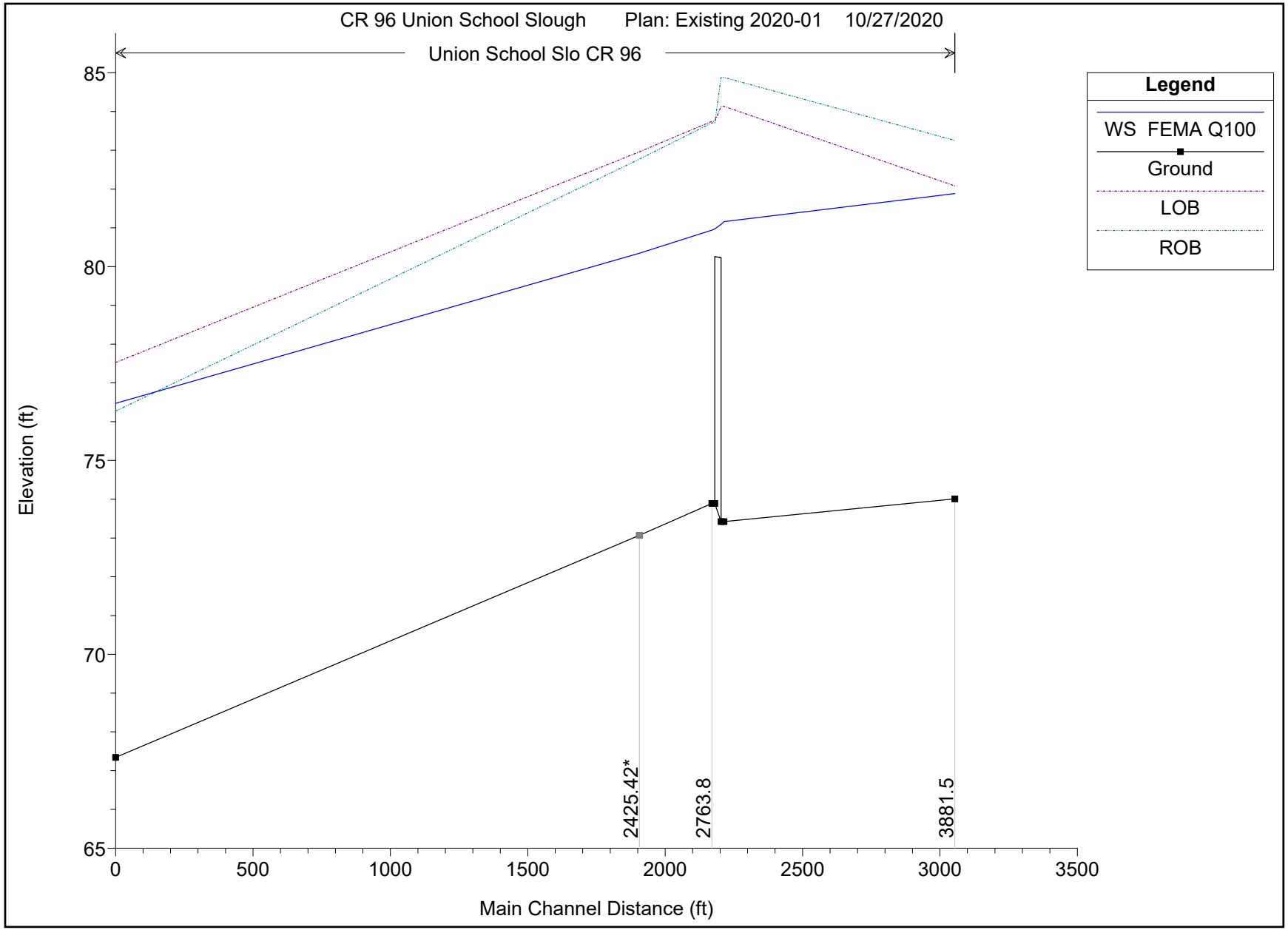
NATIONAL FLOOD INSURANCE PROGRAM

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

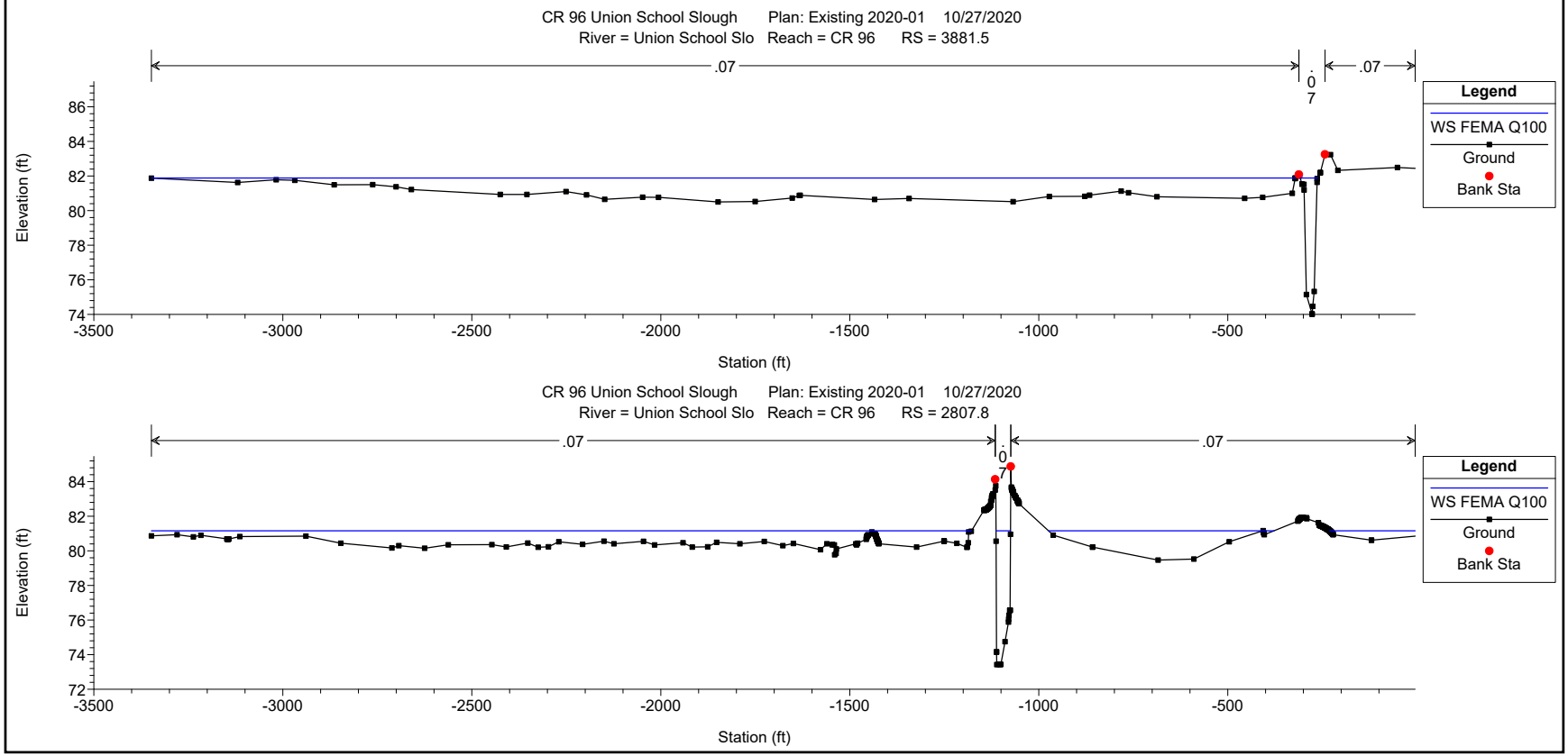
This page intentionally left blank

Appendix B HEC-RAS Results Output: Existing Condition

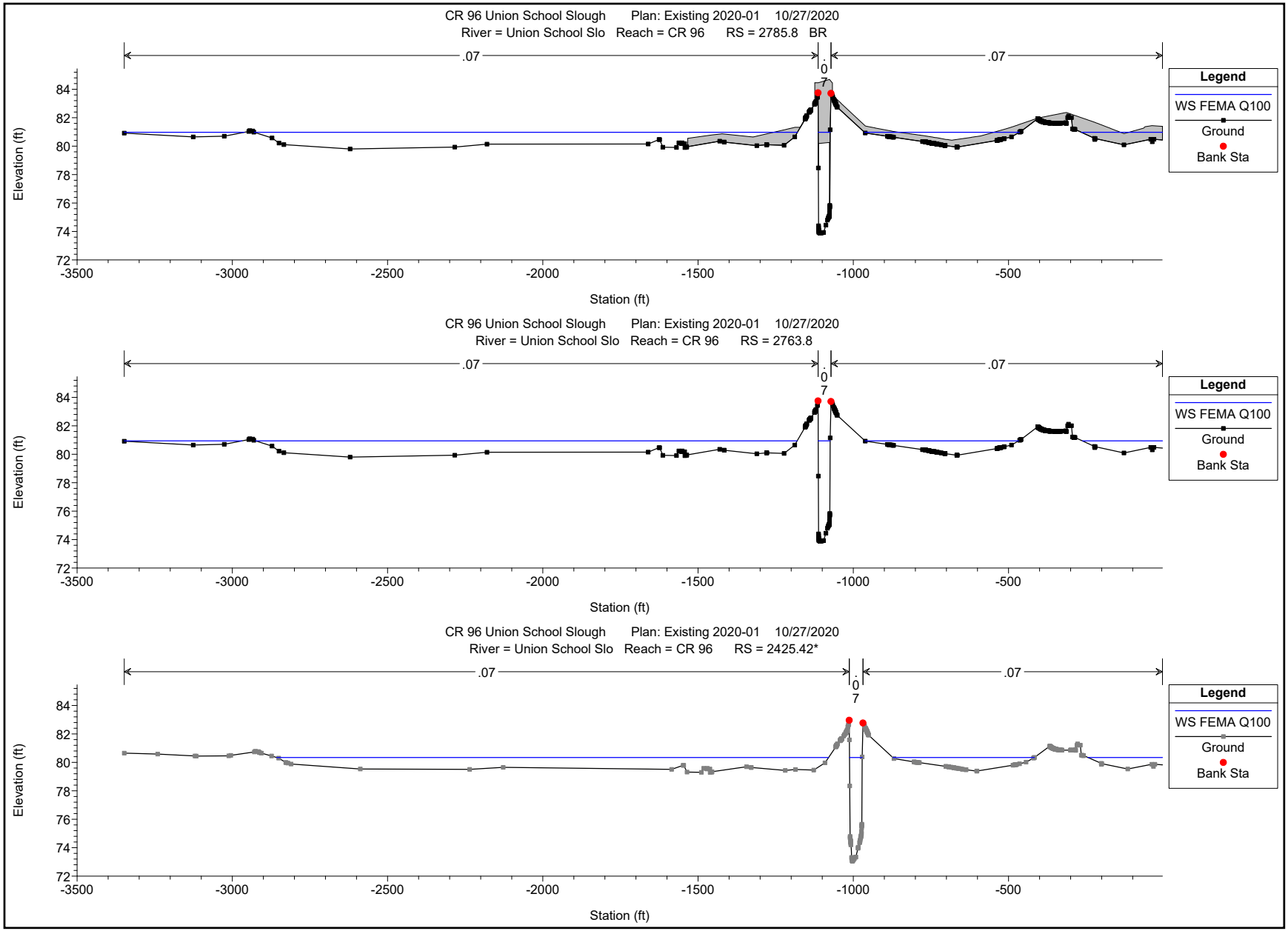
This page intentionally left blank


CR 96 Union School Slough Plan: Existing 2020-01 10/27/2020
Union School Slo CR 96
Legend
WS FEMA Q100
Ground
LOB
ROB
Elevation (ft)
85
80
75
70
65
0
500
1000
1500
2000
2500
3000
3500
Main Channel Distance (ft)
2425.42*
2763.8
3881.5

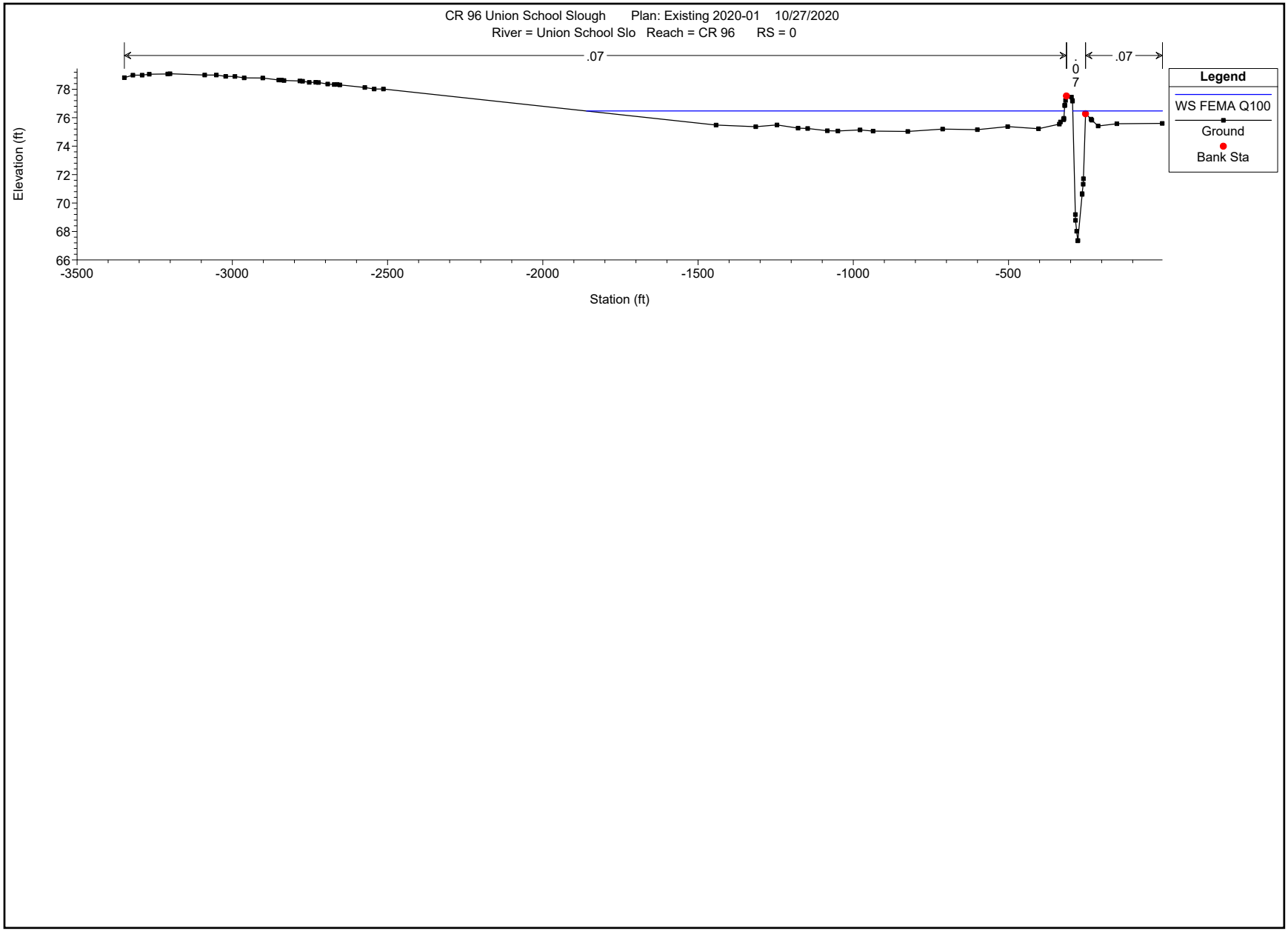
No Data for Plot



1 in Horiz. = 458 ft 1 in Vert. = 10 ft



1 in Horiz. = 458 ft 1 in Vert. = 10 ft



1 in Horiz. = 458 ft 1 in Vert. = 10 ft

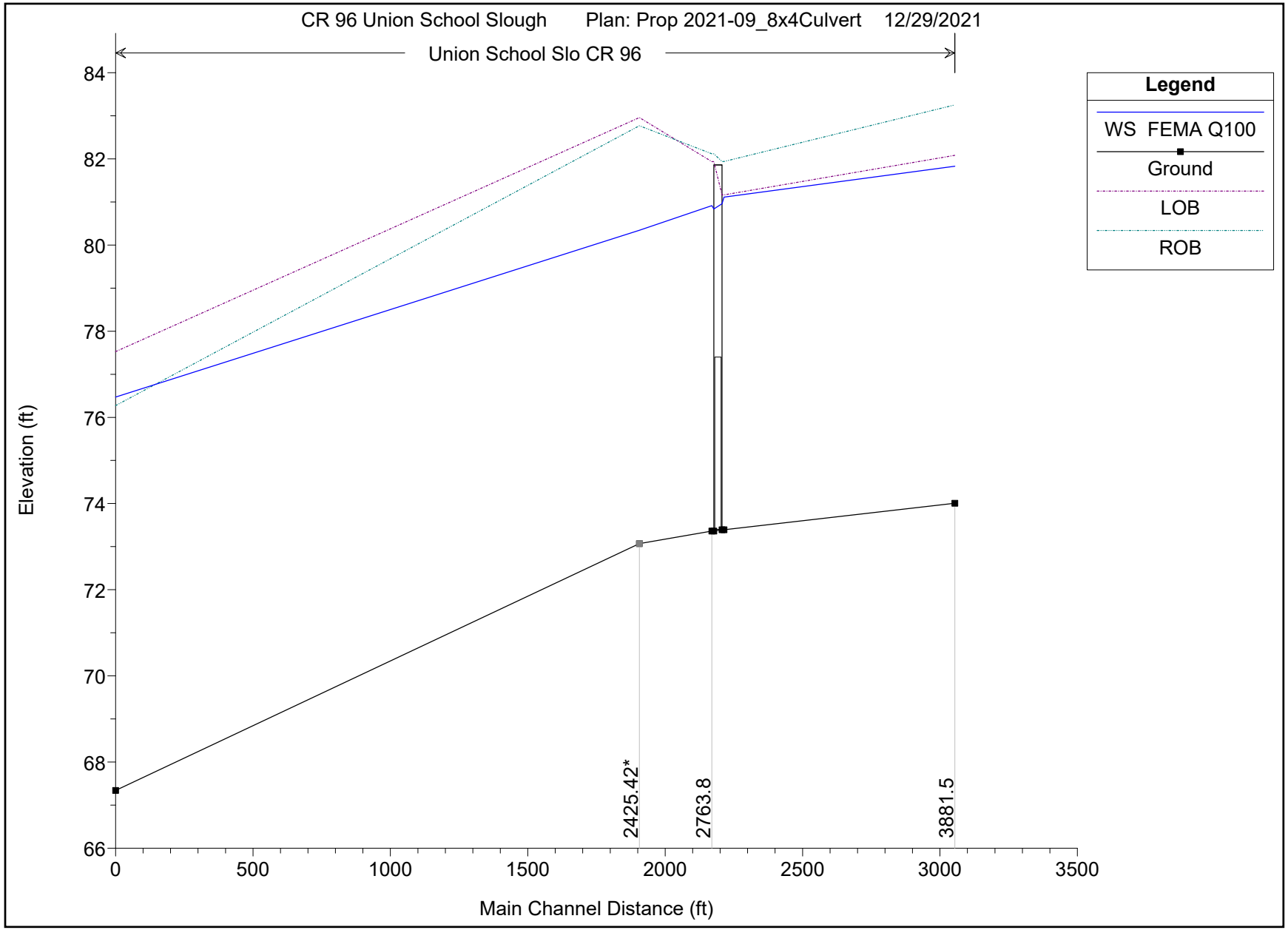
HEC-RAS Plan: Existing 2020-01 River: Union School Slo Reach: CR 96 Profile: FEMA Q100

Reach	River Sta	Profile	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)	
CR 96	3881.5	FEMA Q100	2280.00	74.01	81.88		81.90	0.001240	1.86	2932.65	3072.73	0.16
CR 96	2807.8	FEMA Q100	2280.00	73.42	81.16	80.71	81.20	0.001774	2.66	2422.81	3035.08	0.18
CR 96	2785.8		Bridge									
CR 96	2763.8	FEMA Q100	2280.00	73.89	80.94		80.99	0.002058	2.85	2217.12	2917.83	0.20
CR 96	2425.42*	FEMA Q100	2280.00	73.07	80.34	80.05	80.41	0.002535	3.20	1983.04	2518.82	0.23
CR 96	0	FEMA Q100	2280.00	67.34	76.47	75.88	76.51	0.001801	2.70	2042.06	1832.50	0.20

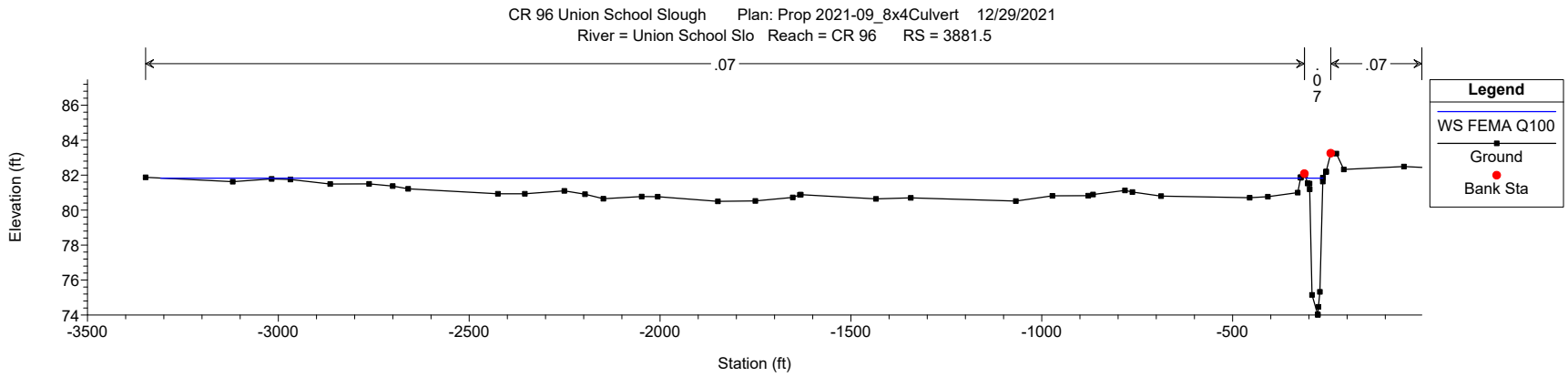
This page intentionally left blank

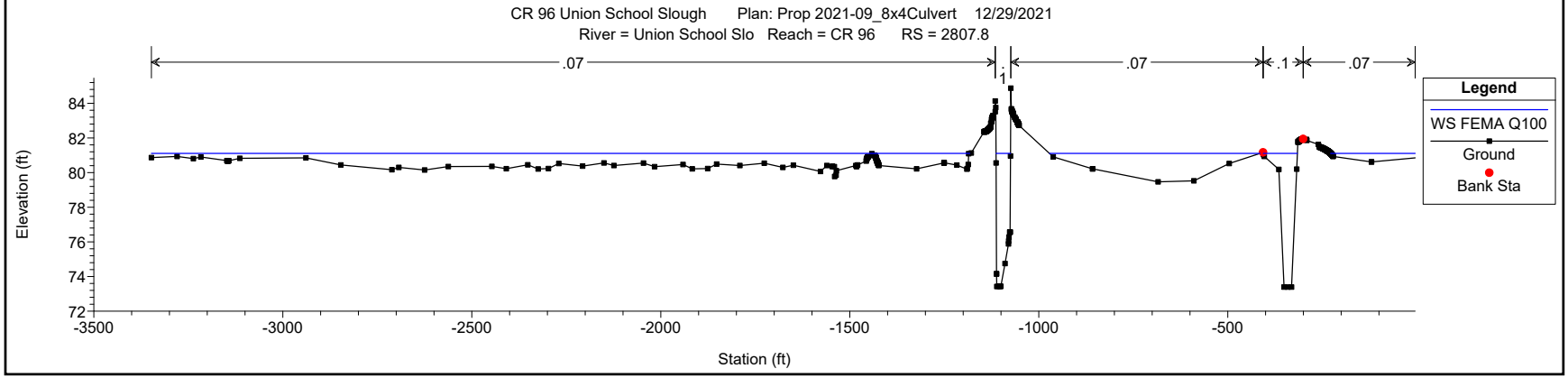
Appendix C HEC-RAS Results Output: Proposed

This page intentionally left blank

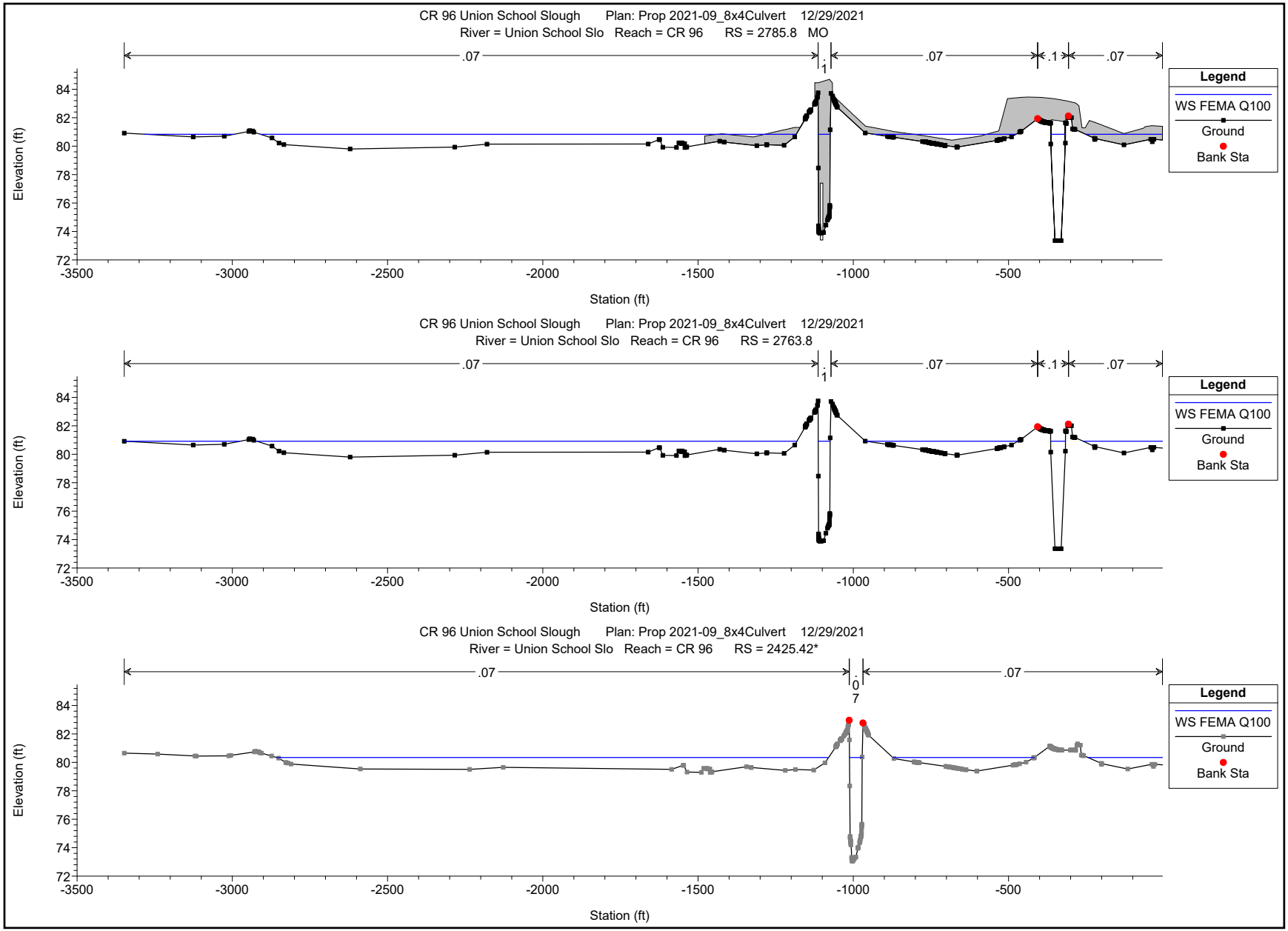

CR 96 Union School Slough Plan: Prop 2021-09_8x4Culvert 12/29/2021
Union School Slo CR 96
Legend
WS FEMA Q100
Ground
LOB
ROB
Elevation (ft)
84
82
80
78
76
74
72
70
68
66
0
500
1000
1500
2000
2500
3000
3500
Main Channel Distance (ft)
2425.42*
2763.8
3881.5

No Data for Plot

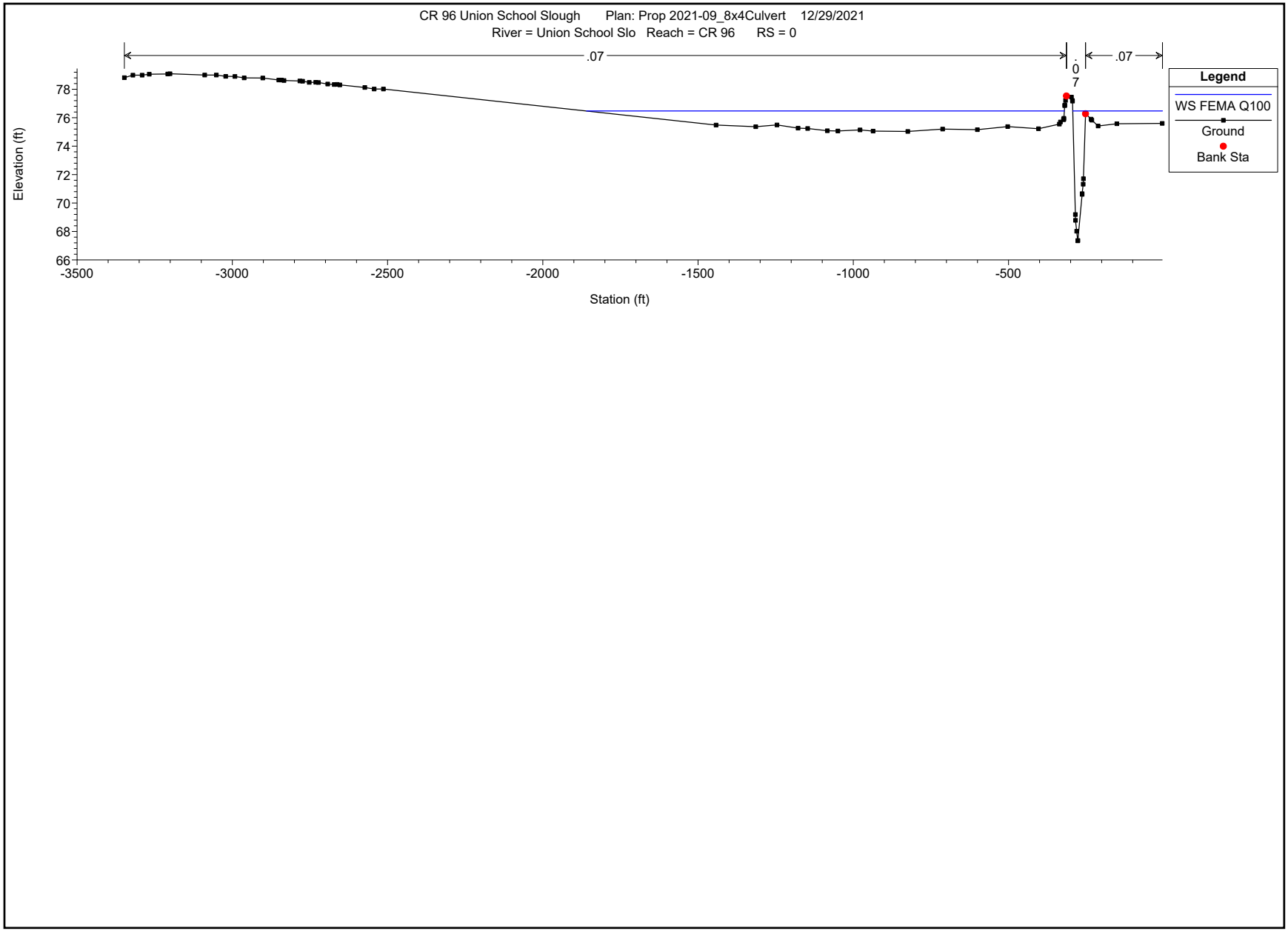




1 in Horiz. = 458 ft 1 in Vert. = 10 ft



1 in Horiz. = 458 ft 1 in Vert. = 10 ft



1 in Horiz. = 458 ft 1 in Vert. = 10 ft

HEC-RAS Plan: Prop 2021-09_8x4Culvert River: Union School Slo Reach: CR 96 Profile: FEMA Q100

Reach	River Sta	Profile	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)	
CR 96	3881.5	FEMA Q100	2280.00	74.01	81.83		81.85	0.001447	2.04	2767.50	3030.51	0.17
CR 96	2807.8	FEMA Q100	2280.00	73.39	81.11	77.54	81.13	0.001729	1.33	2567.62	3079.73	0.13
CR 96	2785.8		Mult Open									
CR 96	2763.8	FEMA Q100	2280.00	73.36	80.91		80.93	0.001699	1.81	2408.16	2947.50	0.14
CR 96	2425.42*	FEMA Q100	2280.00	73.07	80.34	80.05	80.41	0.002535	3.20	1983.04	2518.82	0.23
CR 96	0	FEMA Q100	2280.00	67.34	76.47	75.88	76.51	0.001801	2.70	2042.06	1832.50	0.20

This page intentionally left blank

Appendix G

Construction Noise Technical Memorandum

MEMORANDUM

To:	Thaleena Bhattal, Caltrans District 3 Associate Environmental Planner	Project No.:	SA-18139
Cc:	Mark Christison, Yolo County		
From:	Julie Passalacqua, Mark Thomas		
Date:	August 6, 2021		
RE:	**BRLO-5922(103) - Union School Slough Bridge Construction Noise Technical Memorandum**		

PURPOSE

The purpose of this construction noise technical memorandum is to demonstrate the noise generated from the construction of the County Road (CR) 96 over Union School Slough Replacement Project will result in less than significant impacts to the area residents.

PROJECT DESCRIPTION

Project Need

The existing bridge (Bridge No. 22C0126) has been given a sufficiency rating of 54.9 and has a status of structurally deficient. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has been an issue, which has only exacerbated the documented scouring at the site. The bridge has been programmed for replacement in the Highway Bridge Program (HBP).

Existing Conditions

CR 96 is a rural local roadway that extends between Russell Boulevard on the south and CR 27 on the north. Within the project vicinity, CR 96 is an unpaved, gravel road with an approximate width of 20 feet and no shoulders. The bridge, with an Average Daily Traffic of 200 vehicles, is bordered primarily by agricultural land. The existing bridge was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders.

Proposed Improvements

The proposed project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is anticipated to be a single-span structure, approximately 46 feet long. The structure type is expected to be a cast-in-place, post-tensioned concrete slab.

Construction of the bridge will involve excavation for and construction of concrete abutments, founded on driven steel pipe piles. Other temporary work within Union School Slough includes removal of the existing structure, falsework erection and removal, and installation of scour countermeasures at the abutments. Temporary slough diversion is anticipated to complete activities within the waterway. Construction of the roadway approaches will involve the removal of existing pavement and placement of roadway fill material, aggregate base, and hot mix asphalt pavement.

Relocation of overhead electrical lines, including two utility poles, along the east side of CR 96 is anticipated. A SMUD gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be southerly of the proposed bridge location and therefore not in conflict. The proposed project improvements will remain within the County's right of way and no permanent acquisitions are anticipated. Temporary construction easements will be needed from four parcels to facilitate driveway conforms, utility relocations, and allow construction access.

CONSTRUCTION NOISE

Project construction would generate noise that could affect sensitive receptors within the project vicinity. The FHWA defines a noise sensitive receptor as a property where frequent outside human use occurs and where a lowered noise level would be beneficial.

The table below shows typical equipment noise levels for various construction equipment and activities, including measured sound levels at 50 feet from the source. Noise sources associated with the project construction would include excavation, construction truck traffic, and other noises typically associated with a construction site.

Construction Equipment Noise Levels

Construction Equipment	Maximum Noise Level dBA at 50 feet
Backhoe	78
Compactor (ground)	83
Compressor (air)	78
Concrete Mix Truck	79
Concrete Pump Truck	81
Crane	81
Dozer	82
Drill Rig Truck	79
Dump Truck	76
Excavator	81
Front End Loader	79
Generator	81
Paver	77
Pneumatic Tools	85
Pumps	81
Roller	80
Scraper	84

Source: FHWA Roadway Construction Noise Model User's Guide, 2006

Yolo County does not currently have a Noise Ordinance. The Caltrans Standard Specifications will govern the allowable level of noise. Section 14-8.02 titled "Noise Control" of the Standard Specifications states "Control and monitor noise resulting from work activities. Do not exceed 86 dBA at 50 feet from the job site from 9:00 p.m. to 6:00 a.m."

EQUIPMENT NOISE CONTROL

To avoid substantial construction-period noise impacts to nearby sensitive receptors, the best practices listed below will be included during project construction. With implementation of these standard construction-period specifications, the project will not result in excessive construction-period noise effects.

1. Project-related noise-generating activities at, or adjacent to, the construction site shall comply with the Caltrans standard specifications section 14-8.02. "Control and monitor noise resulting from work activities. Do not exceed 86 dBA at 50 feet from the job site from 9:00 p.m. to 6:00 a.m."
2. All internal combustion engine driven equipment shall be equipped with the appropriate intake and exhaust mufflers, which are in good condition.
3. “Unnecessary” idling of internal combustion engines shall be strictly prohibited.
4. Avoid staging construction equipment within 200 feet of residences and locate all stationary noise-generating construction equipment as far as practical from existing noise receptors. Construct temporary barriers to screen noise generating equipment when located in areas adjoining noise-sensitive land uses.
5. “Quiet” air compressors and other stationary noise sources shall be used when applicable.
6. All construction traffic shall be routed to and from the project site via designated truck routes. Construction-related heavy truck traffic shall be prohibited in residential areas where feasible. Construction truck traffic shall be prohibited in the project vicinity during non-allowed hours.
7. The businesses, residents and schools in the project area shall be notified in writing by the County of the construction schedule.
8. The County shall designate a “noise disturbance coordinator” who will be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint and implement reasonable measures to correct the problem. The contractor shall visibly post the telephone number for the disturbance coordinator at the construction site. The County shall include the telephone number in the notice sent to residents regarding the construction schedule.

Appendix H

Initial Site Assessment

INITIAL SITE ASSESSMENT

County Road 96 Bridge Replacement Over Union School Slough

Yolo County, California

Bridge No. 22C0126

Prepared By:

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services

1100 Corporate Way, Suite 230
Sacramento, CA 95831

Project No. 18-474.1

May 10, 2021

Prepared For:

MARK THOMAS
701 University Ave, Suite 200
Sacramento, CA 95825

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Sacramento | Modesto | Pleasanton | Rocklin | Ukiah

Corporate Office: 1100 Corporate Drive, Suite 230 | Sacramento, CA 95831 | (916) 455-4225
Modesto: 1165 Scenic Drive, Suite A | Modesto, CA 95350 | (209) 312-7668
Pleasanton: 6200 Stoneridge Mall Road, Suite 330 | Pleasanton, CA 94588 | (925) 401-3515
Rocklin: 4220 Rocklin Road, Suite 1 | Rocklin, CA 95677 | (916) 455-4225
Ukiah: 100 North Pine Street | Ukiah, CA 95482| (707) 240-4400

18-474.1
May 10, 2021

Julie Passalacqua, PE
Mark Thomas
701 University Avenue, Suite 200
Sacramento, CA 95825

Subject: **Initial Site Assessment**
County Road 96 Bridge Replacement over Union School Slough
Yolo County, California
Existing Bridge No. 22C0126

Dear Ms. Passalacqua:

Crawford & Associates, Inc. has prepared this Initial Site Assessment for the County Road 96 Bridge Replacement over Union School Slough in Yolo County, California. The purpose of this assessment is to identify and provide a preliminary assessment of the potential impacts of known or potential Recognized Environmental Conditions within the study area that may influence design and construction of the project.

We include an executive summary, property information, summary of a records review, reconnaissance observations, findings and recommendations, and limitations in this report.

We appreciate the opportunity to be on your team for the County Road 96 over Union School Slough Bridge Replacement Project. Please call us if you have questions or comments.

Sincerely,

CRAWFORD & ASSOCIATES, INC.

Stephen J. Carter
P.G. #5577
Senior Geologist

PROFESSIONAL GEOLOGIST
Stephen J. Carter
No. 5577
STATE OF CALIFORNIA

Reviewed by:

Chris Trumbull
G.E. #2494
Senior Project Manager

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER D. TRUMBULL
GE 2492
Exp. 6/30/21
GEOTECHNICAL
STATE OF CALIFORNIA

Taber
Since 1954

TABLE OF CONTENTS

1 EXECUTIVE SUMMARY 1
2 INTRODUCTION 2
2.1 PURPOSE 2
2.2 SCOPE OF SERVICES 2
2.3 PROJECT DESCRIPTION 3
2.4 PROJECT LOCATION 4
2.5 GEOLOGIC CONDITIONS 4
2.6 HYDROGEOLOGIC CONDITIONS 5
2.7 CURRENT LAND USE 6
3 RECORDS REVIEW 7
3.1 HISTORICAL LAND USE 7
3.1.1 HISTORICAL AERIAL PHOTOGRAPHS 7
3.1.2 HISTORICAL TOPOGRAPHIC MAPS 8
4 DATABASE SEARCH AND RECORDS REVIEW 9
4.1 DATABASE SEARCH 9
4.2 SUMMARY OF RECORDS SEARCH 9
4.2.1 ADDITIONAL DATABASE SEARCHES 10
4.2.2 UNLOCATED FACILITIES 10
4.3 INTERVIEWS 10
5 SITE RECONNAISSANCE 11
6 ENVIRONMENTAL ANALYSIS 12
6.1 ASBESTOS CONTAINING CONSTRUCTION MATERIAL (ACCM) 12
6.2 AERIALLY DEPOSITED LEAD (ADL) 13
6.2.1 HAZARDOUS WASTE CLASSIFICATION CRITERIA 13
6.2.2 ANALYTICAL LABORATORY RESULTS 14
6.3 LEAD-BASED PAINT 14
7 FINDINGS 14
7.1 POTENTIAL HAZARDOUS MATERIALS SITES 15
7.2 GENERAL HAZARDOUS MATERIALS ISSUES 15
7.2.1 ASBESTOS CONTAINING CONSTRUCTION MATERIAL (ACCM) 15
7.2.2 LEAD-BASED PAINT 15
7.2.3 AERIALLY DEPOSITED LEAD (ADL) 16
7.2.4 AGRICULTURAL CHEMICALS 16
7.2.5 CHEMICALLY TREATED WOOD 17
7.2.6 NATURALLY OCCURRING ASBESTOS (NOA) 17
7.2.7 PETROLEUM HYDROCARBONS 17
7.2.8 THERMOPLASTIC TRAFFIC STRIPING 17
7.2.9 TRANSFORMERS 18
7.2.10 UNKNOWN HAZARDOUS CONDITIONS 18
7.3 SUMMARY OF FINDINGS 18
8 RECOMMENDATIONS 18
9 LIMITATIONS 19

LIST OF TABLES

Table 1: APNs For Properties Contiguous to Existing Bridge....6
Table 2. APNs For Properties Contiguous to New Bridge Location....6
Table 3. Historical Aerial Photographs....7
Table 4. Historical Topographic Maps....8
Table 5. Summary of ADL Analytical Data....14

APPENDICIES

APPENDIX A – Site Maps
APPENDIX B – Project Site Photographs
APPENDIX C – Historical Aerial Photographs
APPENDIX D – Historical Topographic Maps
APPENDIX E – GeoSearch Radius Report
APPENDIX F – NAL Report
APPENDIX G – BC Laboratories Report
APPENDIX H – Caltrans Unknown Hazards Procedure

1 EXECUTIVE SUMMARY

Crawford & Associates, Inc. (CAInc) performed an Initial Site Assessment (ISA) for the County Road 96 over Union School Slough Bridge Replacement Project in Yolo County, California. The existing bridge is a two-lane, 40-foot long, single span bridge. The proposed bridge replacement will consist of a 46-foot long bridge located ±750 ft south of the existing bridge to allow Union School Slough to flow directly east. A culvert crossing will replace the bridge at its existing location.

The purpose of this ISA is to identify recognized soil or groundwater contamination and hazardous material issues that may affect the planned project improvements. Based on the records reviewed and a reconnaissance of the project site, CAInc makes the following observations:

- The project site was not identified in the database records reviewed.
- The database records searched and historical topographic maps reviewed did not identify Recognized Environmental Conditions (RECs) or historical RECs that have potentially impacted the project site.
- Historical aerial photographs indicate that properties in the immediate vicinity of the bridge were utilized for agriculture from at least 1937.
- Asbestos-containing construction material (ACCM) was not observed at the bridge structure; the culvert has not been evaluated for ACCM.
- Evidence of naturally occurring asbestos (NOA), including serpentine or ultramafic rock, was not observed at the project site.
- Soil samples were collected to evaluate concentrations of Aerially Deposited Lead (ADL); total lead concentrations in all soil samples were below hazardous thresholds.
- A reconnaissance of the project site identified conditions indicating the presence of RECs that might impact the project.
- Utility poles and electrical transformers are present near the project site.
- The project site is surrounded by agriculture; the application of chemicals was observed in an adjacent orchard.
- White paint on the concrete bridge guard rails was observed to be flaking and peeling.

The proposed project will impact County Road 96 (CR96) at two locations: The Union School Slough Bridge and ±750 ft south of the bridge where a replacement bridge will be constructed. The following general hazardous materials or environmental concerns are typical of similar projects and have been evaluated in this assessment. A detailed discussion is provided in Section 8.1 that considers the following:

- Asbestos Containing Construction Material
- Aerially Deposited Lead
- Lead-based Paint
- Agricultural Chemicals (Pesticides/Herbicides)
- Chemically Treated Wood
- Naturally Occurring Asbestos
- Petroleum Hydrocarbons
- Thermoplastic Traffic Striping
- Electrical Transformers

Based on the public records, historical aerial photographs, and historical topographic maps reviewed for this project, and the site reconnaissance performed on April 3, 2020, CAInc offers the following recommendations:

- Soil samples should be collected and analyzed prior to construction to evaluate residual concentration of agricultural chemicals.
- Prior to demolition, the concrete culvert located ±750 ft south of the bridge, where the proposed bridge would be constructed, should be tested for asbestos. Alternatively, assume the culvert contains asbestos, and handle and dispose of the material properly.
- Lead-based paint was identified on the bridge. A lead compliance plan that protects workers and the environment from lead exposure will need to be prepared prior to implementation of demolition and construction activities within the project site. Painted bridge components will need to be removed, transported, and recycled or disposed of in a manner consistent with the lead compliance plan and applicable State and Federal law.

This report identifies RECs and general hazardous materials issues that may be present at the site, and provides recommendations for further investigation, as warranted. Additional research and assessment may provide more certainty on conditions to be encountered during demolition and construction.

2 INTRODUCTION

2.1 PURPOSE

The following report summarizes an ISA performed by CAInc for the CR 96 over Union School Slough Bridge Replacement Project in Yolo County, California, as shown in Figures 1 and 2 in Appendix A. This ISA was prepared for use by the Yolo County for this specific project in accordance with the agreement between Mark Thomas and CAInc, dated July 20, 2018. The purpose of this ISA is to help identify potential or known hazardous materials and hazardous waste impacts that have the potential to impact the project site.

We use the term Recognized Environmental Condition consistent with ASTM E1527-13. ASTM E1527-13 defines REC as:

> *"The presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."*

2.2 SCOPE OF SERVICES

- CAInc completed the following tasks to prepare this ISA:
- Reviewed available project documents, reports, plans and figures, including the project description, Geometric Approval Drawing dated January 4, 2019, site geology and groundwater data.
- Initiated a search request with GeoSearch to review federal, state, and local regulatory agency databases to determine whether areas of environmental concern exist on or near

the project site. Search distances ranged between ⅛ and one mile from the project site, depending on the database.

- Reviewed the following online databases for information associated with the project alignment and vicinity:
  - State Water Resources Control Board (SWRCB) GeoTracker website;
  - California Department of Toxic Substances Control (DTSC) EnviroStor website;
  - California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (SWIS) facility database; and
  - California Department of Conservation, Geologic Energy Management Division (CalGEM, formerly DOGGR) online mapping application, Well Finder.
- Reviewed historical aerial photographs, topographic maps, and soil maps of the site and surrounding properties for indications of site use and potential sources of contamination.
- Conducted a limited site reconnaissance to observe current land use and indications of potential contamination at the site, and to view publicly accessible portions of the adjacent properties.
- Conducted a screening-level program of Aerially Deposited Lead. The ADL program included the collection of soil samples and testing (by an analytical laboratory) for total lead and soluble lead.
- Arranged for a certified asbestos consultant (CAC) to visit the site and collect samples for asbestos analysis or reference and to prepare a report of their findings.
- Collected a paint sample for analysis of lead concentration.
- Contacted the Yolo County Division of Environmental Health to discuss an unlocatable site identified in the GeoSearch report.
- Contacted the Yolo County Agriculture Department to discuss pesticide use in the project vicinity.

2.3 PROJECT DESCRIPTION

Yolo County proposes to replace the existing bridge on County Road (CR) 96 crossing over Union School Slough with funding made available through the FHWA Highway Bridge Program and administered by Caltrans. The bridge was determined to be structurally deficient by Caltrans as recently as 2013 and currently has a sufficiency rating of 54.9.

The project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113. County Road (CR) 96 is a rural local roadway that extends between Russell Boulevard on the south and CR 27 on the north. Within the project vicinity, CR 96 is an unpaved, gravel road with an approximate width of 20 feet and no shoulders. The bridge, with an Average Daily Traffic of 200 vehicles, is bordered primarily by agricultural land. There are no posted speed limits within the project vicinity.

The existing bridge (Bridge No. 22C0126) was constructed in 1930 and is approximately 40 feet long and 20 feet wide. The structure consists of single-span reinforced concrete T-girders. The bridge has extensive deck cracking, with longitudinal cracking along the bottom of all girders. Spalls with exposed rebar are also visible on the girders and soffit, and abrasion with exposed rebar is evident on the face of the northern abutment (Abutment 2). Sections of the bridge railing have completely spalled, exposing the rebar. Debris and mud build-up under the bridge has been an issue, which has only exacerbated the documented scouring at the site.

The proposed project will construct a new bridge to the south of the existing structure, such that Union School Slough can flow straight east under CR 96. A box culvert will be installed at the

current crossing to accommodate overflows and maintain the environmental benefit of the existing watercourse spur. The new bridge will accommodate two 11-foot travel lanes and two-foot shoulders. The new bridge is anticipated to be a single-span structure, approximately 46 feet long. The structure type is expected to be a cast-in-place, post-tensioned concrete slab.

Construction of the bridge will involve excavation for and construction of concrete abutments, founded on driven piles. Construction of the roadway approaches will involve the placement of new roadway fill material, aggregate base, hot mix asphalt pavement, and installation of guard rail. Tree removal and removal of other vegetation along the slough will be necessary for the project. Temporary work within Union School Slough includes removal of the existing structure, installation of a pipe culvert at the existing bridge location, falsework erection and removal, and installation of scour countermeasures at the abutments. Temporary slough diversion is anticipated in order to complete activities within the waterway.

Relocation of overhead electrical lines, including two utility poles, along the east side of CR 96 is anticipated as part of the project. A SMUD gas line running east-west just south of Union School Slough was positively located through potholing and was determined to be southerly of the proposed bridge location and therefore not in conflict. The proposed project improvements will remain within the County's right of way and no permanent acquisitions are anticipated. Temporary construction easements will be needed from four parcels adjacent to the bridge to facilitate driveway conforms, utility relocations, and allow construction access.

During construction, CR 96 will be closed to through traffic and a detour route made available. Vehicular traffic will be able to utilize CR 95, 27 and 29 as alternative routes. Construction is anticipated to begin in Spring 2023 and have a duration of approximately eight months.

Site maps are provided in Appendix A; site photographs are provided in Appendix B.

2.4 PROJECT LOCATION

The project site is located within the southern region of Yolo County, between Interstate 505 and State Route 113, approximately seven miles northwest of Davis, California. CR 96 is a rural local roadway that extends between Russell Boulevard on the south and CR 27 on the north. The existing bridge location is on CR 96 approximately ±0.65 miles north of the intersection with CR 29 and over one mile northeast of the Yolo County Airport. Coordinates of the existing bridge are approximately latitude 38.6000°N and longitude 121.8401°W. The proposed replacement bridge is located ±750 ft south of the existing bridge with coordinates at approximately latitude 38.5979°N and longitude 121.8401°W.

2.5 GEOLOGIC CONDITIONS

The proposed bridge site lies within the southern Sacramento Valley portion of the Central Valley geomorphic province. Recent geologic mapping from the California Geological Survey[1] indicates the immediate vicinity of the bridge site is underlain by Holocene-age basin deposits (fine-grained sediments of late Holocene age with horizontal stratification deposited by standing or slow-moving water in topographic lows, identified as Qhb in Figure 3). Other sediments in the general vicinity of the project site are mapped as and Pliocene age Tehama Formation (poorly

[1] Gutierrez, C. I., 2011, Preliminary geologic map of the Sacramento 30′ x 60′ quadrangle, California: California Geological Survey, scale 1:100,000.

consolidated, non-marine, pale green, gray and tan siltstone, tuff, and pebble to cobble conglomerate, identified as Pth on Figure 3), and early to late Pleistocene age alluvial deposits (identified as Qao_3 on Figure 3) comprising alluvial fan, stream terrace, basin, and channel deposits; topography is gently rolling with little or no original alluvial surfaces preserved; moderately to deeply dissected. These materials have previously been mapped[2] as Quaternary age Modesto-Riverbank Formations, described as arkosic alluvium, sand with minor gravel, and silt.

Based on the distribution of Tehama Formation sediments in the general project site vicinity, the project site appears to be situated at the southern end of the Dunnigan Hills, formed by a set of southeasterly plunging anticlines and syncline. Topography in the project site vicinity is flat; the Dunnigan Hills exhibit topographic expression starting ±10 miles north of the project site.

Exploratory borings drilled in the immediate vicinity of the proposed bridge encountered alluvial material consisting primarily of clay and silt with minor amounts of predominantly fine sand to a depth of approximately 77.5 ft below ground surface (bgs). This material appears to be generally consistent with the basin (Qhb) and alluvial (Qao_3) deposits described above. Four feet of angular gravel was encountered at the base of one boring (77.5 to 81.5 ft bgs) that may be related to the Modesto or Riverbank formations, or less likely, the Tehama Formation.

No faults are mapped in the immediate project site vicinity. Based on mapping from the US Geological Survey,[3] the nearest faults are the Dunnigan Hills fault (last movement <130,000 years age) ±8.7 miles to the north, the Midland fault (last movement <1.9 Ma) ±11.9 miles to the south, and the Great Valley thrust fault (last movement <1.9 Ma) ±9.9 miles to the west-southwest. The Dunnigan Hills fault and other Quaternary age faults in the general site vicinity are shown on Figure 4 in Appendix A. No evidence of faulting, springs or seeps was observed within or immediately adjacent to the project site during reconnaissance.

The project site is not mapped within a regulatory Zone of Required Investigation with respect to known or suspected earthquake-triggered ground failures, including the Alquist-Priolo Earthquake Fault Zone.[4,5]

Mapping by the California Department of Mines and Geology indicates there are no ultramafic rocks (rocks likely to contain naturally occurring asbestos) within a mile of the project site.[6]

2.6 HYDROGEOLOGIC CONDITIONS

The project site is located within the Sacramento Valley groundwater basin (Yolo Subbasin). Based on the Department of Water Resources' Sustainable Groundwater Management Act Data Viewer,[7] the groundwater elevation beneath the project site in fall 2019 was ±67 ft above mean sea level (±14 ft bgs), with flow toward the west. In spring 2020, the groundwater elevation was ±65 ft above mean sea level (±15 ft bgs), with flow toward the west to west-southwest. The

[2] Wagner, D.L., Jennings, C.W., Bedrossian, T.L. and Bortugno, E.J., 1981, Geologic map of the Sacramento quadrangle, Califonria: California Division of Mines and Geology, Map No. 1A, scale 1:250,0000.
[3] https://earthquake.usgs.gov/hazards/qfaults/
[4] http://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=regulatorymaps
[5] https://maps.conservation.ca.gov/cgs/EQZApp/app/
[6] Churchill, R.K., and Hill, R.L., 2000, A generalized location guide for ultramafic rock in California–areas more likely to contain naturally occurring asbestos: California Division of Mines and Geology, Open-File Report 2000-19.
[7] https://sgma.water.ca.gov/webgis/?appid=SGMADataViewer#gwlevels

recent high groundwater elevation was measured in spring 2019 at ±77 ft above mean sea level (±4 ft bgs), and the recent low groundwater elevation was measured in spring 2015 at ±33 ft above mean sea level (±48 ft bgs).

According to the Federal Emergency Management Agency's flood insurance rate map 06113C0580G[8] dated June 18, 2010, the project site is mapped in Zone AE. Zone AE is defined as a special flood hazard area subject to inundation by the 1% annual chance flood (100-year flood) where base flood elevations (BFE) have been determined. The BFE at the project site is identified as 79 ft.

2.7 CURRENT LAND USE

All lands adjacent to the existing and proposed bridge sites are currently developed for agricultural uses. Parcels immediately adjacent to the existing bridge are identified in Table 1, and parcels adjacent to the new bridge location are identified in Table 2; these parcel numbers have been included on the Project Site Map (Figure 2).

Table 1: APNs For Properties Contiguous to Existing Bridge

Bridge corner	APN Error! Bookmark not defined.
Northwest	040-180-012
Northeast	040-170-001
Southwest	040-180-012
Southeast	040-170-001

APN = Assessor Parcel Number

Table 2. APNs For Properties Contiguous to New Bridge Location

	APN Error! Bookmark not defined.
West side CR 96	040-180-012
West side CR 96	040-220-013
East side CR 96	040-170-001
East side CR 96	040-170-003

APN = Assessor Parcel Number

[8] https://msc.fema.gov/portal/search#searchresultsanchor

3 RECORDS REVIEW

3.1 HISTORICAL LAND USE

In general, properties in the vicinity of the project site have been wholly agricultural through the present day. The project site includes the existing bridge site, the proposed bridge site, and the area in between.

3.1.1 HISTORICAL AERIAL PHOTOGRAPHS

Aerial photographs were provided by GeoSearch for the years shown in Table 3. The photographs were reviewed for information about historical conditions and land use within the study area. The photos are described in chronological order below. Aerial photographs are included in Appendix C.

Table 3. Historical Aerial Photographs

Year	Source	Scale
1937	ASCS	1 in = 500 ft
1954	AMS	1 in = 500 ft
1957	ASCS	1 in = 500 ft
1964	ASCS	1 in = 1,320 ft
1968	USGS	1 in = 500 ft
1974	USGS	1 in = 500 ft
1984	USGS	1 in = 500 ft
1993	USGS	1 in = 500 ft
2003	USDA	1 in = 500 ft
2004	USDA	1 in = 500 ft
2005	USDA	1 in = 500 ft
2006	USDA	1 in = 500 ft
2009	USDA	1 in = 500 ft
2010	USDA	1 in = 500 ft
2012	USDA	1 in = 500 ft
2014	USDA	1 in = 500 ft
2016	USDA	1 in = 500 ft

1937 The project vicinity surrounding the bridge site consists wholly of agriculture. No structures are evident. A north-south road is visible in the present location of CR 96. A canal (presumably for irrigation) is depicted parallel to CR 96 on the east side of the road. An east-west flowing canal is shown perpendicular to CR 96 on the west side of the road. Union School Slough meanders in a generally east-west direction, crossing under CR 96 at the location of the existing bridge. Meander scars are evident. Sinuous lines on the landscape indicate the crop being produced may be rice.

1954 Low quality photograph. No significant changes are detectable.

1957 Five structures surrounded by trees appear to represent a residence and agricultural buildings ±1,400 ft south of the bridge on the east side of CR 96. The path of Union School

Slough has been straightened; its former path occupied by crops. The canals paralleling CR 96 on both sides are evident.

1964 Low quality photograph. Union School Slough has been channelized on the east side of CR 96. The configuration appears to match current conditions.

1968 Two new structures are evident south of the residence on the east side of CR 96.

1974 No substantive changes from the 1968 photo.

1984 Low quality photograph. Union School Slough no longer flows through the field on the west side of CR 96. Agricultural land uses remain.

1993 The flow pattern of Union School Slough appears to match the current conditions within the project vicinity, with canals flowing in a north-south direction on either side of CR 96, looping at the bridge.

2003 – 2006 No substantive changes from the 1993 photo.

2009 Union School Slough appears to be meandering through the field on the east side of the project site, contrary to previous photos indicating a homogenous crop field.

2010 Agricultural use of the field on the east side of the project site is indiscernible; the field could be fallow.

2012 - 2016 The field on the east side of the project site appears to be planted to orchard.

3.1.2 HISTORICAL TOPOGRAPHIC MAPS

Historical topographic maps were provided by GeoSearch for the years shown in Table 4 and are discussed in chronological order below. Maps were reviewed for significant changes in topography or property improvements. Topographic maps are included in Appendix D.

Table 4. Historical Topographic Maps

Year	Quad	Scale
1907	Woodland, CA	1 in = 5,208 ft
1915	Yolo, CA Merritt, CA	1 in = 2,640 ft
1941	Yolo, CA	1 in = 5,208 ft
1952	Merritt, CA	1in = 2,000 ft
1953	Woodland	1 in = 5,208 ft
1968 (Photorevision)	Merritt, CA	1in = 2,000 ft
1975 (Photorevision)	Merritt, CA	1 in = 2,000 ft
1981 (Photorevision)	Merritt, CA	1 in = 2,000 ft
1992	Merritt, CA	1 in = 2,000 ft
2012	Merritt, CA	1 in = 2,000 ft

1907 The existing roads, CR 96 and CR 29 are depicted, and a meandering waterway passes under CR 96; a bridge is depicted at the crossing. A structure, presumably a residence or agricultural building due to its location on land used for agriculture, is depicted ±1,500 ft east of the bridge. Topographic contours indicate the site is flat with an elevation of ±75 ft above mean sea level. No other development is shown in the project vicinity.

1915 No substantive changes are indicated from the 1907 map.

1941 The structure on the previous map is no longer shown. No other substantive changes are evident from the 1915 map.

1952 A structure, presumably a residence or agricultural building, is evident ±1,300 ft south of the bridge on the east side of CR 96. A well is indicated approximately ±2,000 ft south of the bridge, also on the east side of the road. No other human-made features are indicated on the map.

1953 No substantive changes are evident from the 1952 map.

1968 Three additional structures are evident surrounding the structure south of the bridge, creating a cluster of four structures. Based on the agricultural use of the land and future aerial photographs, the structures likely represent a residence and agricultural buildings. A square structure (likely an agricultural building) is also evident due east of the well.

1975 - 1981 No substantive changes are evident from the 1968 map.

1992 Two more structures are depicted near the well. Based on current aerial photographs, these structures may represent agricultural buildings. No other substantive changes are evident from the 1968 map.

2012 No human-made features beside streets are shown on this map; the configuration appears to match current conditions. No substantive changes are evident from the 1968 map.

4 DATABASE SEARCH AND RECORDS REVIEW

4.1 DATABASE SEARCH

Databases and site lists maintained by environmental regulatory agencies were searched for properties within the study area to identify sites with known releases of hazardous materials or petroleum products, and sites with the potential for such releases. Each of the following databases and site lists was searched for sites within the ASTM standard search radius relative to the project site. Refer to the GeoSearch Radius Report (dated April 1, 2020) in Appendix E for descriptions of the databases and lists searched, and the dates they were last updated.

4.2 SUMMARY OF RECORDS SEARCH

The project site was not identified in any of the lists or databases reviewed by Geosearch. No suspect facilities were identified within 0.5 miles of the project site. The nearest reported site is the Yolo County Airport, located ±0.7 miles southwest of the project site, listed in the Formerly Used Defense Sites (FUDS) database. During World War II, the Federal Government acquired

the airport property for use as an alternate flight strip. Underground fuel storage tanks, fuel stands, and piping have been removed, and the associated environmental assessment was completed in 2016. Munitions were stored at the site, but no munitions have been identified at the site subsequent to base closure.[9] Due to the distance between the two sites and the nature of the hazard, this facility is unlikely to have impacted the project site. Refer to the Radius Report (map ID 1) included in Appendix E for additional information.

4.2.1 ADDITIONAL DATABASE SEARCHES

On April 22, 2020, CAInc reviewed the State of California's GeoTracker,[10] EnviroStor,[11] and SWIS[12] websites to identify additional facilities that might have recently been added since GeoSearch updated their databases (database version dates are listed in the Radius Report, Appendix E). There is an open case with the Regional Water Quality Control Board (RWQCB) at the Yolo County Airport involving paint stripping operations in the 1980's discharged to an unlined pond. Samples collected in the 1980's from another part of the airport indicate impacts from crop dusting operations. A work plan to assess soil and groundwater impact at these two areas was submitted and accepted by the RWQCB in 2019, but no information was available on the progress or results. The locations of the two impacted areas are ±7,400 and ±8,000 feet southwest of the project site. Based on distances from the project site and the regional groundwater flow direction, it is unlikely that these sites have impacted the project site. No additional facilities were identified within one mile of the project site.

CAInc reviewed the State of California's Well Finder website[13] (April 22, 2020) to identify gas, petroleum or geothermal wells in the site vicinity. The Fairfield Knolls Gas field (ABD) is located ±2,600 ft south-southwest of the project site. However, no operating or abandoned wells were identified within one mile of the project site.

4.2.2 UNLOCATED FACILITIES

GeoSearch identified one record that could not be mapped due to limited or incomplete address information. Teichert Aggregates (Site ID# 2869472358), located on CR 29, Davis, is identified in the Yolo County Leaking Storage Tank database (YLST). CAInc searched the GeoTracker and EnviroStor websites for a Teichert Aggregates facility on CR 29 in Davis and found no records. CAInc contacted the Yolo County Environmental Health Division who was able to locate the incomplete record (SL0611327226).[14] The Teichert facility in question is located at 40060 County Road 29, Davis, over four miles southeast of the project site. A review of reported documents indicate activities at the Teichert facility are unlikely to have impacted the project site.

4.3 INTERVIEWS

Because the site is surrounded by active and historic agricultural fields, CAInc contacted the Yolo County Department of Agriculture by telephone and by email on May 7, 2020, to inquire

[9] U.S. Army Corps of Engineers, 2018, Yolo County Airport, Formerly Used Defense Sites, Project Management Action Plan: 2018 Annual Report to Congress.
[10] http://geotracker.waterboards.ca.gov
[11] https://www.envirostor.dtsc.ca.gov/
[12] https://www2.calrecycle.ca.gov/SWFacilities/Directory/
[13] https://maps.conservation.ca.gov/doggr/wellfinder/
[14] Hasan, Moushumi, REHS, Supervising Hazardous Materials Specialist, Environmental Health Division, Yolo County Department of Community Services, May 8, 2020.

about pesticide application in the project vicinity. On May 8, 2020, Jack Dewit, Deputy Agricultural Commissioner, responded with pesticide use reports on adjacent properties for the most recent twelve months.

5 SITE RECONNAISSANCE

A reconnaissance of the project site was performed on April 3, 2020, by Mr. Steve Carter. The reconnaissance consisted of a walking and driving traverse along CR 96 in the vicinity of the existing bridge and the proposed location for the new bridge, and included visual observations of the roadway, properties adjacent the project site, and conditions on, under, and adjacent to the existing bridge. These observations were intended to identify the land uses and activities at the project site and on adjacent properties, and identify the presence, or likely presence, of hazardous substances or petroleum products at the project site and on adjacent properties. During site reconnaissance, the following conditions were noted:

Existing Bridge Location

- Two-lane (20-ft wide), single-span, concrete bridge, with concrete deck, abutments, wing walls, and guard rails.
- White paint on the guard rails was observed to be flaking and peeling.
- Approach roads on both sides of the bridge are unpaved.
- No approach guard rails or traffic striping were observed.
- Reflector signs mounted on metal posts were present at the right abutment on both approaches.
- Water was present in Union School Slough, generally flowing west to east. The slough flows parallel to CR 96 on both sides of the road south of the existing bridge.
- Vegetation adjacent to the slough, bridge, and approach roads appeared verdant and healthy.
- The northern slough bank adjacent to the bridge exhibited signs of recent garbage dumping and burning; however, containers suggesting hazardous materials were not observed.
- *De minimis* trash observed at other corners of bridge, including two tires and wire remains of a mattress; however, no indication of large-scale disposal of tires or other automotive waste.
- Rip-rap has been applied to the northern slough bank east of the bridge where the canal turns to the south.
- Properties adjacent to the slough and bridge are utilized for orchard.
- Overhead electrical wires terminate ±700 ft south of the bridge (discussed below). Overhead electrical wires also terminate ±1,700 ft north of the bridge; no transformers were observed at this location.
- Ground equipment was being used to spray the trees in the orchard east of the project site (APN 040-170-001).

Proposed New Bridge Location

- CR 96 at this location is unpaved.
- A culvert runs under CR 96 at this location. Concrete headwalls are present at both ends of the culvert.
- Overhead electrical lines run along the east side of CR 96, terminating ±30 ft north of the east-west portion of Union School Slough. Two electrical transformers are mounted on the treated wood terminal pole, and drop lines extent eastward from this pole to wells located in the southwest corner of APN 040-170-001 (east of the existing slough).

Transformers appear in good repair; no staining was observed on the equipment, pole, or surrounding ground surface.
- Vegetation at this location appeared seasonally healthy, and no unexplained areas of missing vegetation were observed.
- South of the Union School Slough, APN 040-180-013 and APN 040-170-003 were planted with field crops. North of the slough, APN 040-180-012 and 040-170-001 were planted as orchard.
- A natural gas pipeline runs east-west ±50 ft south of Union School Slough.

General Observations

During the reconnaissance CAInc did not observe evidence of:
- Aboveground irrigation manifolds or indications of agricultural chemical storage or mixing
- Aboveground or underground storage tanks
- Stockpiled soil
- Staining of the ground surface (except in burned area described above)
- Automotive batteries
- Medical or drug lab waste
- Mining activity
- Rock outcrops (except rip-rap described above)
- Serpentine, ultramafic rocks, or evidence of naturally-occurring asbestos
- Faulting, springs or seeps
- Ponds, lagoons, or standing water (except flowing water in canal)
- Drums or hazardous materials storage containers
- Unusual or suspicious odors
- Thermoplastic or painted traffic striping

Observations made during the site reconnaissance generally support the research and background data. Photographs from the site reconnaissance are provided in Appendix B.

6 ENVIRONMENTAL ANALYSIS

6.1 ASBESTOS CONTAINING CONSTRUCTION MATERIAL (ACCM)

CAInc contracted with National Analytical Laboratory, Inc. (NAL) to inspect the bridge for the presence of asbestos containing construction material (ACCM). This inspection was performed on April 16, 2020. A copy of the NAL report is included as Appendix F.

According to the NAL report, the asbestos inspection was performed by a certified asbestos consultant, in conformance with the Environmental Protection Agency's (EPA) Asbestos Containing Building Materials In-School Rule; CFR 763.85. Following the visual inspection, six bulk samples were collected from the bridge structure.

NAL reported that asbestos was not detected in any of the six samples analyzed. The bridge inspection and analytical results indicate that no asbestos is present in the area that is being removed. NAL's inspection did not include the culvert located ±750 ft south of the bridge, near the proposed replacement bridge site.

6.2 AERIALLY DEPOSITED LEAD (ADL)

Soil samples were collected on April 3, 2020 by CAInc. Soil samples were collected adjacent to each of the four corners of the existing bridge (ADL1 through ADL4) to assess if use of the bridge during the period of leaded gasoline use had impacted soil adjacent to the road with hazardous concentrations of ADL. Sample locations are presented on Figure 5 in Appendix A.

At each of the ADL sample locations, discrete samples were collected from 0 to 6 inches, 12 to 18 inches, and 24 to 30 inches bgs. A hand auger was used to advance a shallow boring at each sample location; samples from the selected intervals were collected from the hand auger. Soil from each sampled interval was homogenized in the field then placed into a plastic bag which was sealed with a plastic wire tie. The boreholes were backfilled with cuttings and adjacent native material after sampling at each location to return the excavation to approximately original grade.

To prevent incidental and cross contamination, all sampling equipment (hand auger and hand tools) was washed with a weak detergent bath and rinsed with clean, potable water before moving to a new sample location. Wash and rinse water from the cleaning process was disposed of at the site away from drainage inlets or known environmentally sensitive areas.

Following collection, each sample was labeled, and then transported under chain-of-custody (COC) documentation to BC Laboratories, Inc. (ELAP Certification #1186) for analysis. Prior to analysis, each of the ADL samples was again homogenized at the lab.

6.2.1 HAZARDOUS WASTE CLASSIFICATION CRITERIA

Regulatory criteria to classify a waste as “California hazardous” for handling and disposal purposes are contained in the California Code of regulations (CCR), Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as “Resource, Conservation and Recovery Act (RCRA) hazardous” are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), §261.

For a waste containing lead, the waste is classified as “California hazardous” when: (1) the total lead content exceeds 1,000 milligrams per kilogram (mg/kg), the Total Threshold Limit Concentration (TTLC); or (2) the soluble lead content exceeds 5.0 milligrams per liter (mg/l), the Soluble Threshold Limit Concentration (STLC) based on the Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste’s total lead content is greater than or equal to ten times the STLC value, since the WET uses a 1:10 dilution ratio. When the total lead concentration is greater than or equal to 50 mg/kg (ten times the STLC, and assuming that 100 percent of the total lead is soluble), soluble lead analysis is performed.

A material is classified as “RCRA hazardous” when the soluble lead content exceeds the Federal Regulatory Level based on the Toxicity Characteristic Leaching Procedure (TCLP). The TCLP value for lead is also 5.0 mg/l. The WET and TCLP methodologies are similar; the WET method uses a citric acid extractant applied for 48 hours, whereas the TCLP uses an acetic acid extractant applied for 18 hours.

The above regulatory criteria are based on toxicity. Wastes may also be classified as hazardous based on other criteria such as ignitability, corrosivity, and reactivity. For the purposes of ADL investigations, toxicity and corrosivity (e.g., chemical concentrations and soil pH values, respectively) are the primary factors considered for waste classification. Waste that is classified

as either "California hazardous" or "RCRA hazardous" requires management as a hazardous waste and disposal at an appropriately permitted disposal facility.

6.2.2 ANALYTICAL LABORATORY RESULTS

Analytical results for lead analyses are summarized below in Table 5. Laboratory reports and COC documentation are included in Appendix G. Refer to the laboratory reports for reporting limits and analytical methods.

Table 5. Summary of ADL Analytical Data

Sample Location	Sample Depth (in)	Total Lead (mg/kg)	pH
ADL1A	0 - 6	5.1	- - -
ADL1B	12 - 18	7.0	- - -
ADL1C	24 - 30	5.4	- - -
ADL2A	0 - 6	3.3	7.25
ADL2B	12 - 18	4.8	- - -
ADL2C	24 - 30	5.2	- - -
ADL3A	0 - 6	5.1	- - -
ADL3B	12 - 18	5.7	- - -
ADL3C	24 - 30	3.2	- - -
ADL4A	0 - 6	5.4	- - -
ADL4B	12 - 18	17	- - -
ADL4C	24 - 30	6.9	- - -
Hazardous limits		1,000	≤2 or ≥12.5

mg/kg = milligrams per kilogram - - - = Sample not analyzed

Total lead concentrations in all soil samples ranged from 3.2 to 17 mg/kg, below the 50 mg/kg threshold requiring additional analysis.

6.3 LEAD-BASED PAINT

White paint on the bridge guard rails was observed to be flaking and peeling. A paint sample (Paint-1) was collected by CAInc on April 3, 2020 from the guard rail at the northeast corner of the bridge to assess the lead content in the paint. Flaking paint was collected using a stainless-steel putty knife. The paint flakes were placed in a new resealable plastic bag, labeled, and transported under chain of custody documentation to BCL. The sample was prepared and analyzed for lead in accordance with EPA Methods 3050B and 6010B.

A total lead concentration of 3,800 mg/kg was reported for sample Paint-1. This concentration exceeds the 1,000 mg/kg hazardous waste threshold; further analysis of this paint sample is not required.

7 FINDINGS

The purpose of this report is to identify recognized soil or groundwater contamination or hazardous material issues that could impact the project. The assessment identified the following potential hazardous materials issues that should be considered in the planning of project improvements.

7.1 POTENTIAL HAZARDOUS MATERIALS SITES

Based on the records search and site reconnaissance described above, CAInc makes the following observations.

- The project site was not identified in the database records reviewed.
- The database records, aerial photographs, and historical topographic maps search did not identify any RECs or historical RECs that have potentially impacted the project site.
- Reconnaissance did not identify any other suspect sites in the project site vicinity.

7.2 GENERAL HAZARDOUS MATERIALS ISSUES

7.2.1 ASBESTOS CONTAINING CONSTRUCTION MATERIAL (ACCM)

There is a potential for asbestos to be present in concrete used for transportation structures (bridge piers, footings, abutments, decks, sidewalks). ACCM, as defined in the California Code of Regulations, Title 8, Section 1529 of the Construction Safety Orders, may also be present in construction materials such as bridge joint seals, bearing pads, shims, deck drains or other less obvious materials such as pipe conduits for utilities.

Under the federal asbestos National Emissions Standards for Hazardous Air Pollutants regulations (NESHAP, 40 CFR Part 61, Subpart M), a Certified Asbestos Consultant (CAC) must make definitive conclusions regarding the presence of ACCM. Prior to demolition or reconstruction, existing structures are required to have an asbestos survey completed to determine the appropriate method of handling and disposal of demolition debris. Written notification to the Air Quality Management District of demolition or renovation operations on structures is required at least 10 business days prior to conducting the work, regardless of the presence or absence of asbestos in the bridge materials.

NAL did not identify asbestos or ACCM in the existing bridge. However, NAL did not evaluate the concrete culvert at the location of the proposed new bridge. This culvert should be inspected for the presence of asbestos prior to demolition and removal. Alternatively, the contractor can assume asbestos is present and handle the material accordingly.

7.2.2 LEAD-BASED PAINT

Transportation structures are often painted, and this paint has the potential to contain lead at concentrations that may require abatement or special handling. Painted surfaces exhibiting flaking, peeling, or paint dust must be evaluated for the presence of lead paint. If lead is identified at concentrations above threshold limits, painted surfaces must be disposed of in accordance with Caltrans 2018 Standard Specification (SS) 14-11.13, Disturbance of Existing Paint Systems on Bridges, and Caltrans 2018 Standard Special Provision (SSP) 14-11.13. The presence, or likely presence, of lead in the project site requires preparation of a Lead Compliance Plan (Caltrans 2018 SS 7-1.02K(6)(j)(ii), Lead Compliance Plan, and Caltrans 2018 SSP 7-1.02K(6)(j)(iii)), and a Health & Safety Plan for workers in accordance with Cal OSHA Title 8, Section 1532.1.

CAInc collected a sample of the flaking and peeling white paint on the concrete guard railing. Lead was reported in this sample (Paint-1) at a concentration of 3,800 mg/kg, above the hazardous waste threshold of 1,000 mg/kg. No further analysis of the paint sample is required. Caltrans 2018 Standard SS 14-11.13, Disturbance of Existing Paint Systems on Bridges, and Caltrans 2018 SSP 14-11.13 will apply to demolition of this bridge. Demolition of materials

containing lead-based paint will need to adhere to the requirements described above. All paint on the existing bridge is assumed to contain lead above the hazardous waste threshold and should be handled accordingly.

7.2.3 AERIALLY DEPOSITED LEAD (ADL)

Generally, ADL may be an issue on roads which have historically experienced significant traffic volume, particularly where vehicles would be stopping and idling, i.e., at a stop sign or a high congestion area. Leaded gasoline was used from the 1920s through the 1980s. ADL is also a concern in areas adjacent to structures where paint containing lead was used.

Soil samples from the vicinity of the existing bridge were evaluated for total lead. Concentrations in these samples ranged from 3.2 to 17 mg/kg, below the hazardous waste threshold. Further analysis of the soil at the existing bridge site does not appear warranted. Soil excavated at the site may be reused at the site without restriction. Additional sampling and analysis may be required for off-site disposal. Handling of soils containing lead, even at non-hazardous concentrations, must be included in the lead management plan.

Further analysis of the soil at the proposed bridge also does not appear warranted. The existing and proposed bridge sites are only 700 feet apart, and there are no ingress or egress points for normal civilian traffic likely to be powered by gasoline between the two locations. CAInc assumes that lead levels will be similar at both bridge locations.

7.2.4 AGRICULTURAL CHEMICALS

The earliest known pesticides were based on naturally occurring chemicals. Those that persisted in the environment contained metals, such as lead arsenate commonly used in orchards from the 1800s until the 1940s. The second generation of pesticides was introduced during World Wars I and II, originating from chemicals and technologies developed for warfare and later applied to farms. This generation of pesticides largely included synthetic carbon-based (organic) compounds, and included organochlorines and organophosphates. The first important organochlorine pesticide (OCP) was DDT, discovered in 1939, and subsequently found to persist in the environment for decades. DDT was banned for agricultural purposes in 1974, and the elimination of the remaining persistent OCPs soon followed. Agricultural pesticides used today have shorter half-lives than their predecessors. Pesticide residue is most commonly found in areas of chemical storage, mixing and disposal, and where pesticide application equipment was cleaned. Pesticides may also accumulate in surface water features such as drainage ditches and swales.[15,16]

Based on aerial photographs dating back to 1937, properties adjacent to the project site have been utilized for agriculture at least since that time. Surrounding properties continue to be actively farmed. CAInc observed equipment spraying of trees in the orchard east of the project site during site reconnaissance (APN 040-170-001), but did not identify any irrigation manifolds, chemical mixing areas, or chemical storage areas on properties adjacent to the project site. It is possible that chemical applications could have resulted in overspray that affected the project

[15] *Interim Guidance for Sampling Agricultural Properties (Third Revision)*, California Department of Toxic Substances Control, California Environmental Protection Agency, August 7, 2008.
[16] *Guidance for Evaluating Residual Pesticides on Lands Formerly Used for Agricultural Production*, Oregon Department of Environmental Quality, January 2006 (updated June 2019).

site. Project activities will disturb the Union School Slough, where pesticides may have accumulated.

CAInc contacted the Yolo County Agricultural Commissioner's office on May 7, 2020 to request pesticide use reports for adjacent properties. Eight different pesticides were reportedly applied over a one-year period between May 8, 2019 and May 8, 2020.[17] California began requiring full reporting of agricultural pesticide use in 1990,[18] however early reporting was minimal and incomplete[17]. Likely pesticide application areas immediately abut the project site, and there is a potential for historical overspray onto the project site. CAInc recommends testing site soils for the following classes of biocides: organochlorine pesticides (EPA Method 8081), chlorinated herbicides (EPA Method 8151) and organophosphorus pesticides (EPA Method 8141). Testing should be performed prior to construction to include the most recent pesticide applications.

7.2.5 CHEMICALLY TREATED WOOD

Chemically treated wood must be handled as treated wood waste (TWW) and disposed of as hazardous waste. Section 66261.9.5 of DTSC regulations provide alternative management standards (AMS) for treated wood waste. SSP 14-11.14 for TWW is based on AMS regulations. This special standard provision directs the contractor to follow the AMS, including providing training to all personnel that may come in contact with TWW. Training must include, at a minimum, safe handling; sorting and segregating; storage; labeling (including date); and proper disposal methods.

Chemically treated wood is present in two utility poles identified for potential removal on the Geometric Approval Drawing dated January 4, 2019. The poles are located on the east side of CR 96 in the vicinity of the replacement bridge. Relocation of treated wood utility poles is generally the responsibility of the utility owner.

7.2.6 NATURALLY OCCURRING ASBESTOS (NOA)

The geologic mapping reviewed as part of this study does not indicate ultramafic rocks or rocks suspected to contain NOA are present within the study area. CAInc did not observe rock outcrops or rock fragments that are suspected to contain NOA during site reconnaissance. Although NOA can be associated with faults, no mapped faults are depicted within the study area. The potential for NOA in the study area is considered low and no further study with respect to NOA is warranted.

7.2.7 PETROLEUM HYDROCARBONS

No evidence of petroleum hydrocarbons storage or impact was observed at the project site during the site reconnaissance. Further evaluation of petroleum hydrocarbons is not warranted.

7.2.8 THERMOPLASTIC TRAFFIC STRIPING

Thermoplastic traffic striping may contain heavy metals, including lead and chromium, at concentrations in excess of the hazardous waste thresholds established by the California Code of Regulations, and may produce toxic fumes when heated. Consequently, the traffic striping within the project area should be tested to determine whether hazardous concentrations of heavy metals are present. Alternatively, if the volume of striping material to be removed by grinding or planing is anticipated to be small, it could be assumed to be hazardous waste and

[17] Dewit, Jack, Deputy Agricultural Commissioner and Sealer, Yolo County Agricultural Commissioner, May 8, 2020.
[18] http://www.cdpr.ca.gov/docs/pur/purmain.htm

disposed of accordingly, at a Class 1 disposal facility. If painted paving material is removed and recycled, testing for heavy metals would not be required.

Thermoplastic or painted traffic striping was not observed on the bridge or approaches.

7.2.9 TRANSFORMERS

Polychlorinated biphenyls (PCBs) were used as transformer oil in the United States until 1979 when manufacturing was banned due to concerns about the toxicity of PCBs. Although no longer commercially produced domestically, PCBs may be present in products and materials, including electrical transformers, produced prior to 1979.

Two pole-mounted transformers were observed on a utility pole located ±700 ft south of the bridge. According to the Geometric Approval Drawing dated January 4, 2019, the pole is proposed for removal. As discussed in Section 5.0, evidence of impact from leaking transformers was not observed during site reconnaissance. Identification and remediation of old transformers is the responsibility of the utility owner.

7.2.10 UNKNOWN HAZARDOUS CONDITIONS

In case unknown hazardous conditions are encountered during construction activities, the Caltrans Unknown Hazards Procedure provided in Appendix H should be followed.

7.3 SUMMARY OF FINDINGS

Based on the site reconnaissance conducted, and a review of available public records, historical aerial photographs, and historical topographic maps, the following REC was identified at or adjacent to the project site:

- Hazardous concentrations of lead in flaking and peeling paint on the bridge.

Collection and analysis of soil samples from the project site will determine whether pesticides have impacted the site. In addition, ACCM in the culvert structure near the proposed bridge location has not been evaluated; therefore it is unknown whether ACCM exists at the proposed bridge location.

8 RECOMMENDATIONS

Based on the public records, historical aerial photographs, and historical topographic maps reviewed for this project, and the site reconnaissance performed on April 3, 2020, CAInc makes the following recommendations:

- Soil samples should be collected and analyzed prior to construction to evaluate residual concentrations of agricultural chemicals.
- Prior to demolition, the concrete culvert located ±750 ft south of the bridge, where the proposed bridge would be constructed, should be tested for asbestos. Alternatively, assume the culvert contains asbestos, and handle and properly dispose of the material.
- Lead-based paint was identified on the existing bridge. A lead compliance plan that protects workers and the environment from lead exposure will need to be prepared prior to implementation of demolition and construction activities within the project site. Painted bridge components will need to be removed, transported, and recycled or disposed of in a manner consistent with the lead compliance plan and applicable State and Federal law.

9 LIMITATIONS

This report summarizes the findings and opinions of CAInc, with regard to the potential for the presence of contamination/hazardous materials within the project area at concentrations likely to warrant mitigation under current statutes and guidelines. Findings and opinions within this report are based on information obtained on given dates, or provided by specified individuals, through record reviews, site review, and related activities. CAInc's information is only as good as the information provided by these sources. Site conditions may change after documented observations have been made. A warrant or guarantee cannot be made that hazardous materials do not exist at the site. To further help reduce risk, an extensive invasive exploration could be completed prior to project implementation.

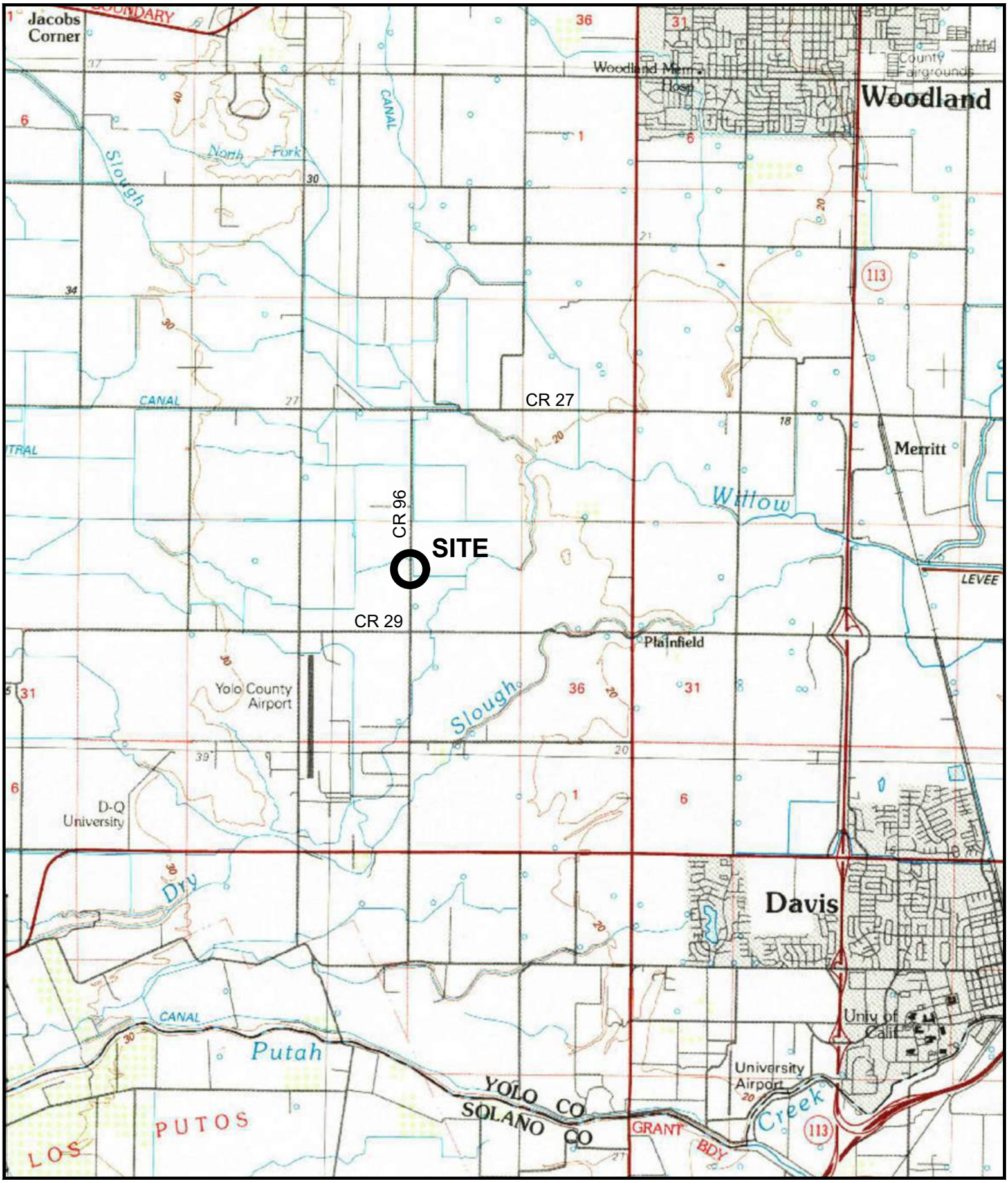
This report was prepared for the specific use of Mark Thomas and their agents for this project and applies only to the area identified as the project site. CAInc is not responsible for interpretations by others of data presented in this report. This report does not represent a legal opinion. No warranty is expressed or implied. Conclusions in this report are based on professional judgment and experience. Work for this assessment was performed in accordance with generally accepted standards of practice in northern California at the time of the assessment.

The scope of this investigation did not include determining the presence of radon. Identifying endangered species, geologic hazards, archeological sites, or ecologically sensitive areas are also beyond the scope of this report.

The governmental records summary within this report is derived from public records, which are updated on a continual basis. For this reason, it is not advisable to use this information to base a decision after 180 days of the issue date of this report. Conditions at the site can and will change over time. Please contact CAInc to revise this report to reflect new information.

APPENDIX A

Figure 1. Vicinity Map
Figure 2. Project Site Map
Figure 3. Geology Map
Figure 4. Fault Map
Figure 5. Sample Location Map



North

Source: Sacramento, California. 19994 Edition. 1:100,000. USGS, 1994.

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Taber Since 1954
1100 Corporate Way
Suite 230
Sacramento, CA 95831
(916) 455-4225

CR 96 OVER UNION SCHOOL SLOUGH

YOLO COUNTY, CA

Figure 1
Vicinity Map

Proj. No:	18-474.1
Scale:	1"=6,000'
Date:	2/20/19

YOLO COUNTY BRIDGE REPLACEMENT PROJECT
COUNTY ROAD 96 OVER UNION SCHOOL SLOUGH REALIGNED
GEOMETRIC APPROVAL DRAWING

COUNTY OF YOLO

MARK THOMAS
701 UNIVERSITY AVENUE
SUITE 200
SACRAMENTO, CA 95825

DRAWN BY CK	APPROVED ON	JOB NO. SA-18139	SHEET 1
CKD. BY MM	BY	FILE NO.	OF
DATE 01/04/2019	RCE NO.	FILE NAME	1
SCALE 1"=40'			

LEGEND

PROPOSED GRAVEL DRIVEWAY CONFORMS

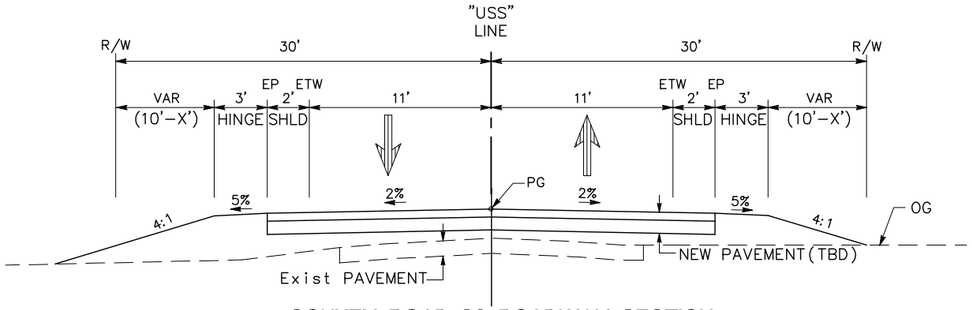
CATCHPOINT AT SLOPE 2:1

CATCHPOINT AT SLOPE 4:1

DESIGN CRITERIA:

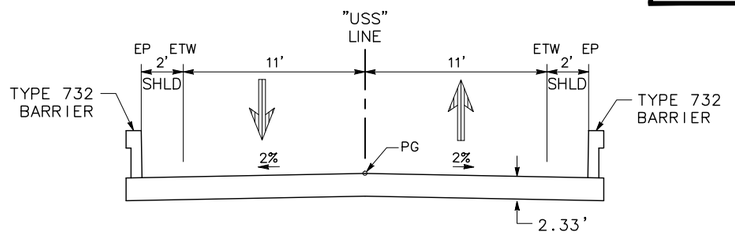
DESIGN SPEED: COUNTY ROAD 96 = 50 MPH

ADT: COUNTY ROAD 96 = 262 VEH/DAY



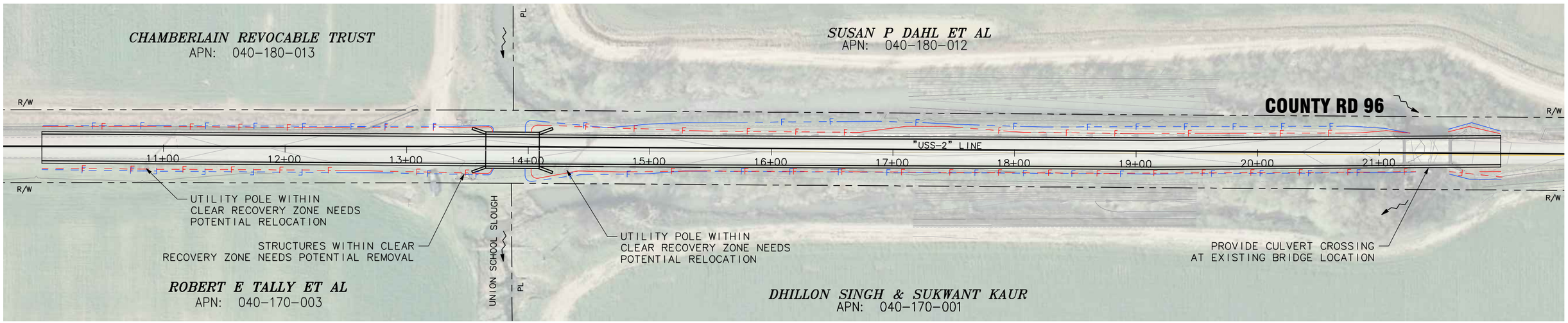
COUNTY ROAD 96 ROADWAY SECTION

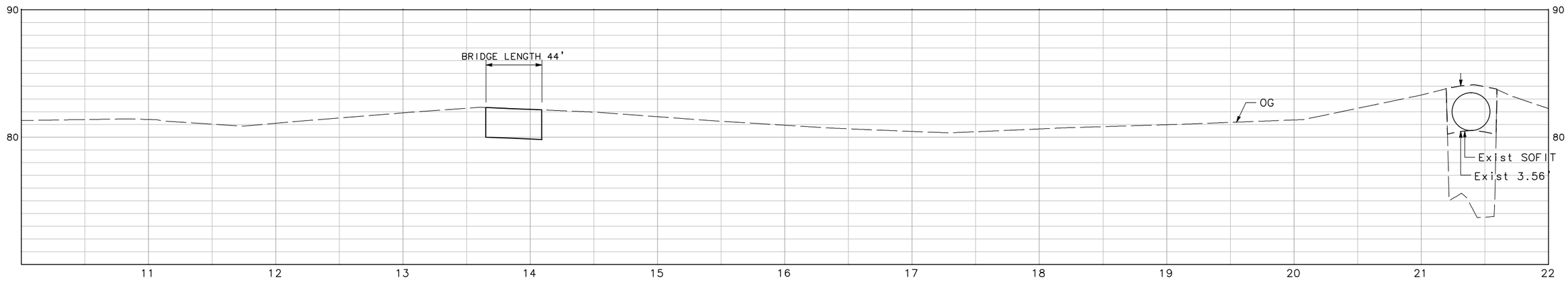
NO SCALE



COUNTY ROAD 96 BRIDGE SECTION

NO SCALE

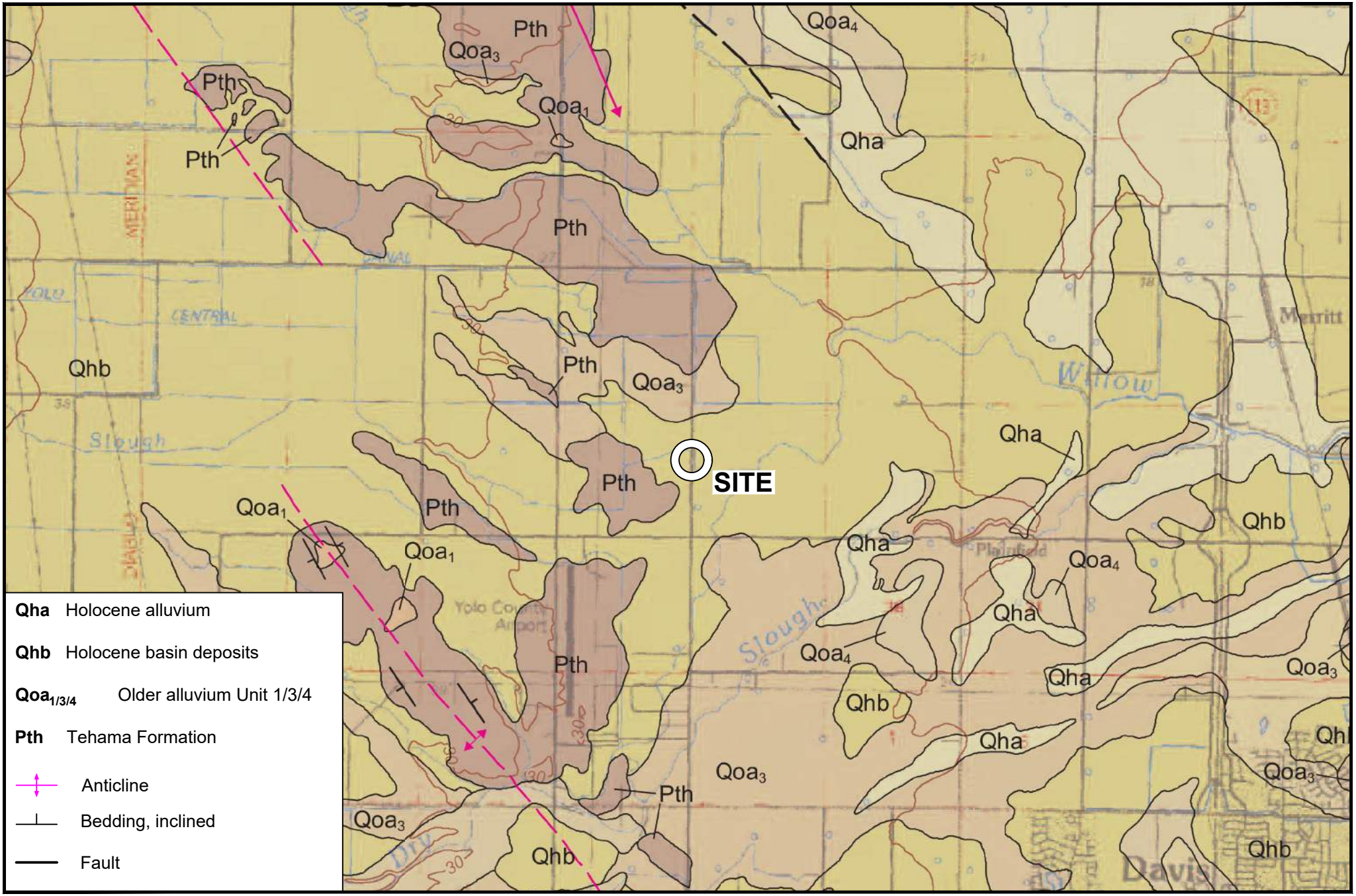




COUNTY ROAD 96 BRIDGE - PROFILE

SCALE: H: 1"=40'
V: 1"=10'

Figure 2. Project Site Map



North

Source: Carlos I. Gutierrez. Preliminary Geologic Map of the Sacramento 30' x 60' Quadrangle, California. 1:100,000. California: California Geologic Survey, 2011.

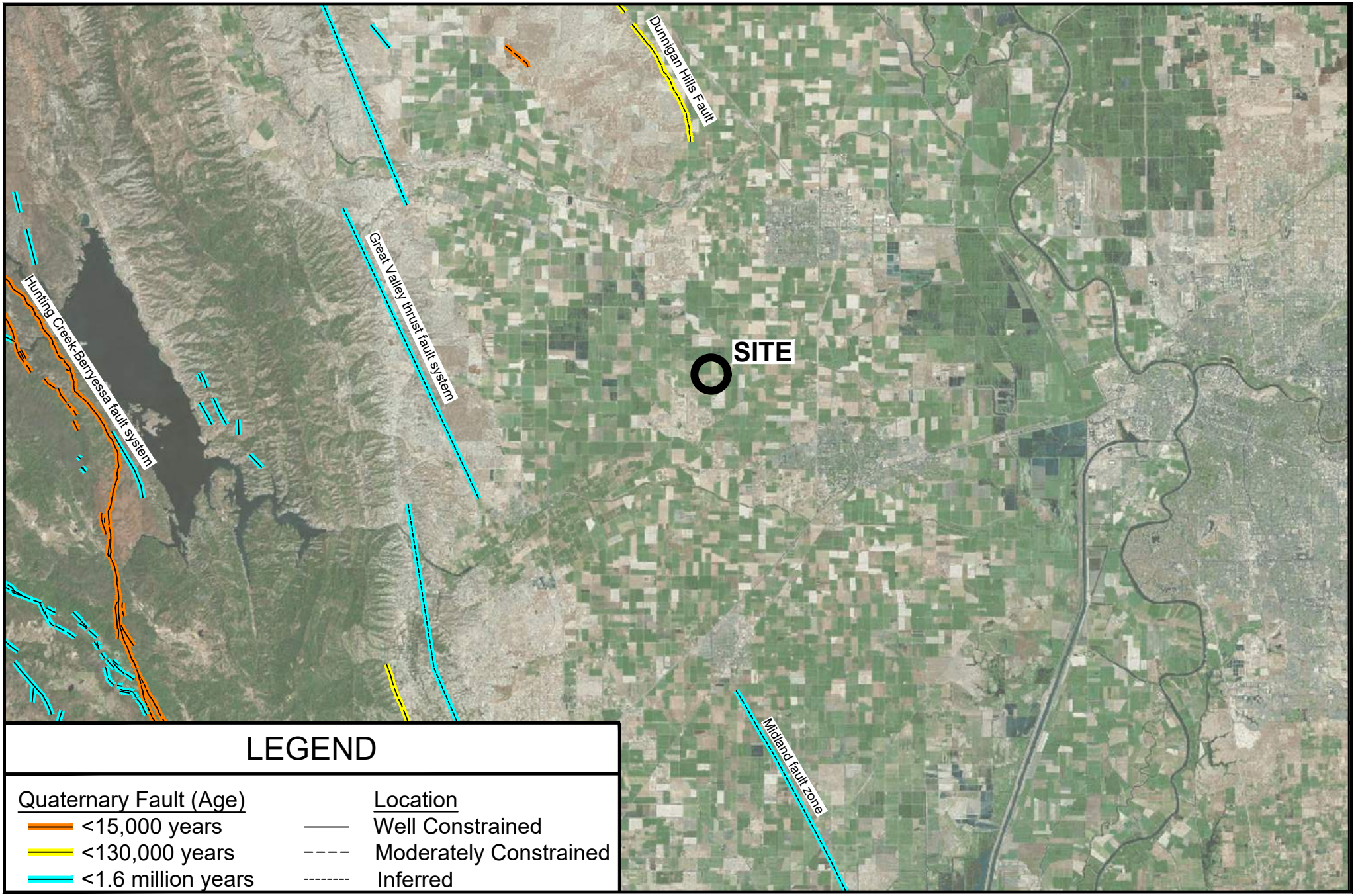
Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Taber Since 1964
1100 Corporate Way
Suite 230
Sacramento, CA 95831
(916) 455-4225

CR 96 OVER UNION SCHOOL SLOUGH

YOLO COUNTY, CA

Figure 3
Geology Map

Proj. No:	18-474.1
Scale:	1"=5,000'
Date:	9/10/19



North

Sources:
Bassemap: AutoCAD Civil3D Geolocation tool, using Bing Maps

Faut data: USGS GIS data

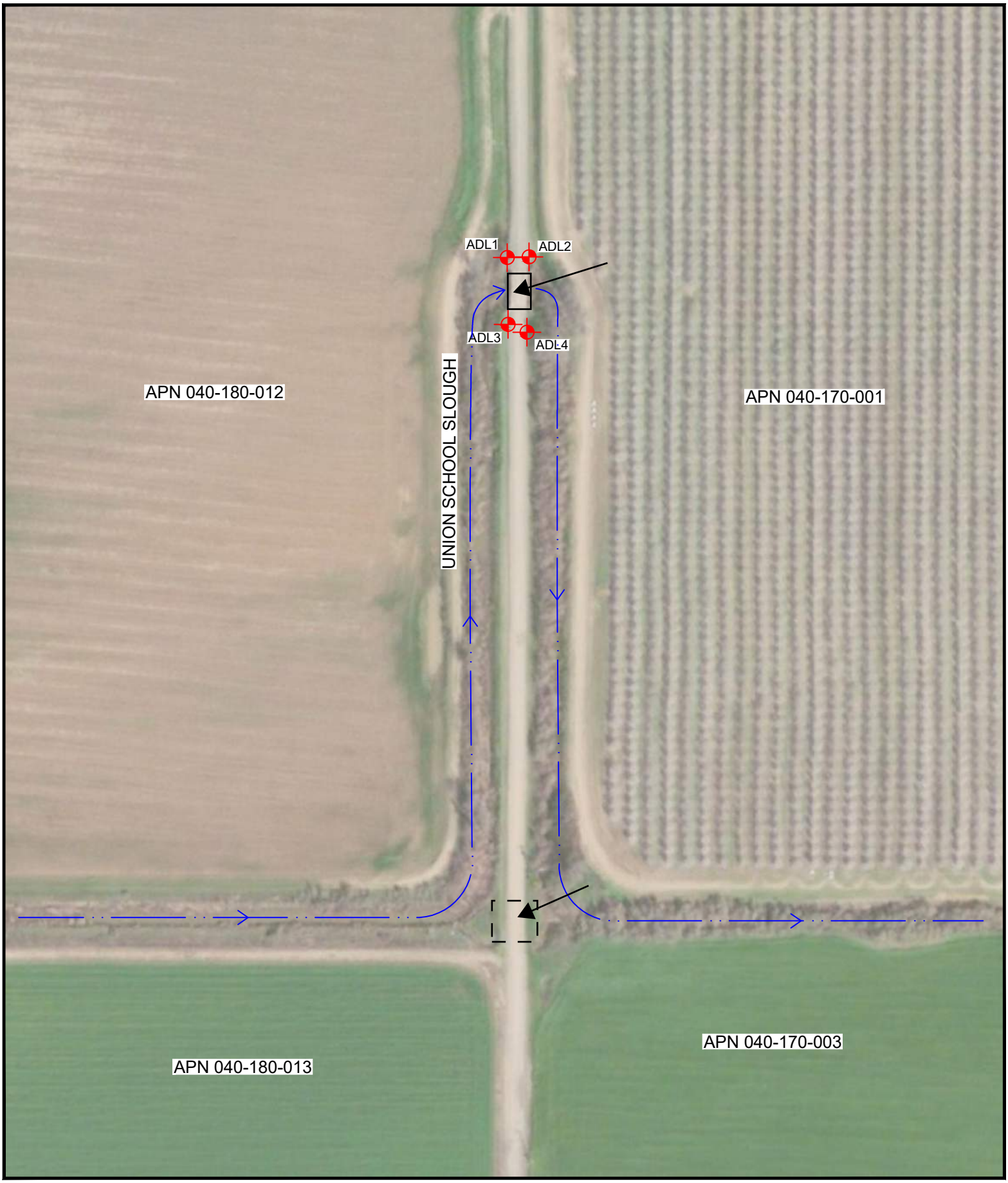
Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Taber Since 1954
1100 Corporate Way
Suite 230
Sacramento, CA 95831
(916) 455-4225

CR 96 OVER UNION SCHOOL SLOUGH

YOLO COUNTY, CA

Figure 4
Fault Activity Map

Proj. No:	18-474.1
Scale:	1"=25,000'
Date:	2/20/19



North

Map Source:
AutoCAD Civil3D Geolocation Tool, using Bing Maps

Crawford & Associates, Inc.
Geotechnical Engineering, Design and Construction Services
Taber Since 1954
1100 Corporate Way
Suite 230
Sacramento, CA 95831
(916) 455-4225

CR 96 OVER UNION SCHOOL SLOUGH

YOLO COUNTY, CA

Figure 5
Sample Location Map

Proj. No:	18-474.1
Scale:	1"=30'
Date:	5/18/20

APPENDIX B

Site Photographs



Photo 1. View toward the south. Riparian vegetation along existing slough channel on both sides of the road visible in background.



Photo 2. View toward the north. APN 040-180-012 visible in background on the left, APN 040-170-001 visible in background on the right.



Photo 3. Flaking and peeling paint at northeast corner.



Photo 4. Viewed toward the west.



Photo 5. View to the northeast, showing burned area. APN 040-170-001 in background.



Photo 6. View to the northeast. APN 040-170-001 in background.



Photo 7. Natural gas line marker at proposed new bridge location. APN-170-003 in the background.

APPENDIX C

GeoSearch Historical Aerial Photographs

Order Number: 144396
Date: April 3, 2020

GeoSearch
On time. On target. In touch.™

Historical Aerial Photographs

***NEW:** GeoLens by Geosearch*

Target Property:

CR 96 over Union School Slough

Yolo County, California

Prepared For:

Crawford & Associates

Order #: 144396
Job #: 346841
Project #: 18-474.1
Date: 4/3/2020

Target Property Summary

CR 96 over Union School Slough

Yolo County, California

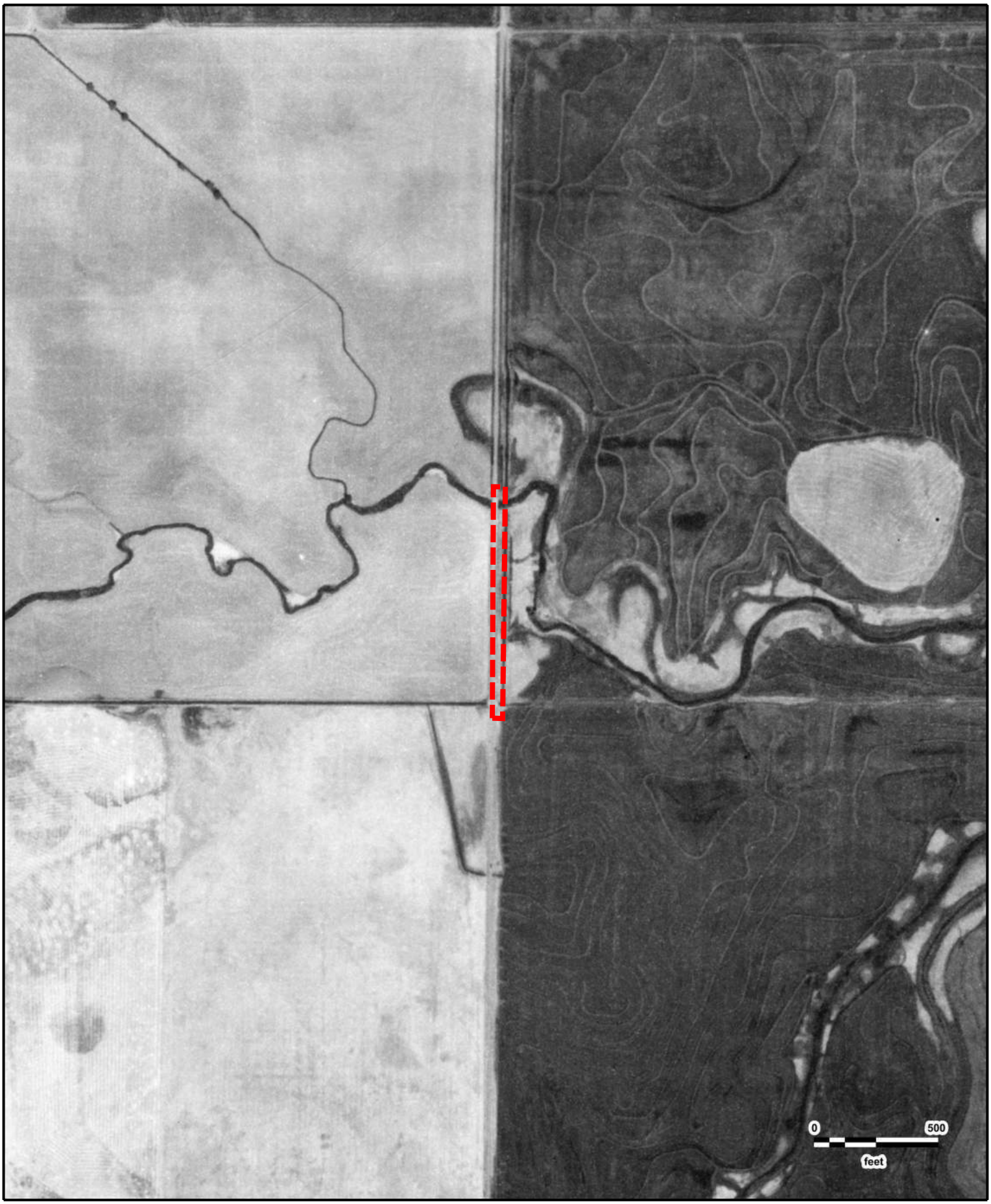
USGS Quadrangle: ***Merritt***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-121.840193000, 38.597652000), (-121.840049000, 38.597650000), (-121.840008000, 38.600199000), (-121.840179000, 38.600200000)

Aerial Research Summary

Date	Source	Scale	Frame
2016	USDA	1" = 500'	N/A
2014	USDA	1" = 500'	N/A
2012	USDA	1" = 500'	N/A
2010	USDA	1" = 500'	N/A
2009	USDA	1" = 500'	N/A
2006	USDA	1" = 500'	N/A
2005	USDA	1" = 500'	N/A
2004	USDA	1" = 500'	N/A
2003	USDA	1" = 500'	N/A
06/12/1993	USGS	1" = 500'	N/A
06/08/1984	USGS	1" = 700'	127-17
07/11/1974	USGS	1" = 500'	11-47
05/28/1968	USGS	1" = 500'	6-89
06/18/1964	ASCS	1" = 1320'	PI-6
08/01/1957	ASCS	1" = 500'	47-8
08/03/1954	AMS	1" = 500'	1979
08/28/1937	ASCS	1" = 500'	61-84

Disclaimer - The information provided in this report was obtained from a variety of public sources. GeoSearch cannot ensure and makes no warranty or representation as to the accuracy, reliability, quality, errors occurring from data conversion or the customer's interpretation of this report. This report was made by GeoSearch for exclusive use by its clients only. Therefore, this report may not contain sufficient information for other purposes or parties. GeoSearch and its partners, employees, officers and independent contractors cannot be held liable for actual, incidental, consequential, special or exemplary damages suffered by a customer resulting directly or indirectly from any information provided by GeoSearch.



N
W E
S

CR 96 over Union School Slough
ASCS
08/28/1937

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
AMS
08/03/1954

GeoSearch

JOB #: 346841 - 04/03/2020

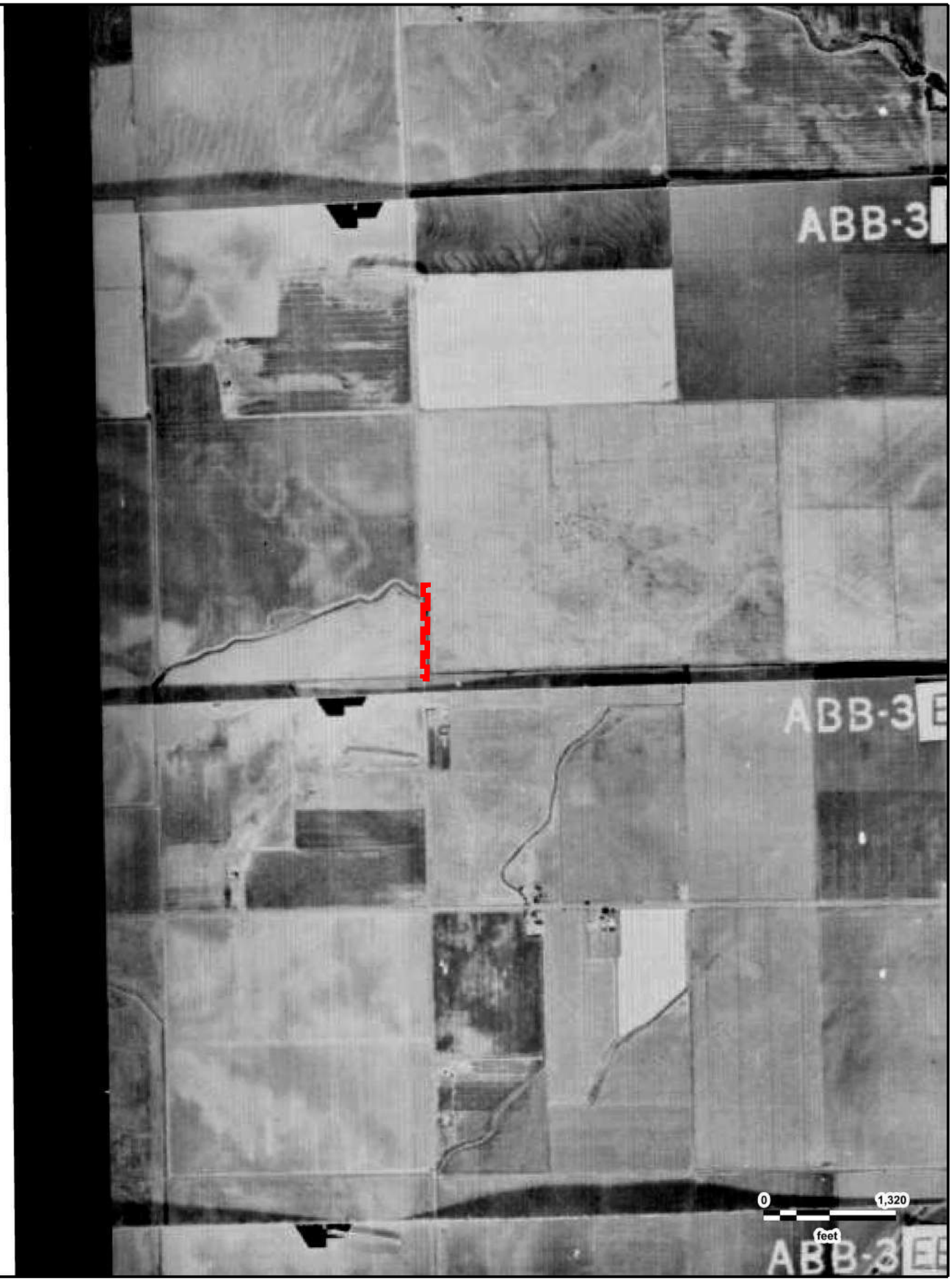


N
W E
S

CR 96 over Union School Slough
ASCS
08/01/1957

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
ASCS
06/18/1964

GeoSearch

JOB #: 346841 - 04/03/2020

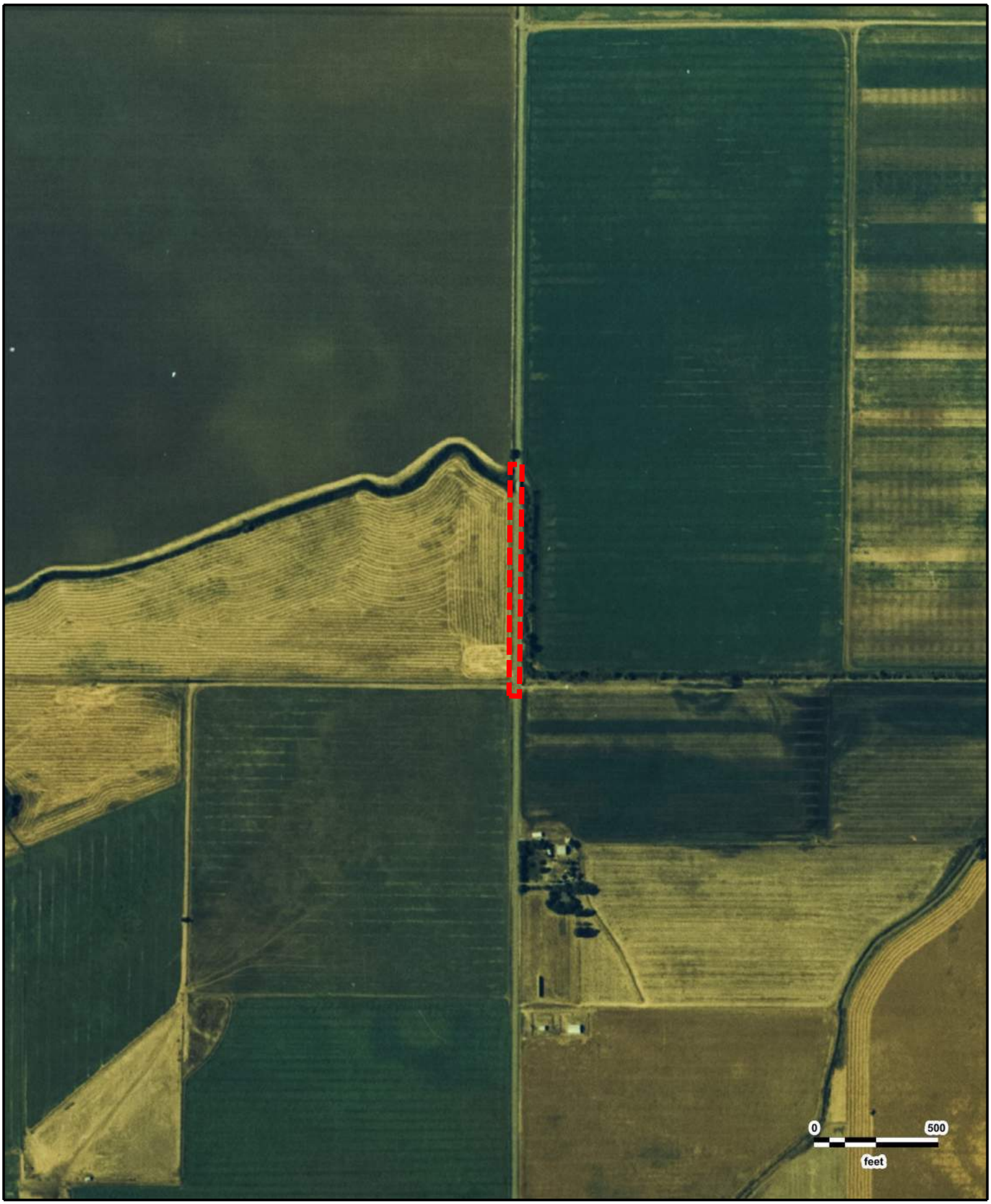


N
W E
S

CR 96 over Union School Slough
USGS
05/28/1968

GeoSearch

JOB #: 346841 - 04/03/2020

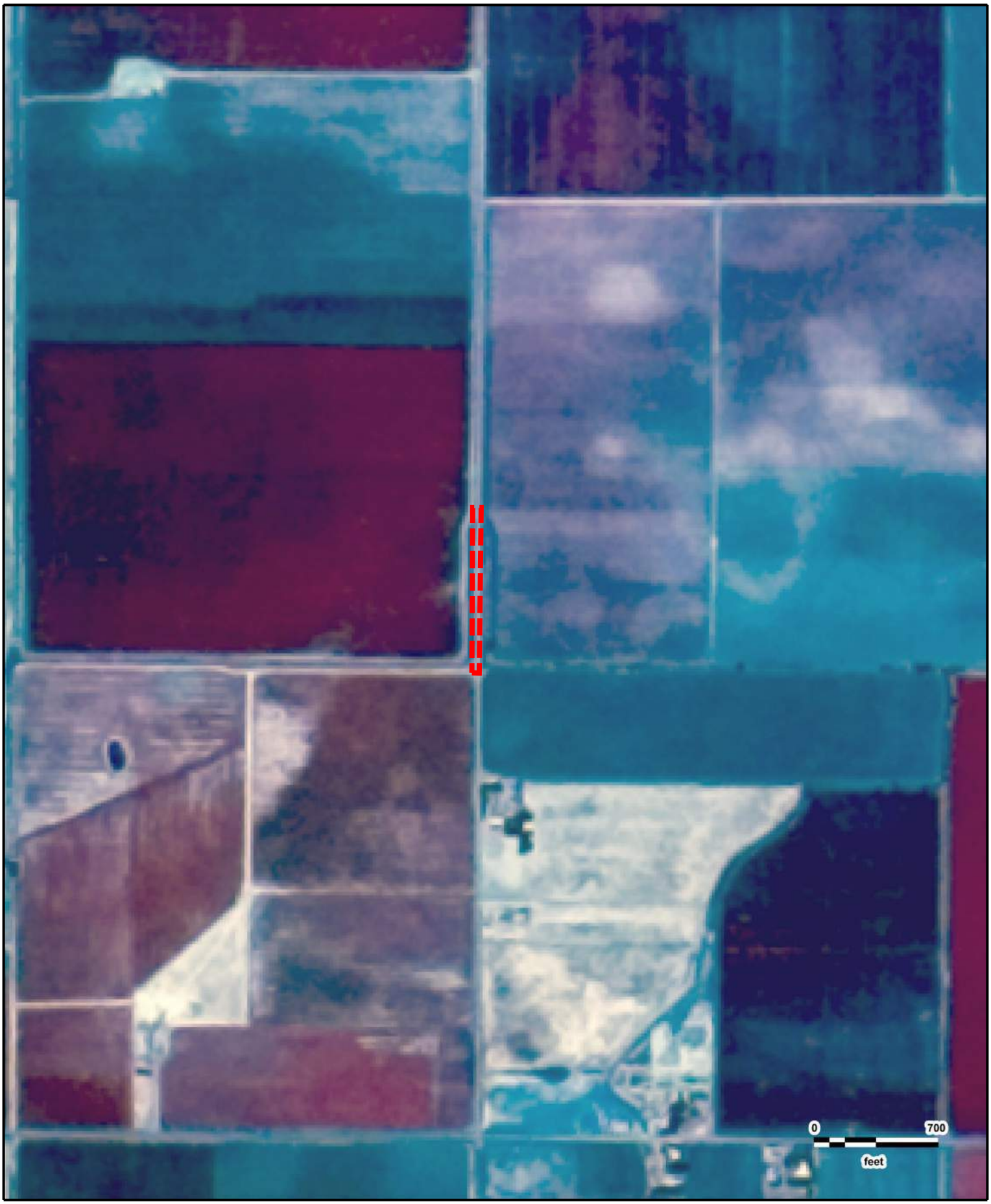


N
W E
S

CR 96 over Union School Slough
USGS
07/11/1974

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
USGS
06/08/1984

GeoSearch

JOB #: 346841 - 04/03/2020

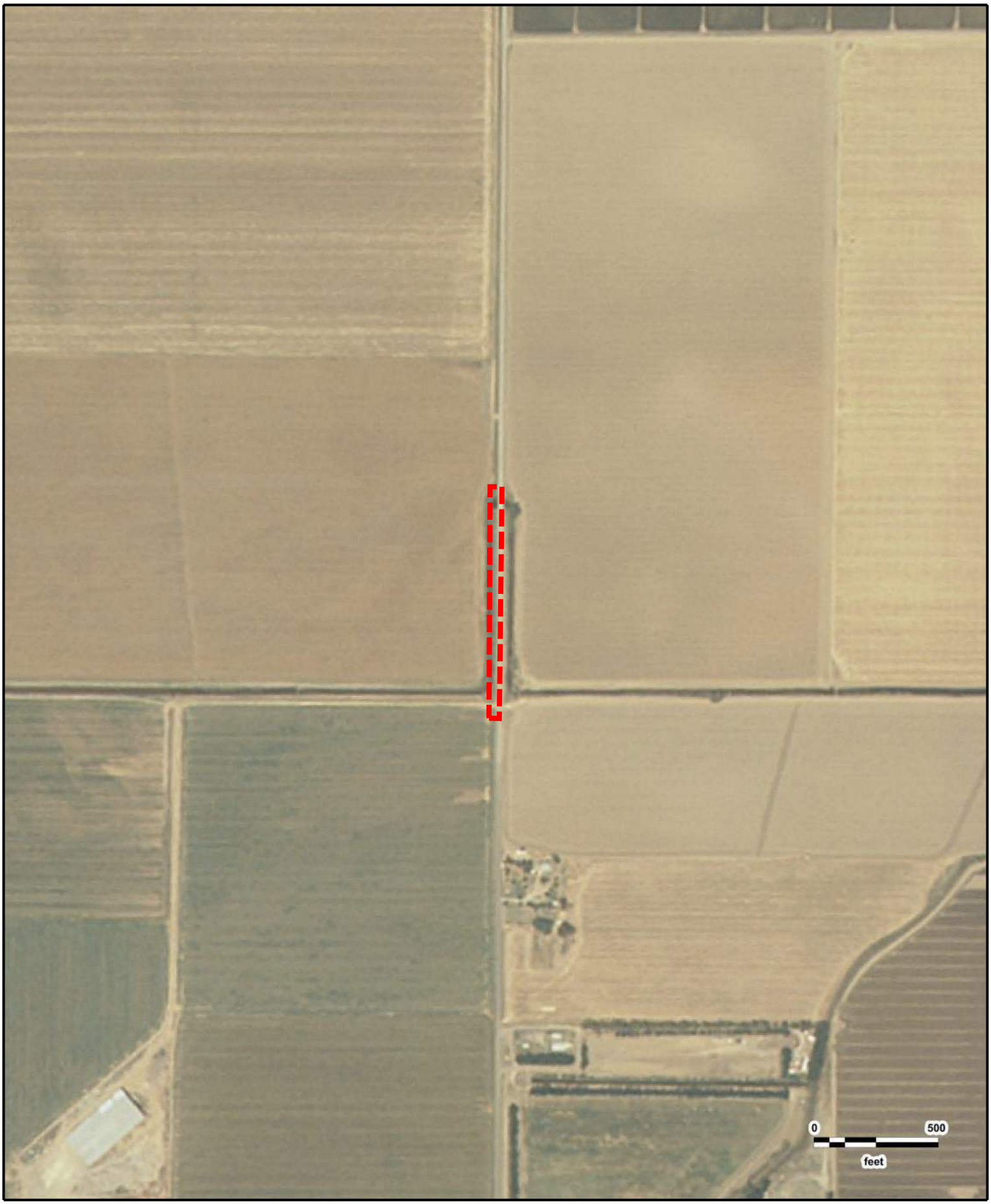


N
W E
S

CR 96 over Union School Slough
USGS
06/12/1993

GeoSearch

JOB #: 346841 - 04/03/2020

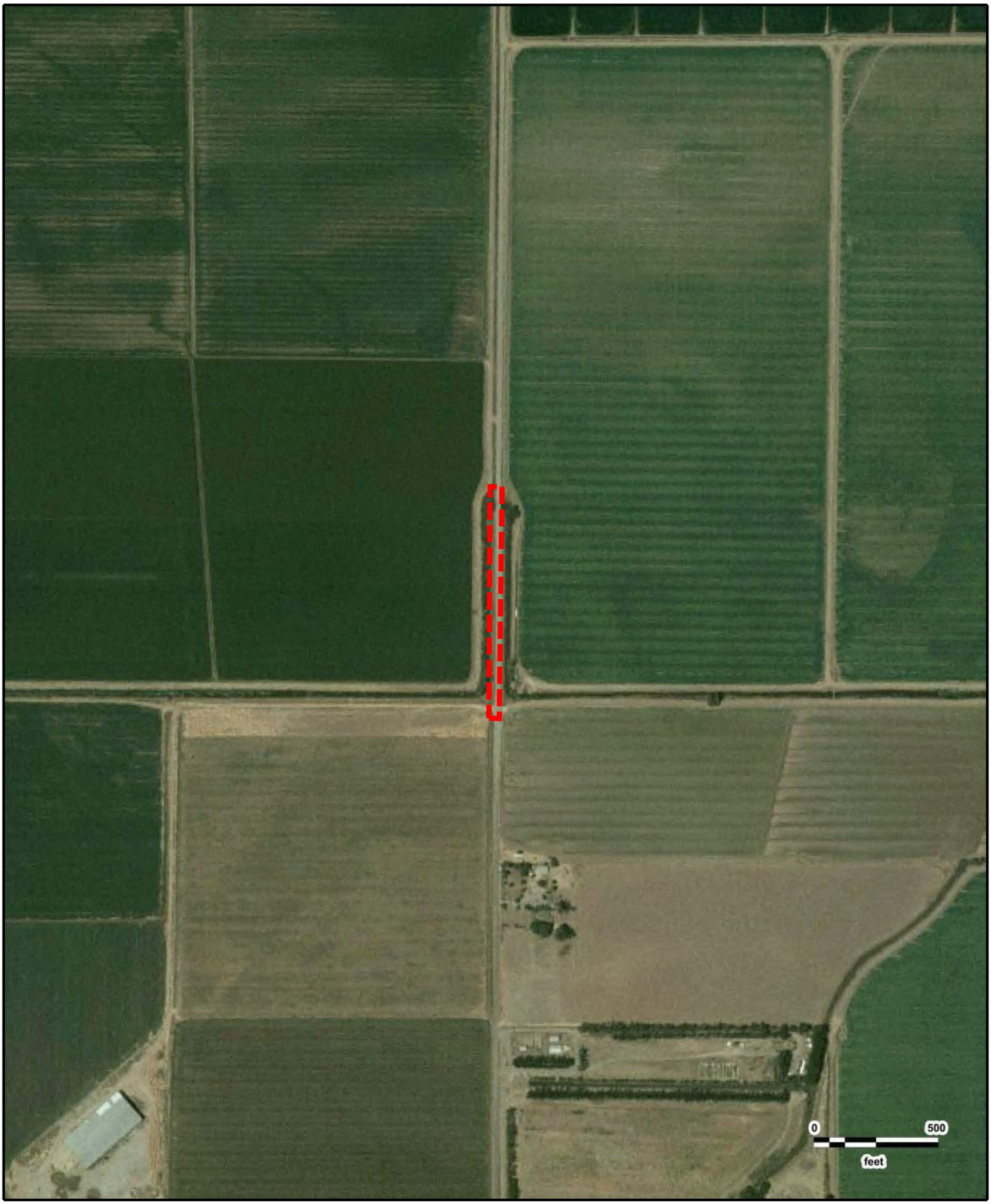


N
W E
S

CR 96 over Union School Slough
USDA
2003

GeoSearch

JOB #: 346841 - 04/03/2020

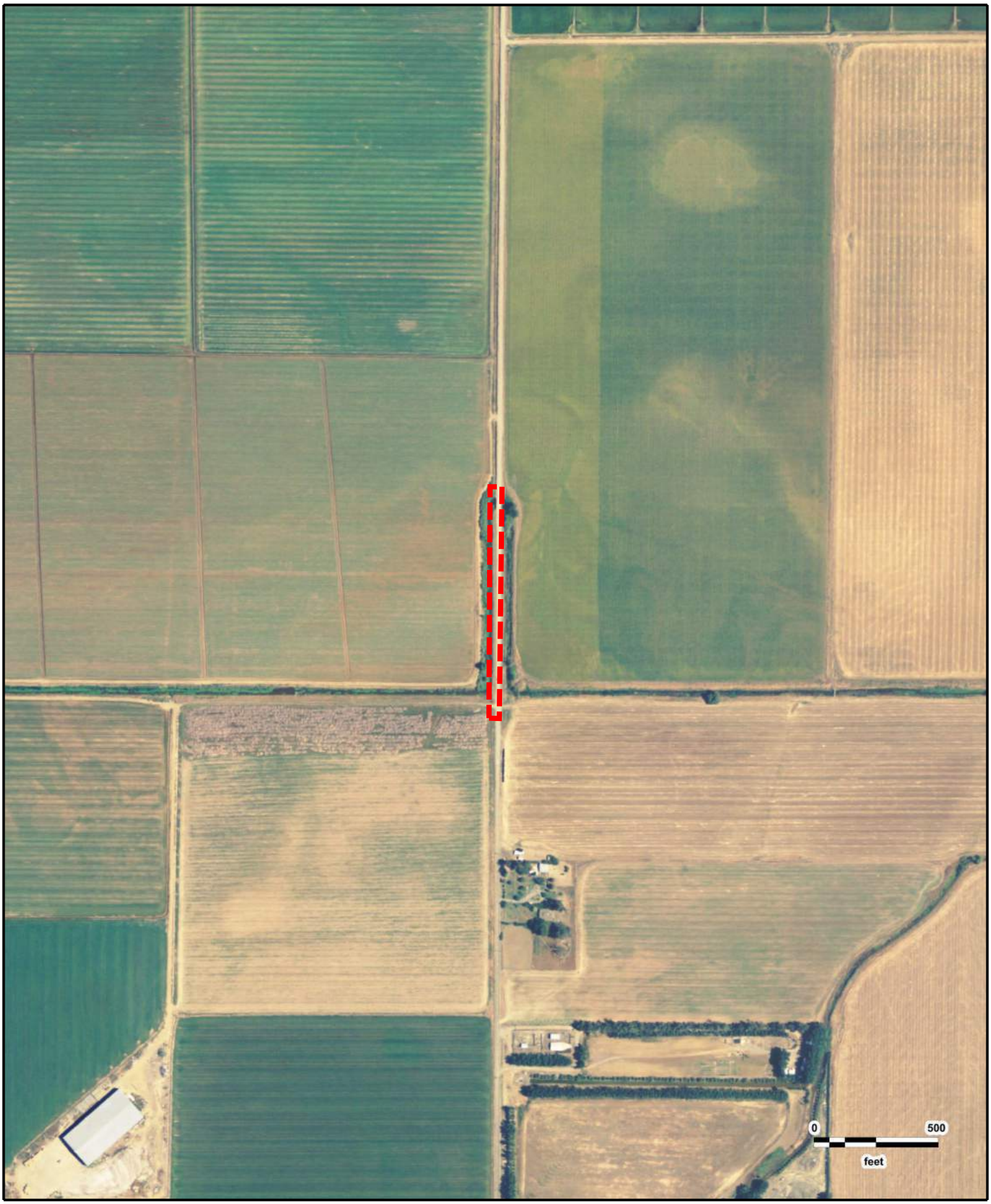


N
W E
S

CR 96 over Union School Slough
USDA
2004

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
USDA
2005

GeoSearch

JOB #: 346841 - 04/03/2020

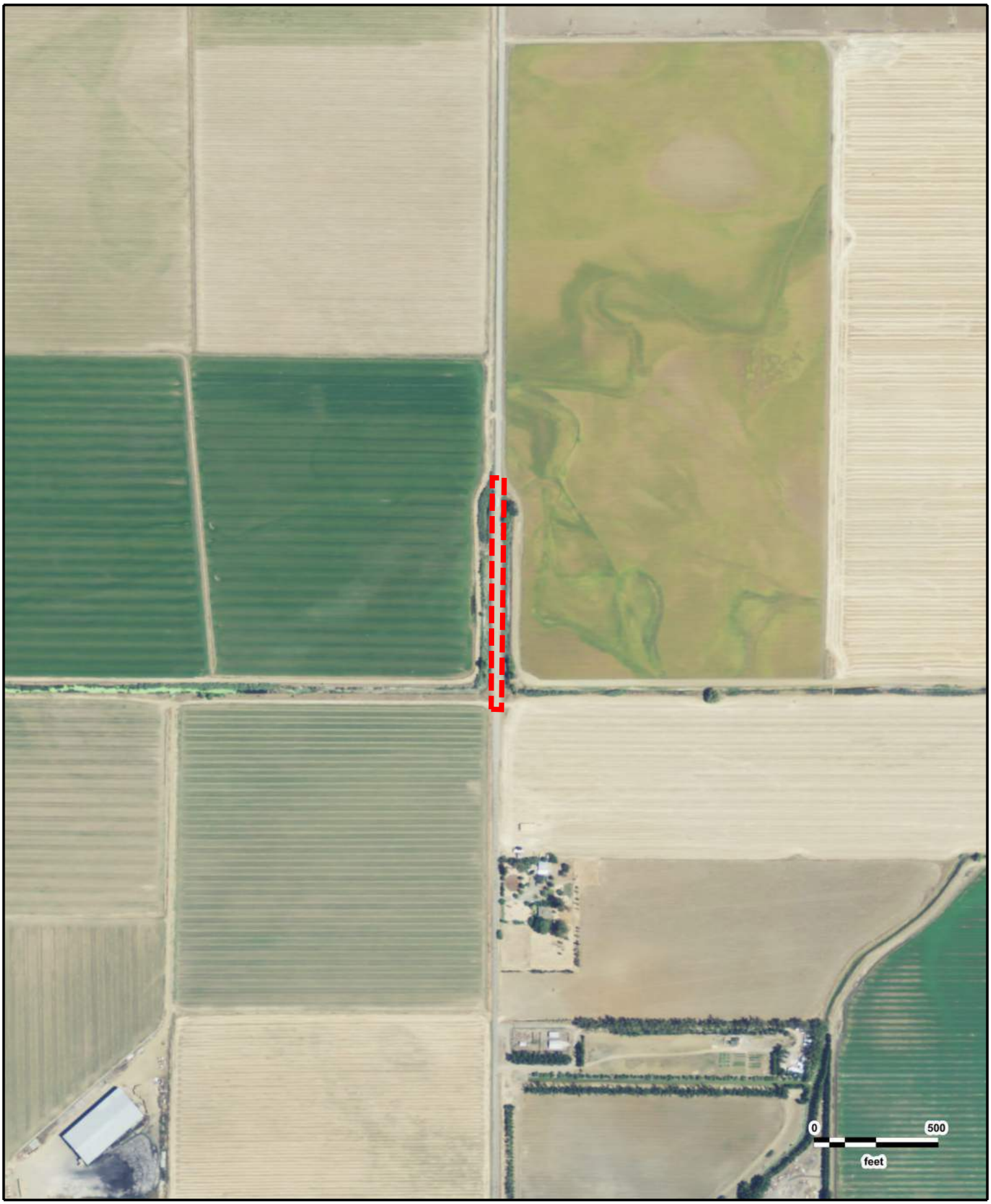


N
W E
S

CR 96 over Union School Slough
USDA
2006

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
USDA
2009

GeoSearch

JOB #: 346841 - 04/03/2020

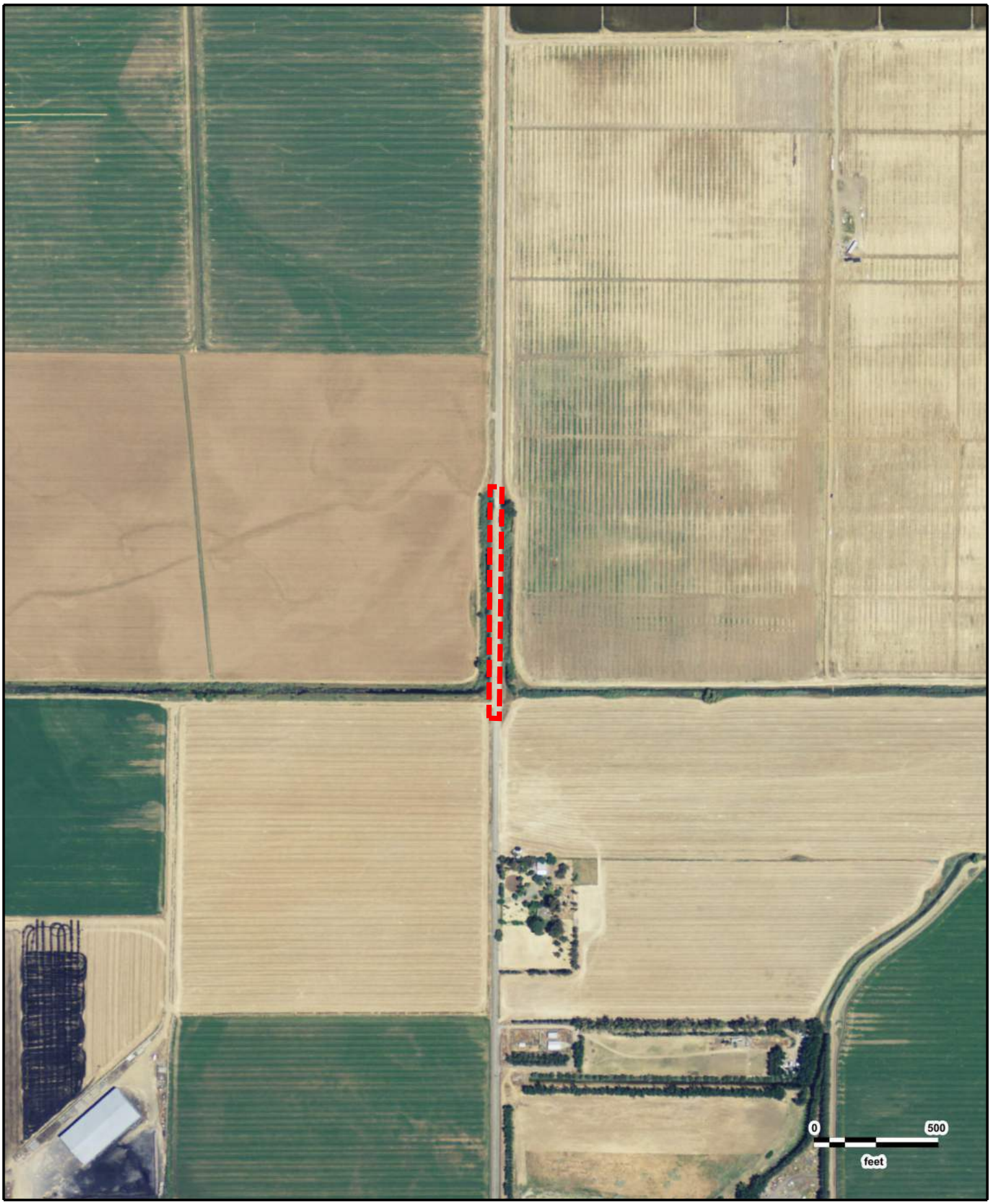


N
W E
S

CR 96 over Union School Slough
USDA
2010

GeoSearch

JOB #: 346841 - 04/03/2020

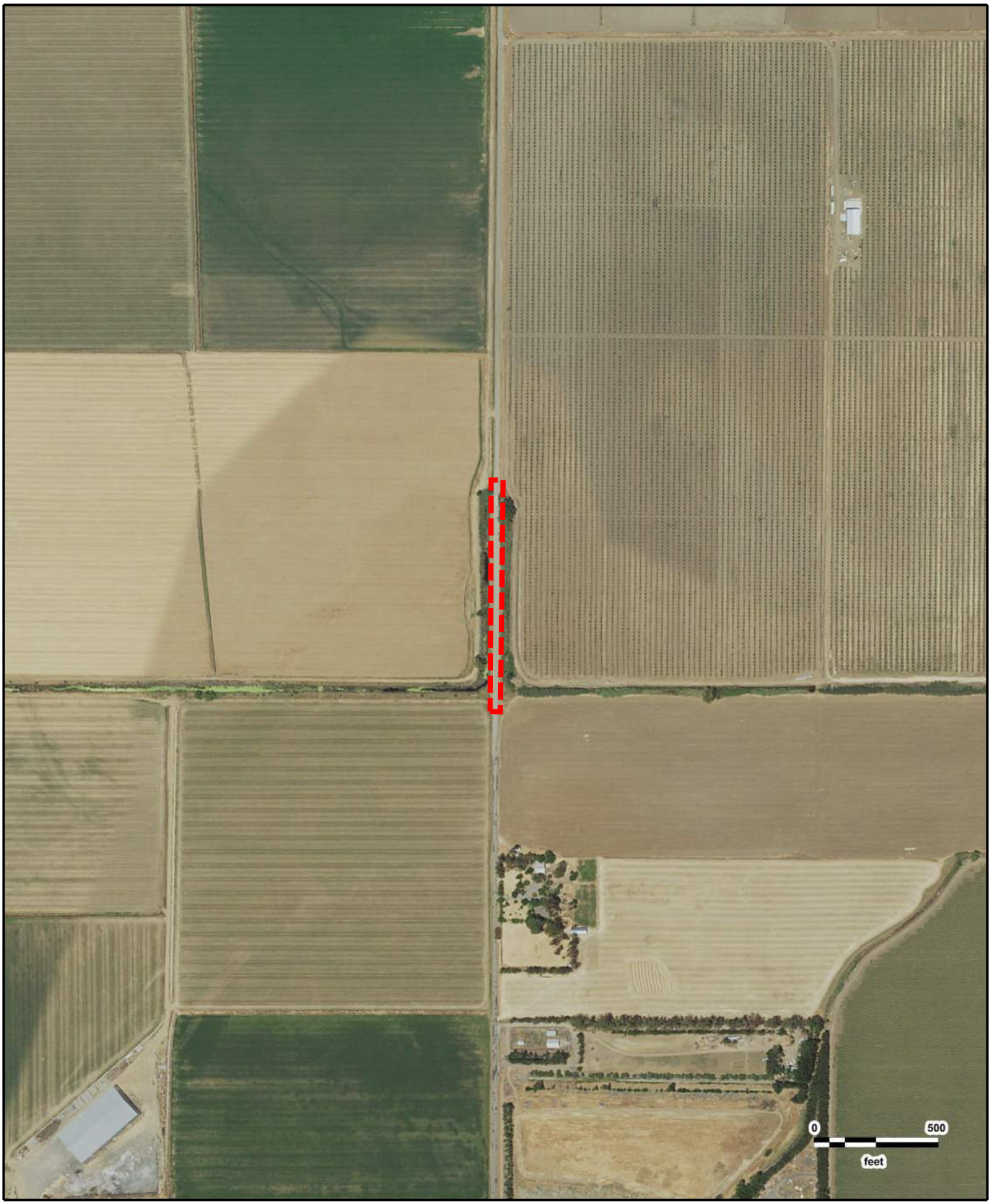


N
W E
S

CR 96 over Union School Slough
USDA
2012

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
USDA
2014

GeoSearch

JOB #: 346841 - 04/03/2020



N
W E
S

CR 96 over Union School Slough
USDA
2016

GeoSearch

JOB #: 346841 - 04/03/2020

APPENDIX D

GeoSearch Historical Topographic Maps

Order Number: 144396
Date: April 2, 2020

GeoSearch
On time. On target. In touch.™

Historical Topographic Maps

***NEW:** GeoLens by Geosearch*

Target Property:

CR 96 over Union School Slough

Yolo County, California

Prepared For:

Crawford & Associates

Order #: 144396
Job #: 346840
Project #: 18-474.1
Date: 4/2/2020

Target Property Summary

CR 96 over Union School Slough

Yolo County, California

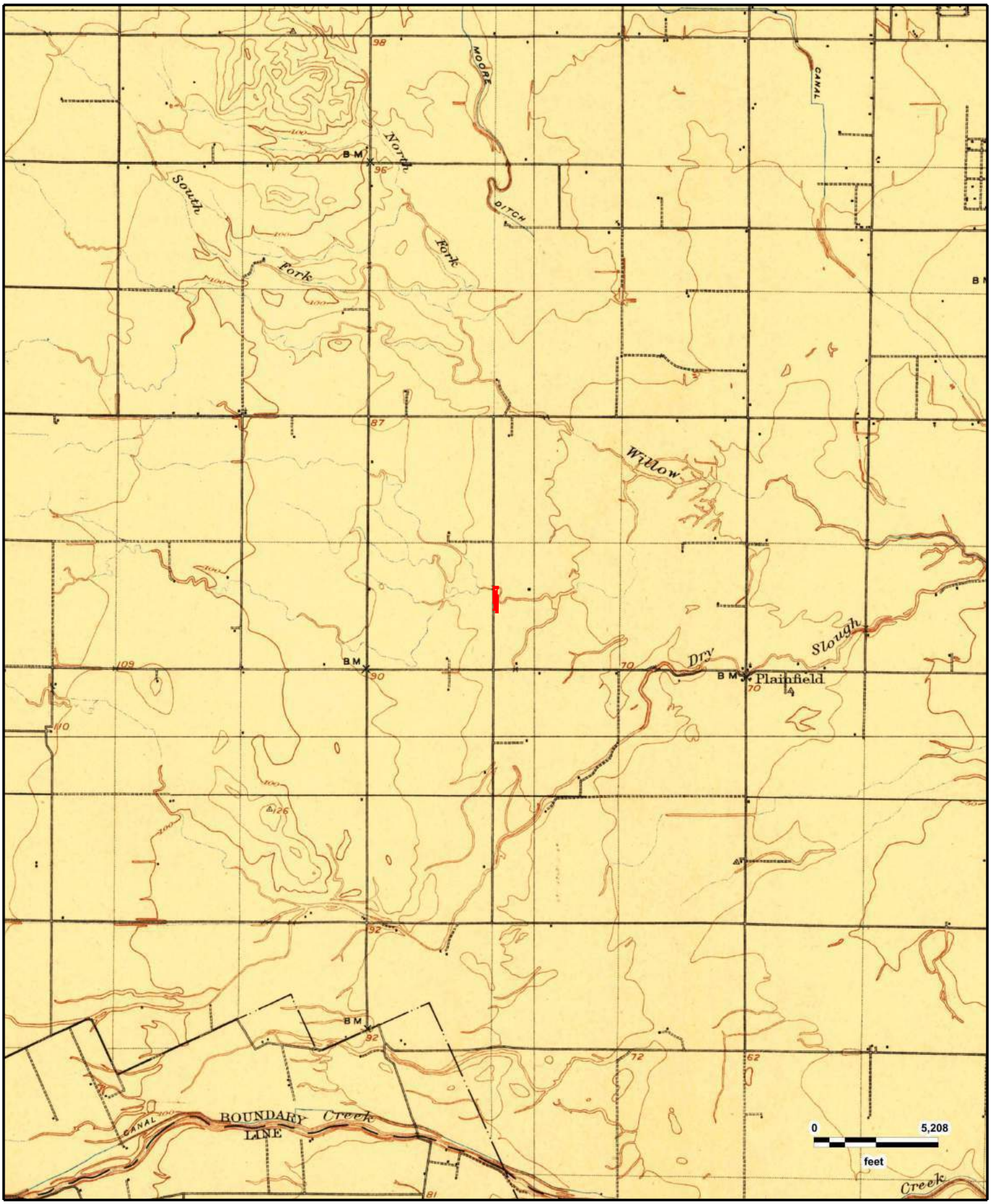
USGS Quadrangle: ***Merritt***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-121.840193000, 38.597652000), (-121.840049000, 38.597650000), (-121.840008000, 38.600199000), (-121.840179000, 38.600200000)

Topographic Map Summary

Date	Quadrangle	Scale
2012	MERRITT, CA	1" = 2000'
1992	MERRITT, CA	1" = 2000'
1952 PHOTOREVISED 1981	MERRITT, CA	1" = 2000'
1952 PHOTOREVISED 1975	MERRITT, CA	1" = 2000'
1952 PHOTOREVISED 1968	MERRITT, CA	1" = 2000'
1953	WOODLAND, CA	1" = 5208'
1952	MERRITT, CA	1" = 2000'
1941	WOODLAND, CA	1" = 5208'
1915	YOLO, CA (1915)	1" = 2640'
	MERRITT, CA (1915)	
1907	WOODLAND, CA	1" = 5208'

Disclaimer - The information provided in this report was obtained from a variety of public sources. GeoSearch cannot ensure and makes no warranty or representation as to the accuracy, reliability, quality, errors occurring from data conversion or the customer's interpretation of this report. This report was made by GeoSearch for exclusive use by its clients only. Therefore, this report may not contain sufficient information for other purposes or parties. GeoSearch and its partners, employees, officers and independent contractors cannot be held liable for actual, incidental, consequential, special or exemplary damages suffered by a customer resulting directly or indirectly from any information provided by GeoSearch.

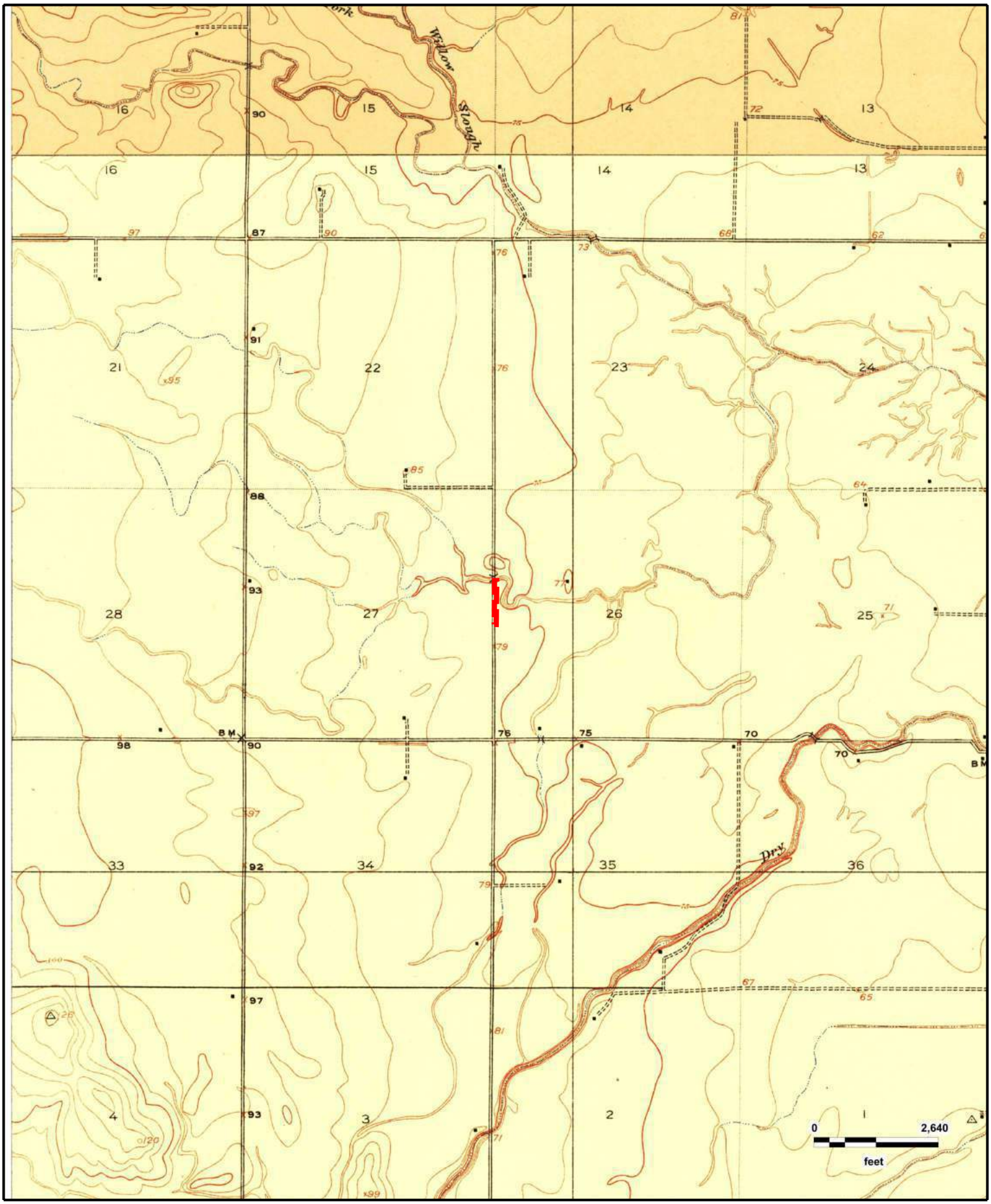


N
W E
S

CR 96 over Union School Slough
WOODLAND, CA (1907)

GeoSearch

JOB #: 346840 - 04/02/2020

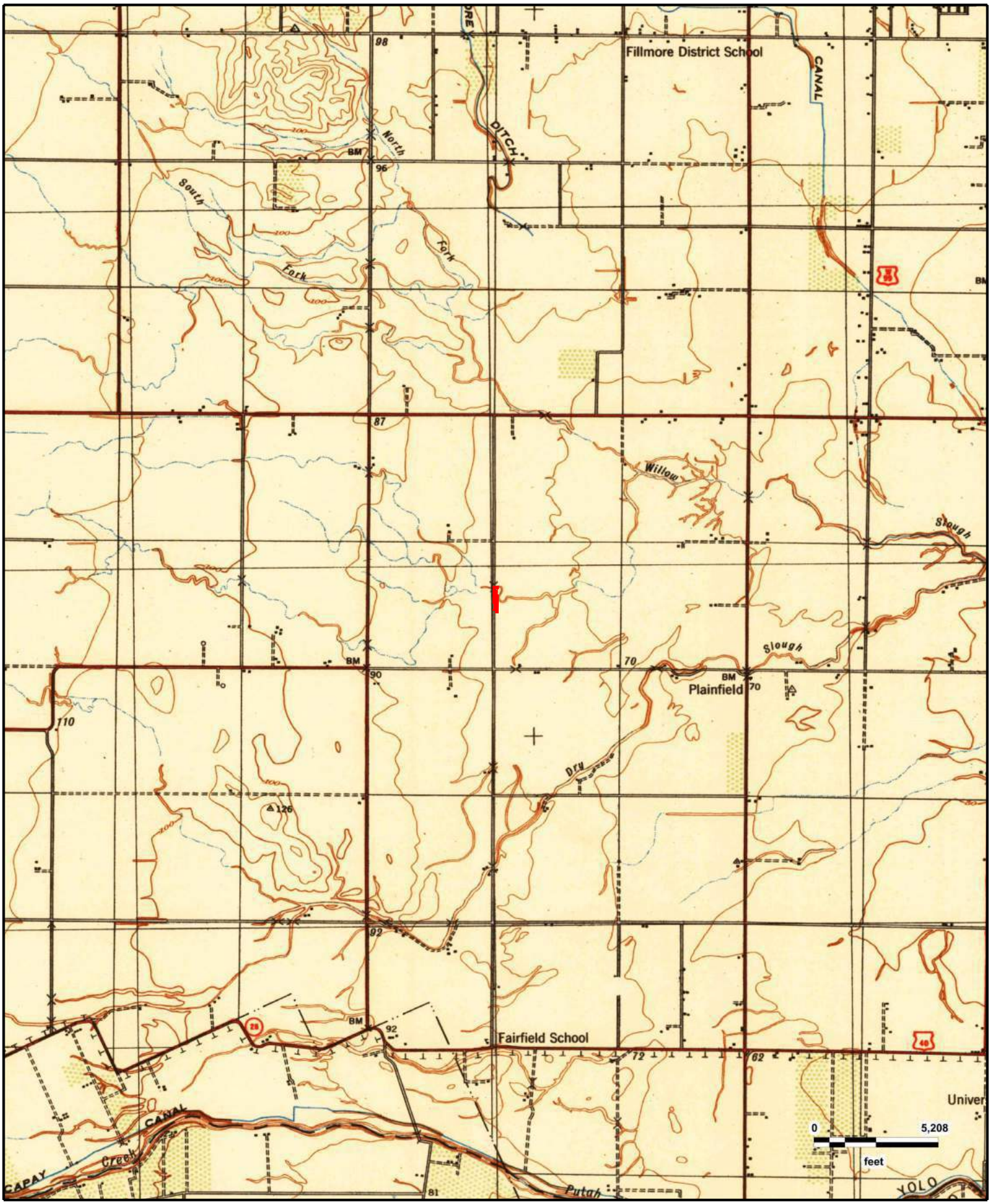


N
W E
S

CR 96 over Union School Slough
YOLO, CA (1915), MERRITT, CA (1915)

GeoSearch

JOB #: 346840 - 04/02/2020

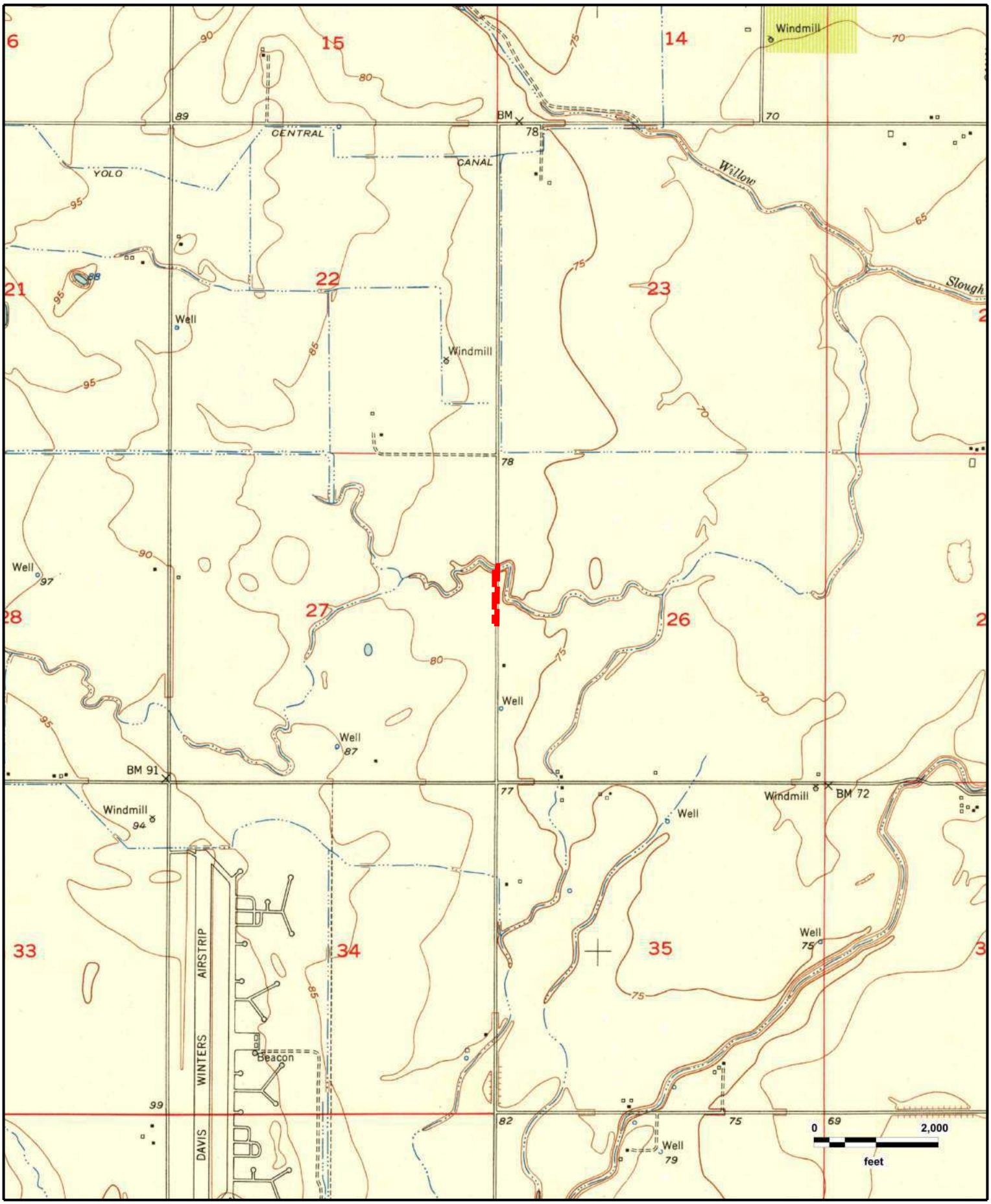


N
W E
S

CR 96 over Union School Slough
WOODLAND, CA (1941)

GeoSearch

JOB #: 346840 - 04/02/2020

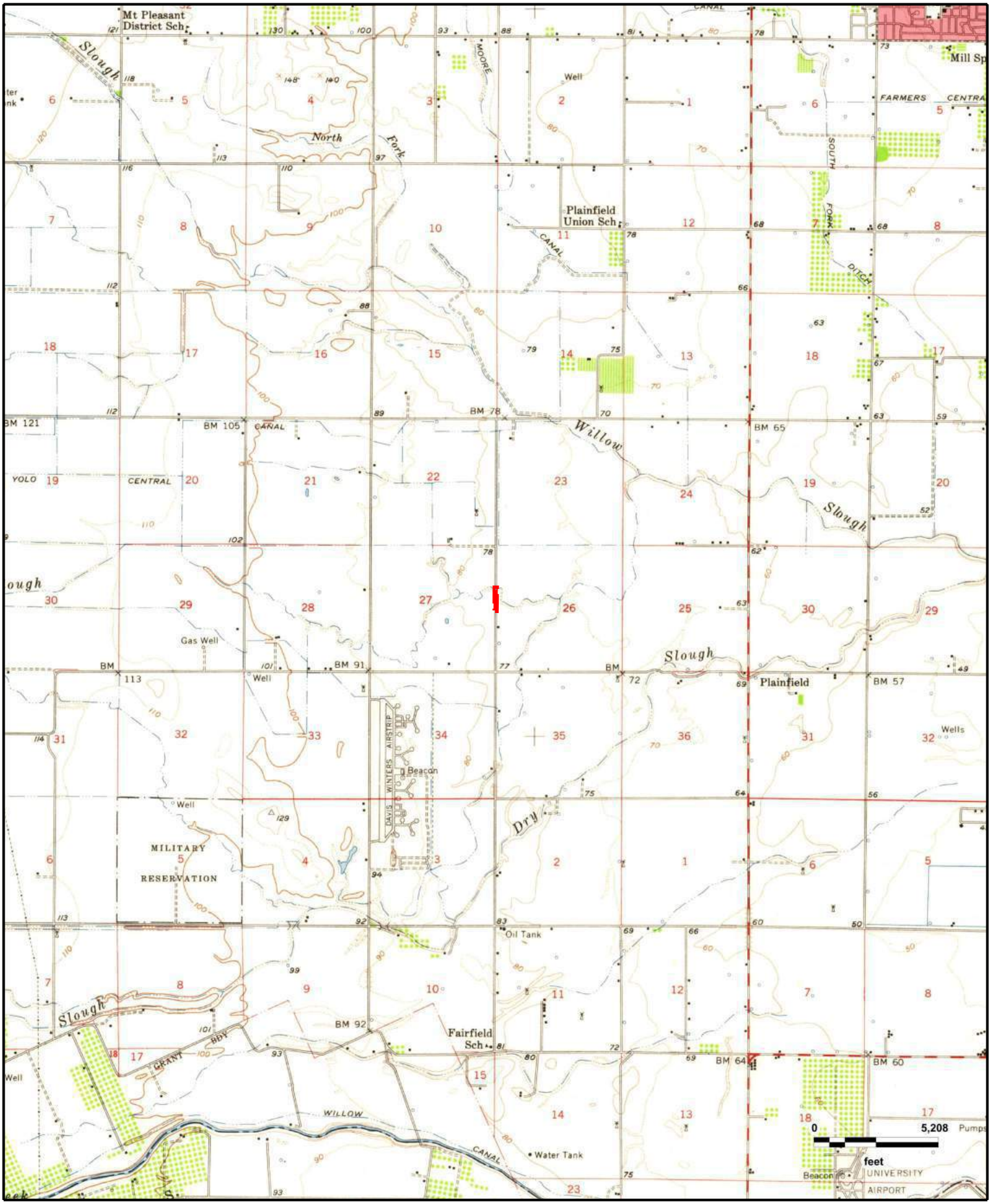


N
W E
S

CR 96 over Union School Slough
MERRITT, CA (1952)

GeoSearch

JOB #: 346840 - 04/02/2020

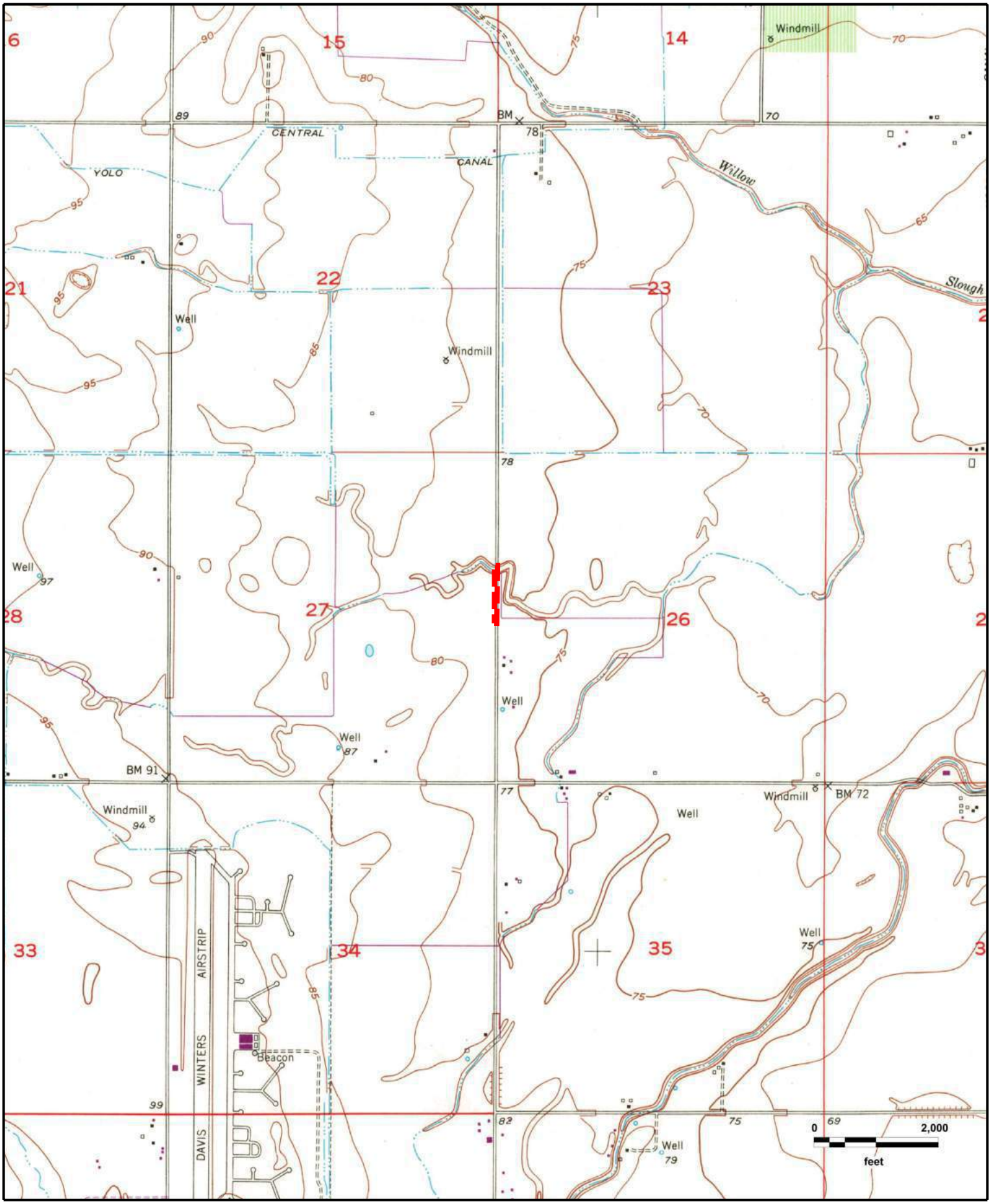


N
W E
S

CR 96 over Union School Slough
WOODLAND, CA (1953)

GeoSearch

JOB #: 346840 - 04/02/2020

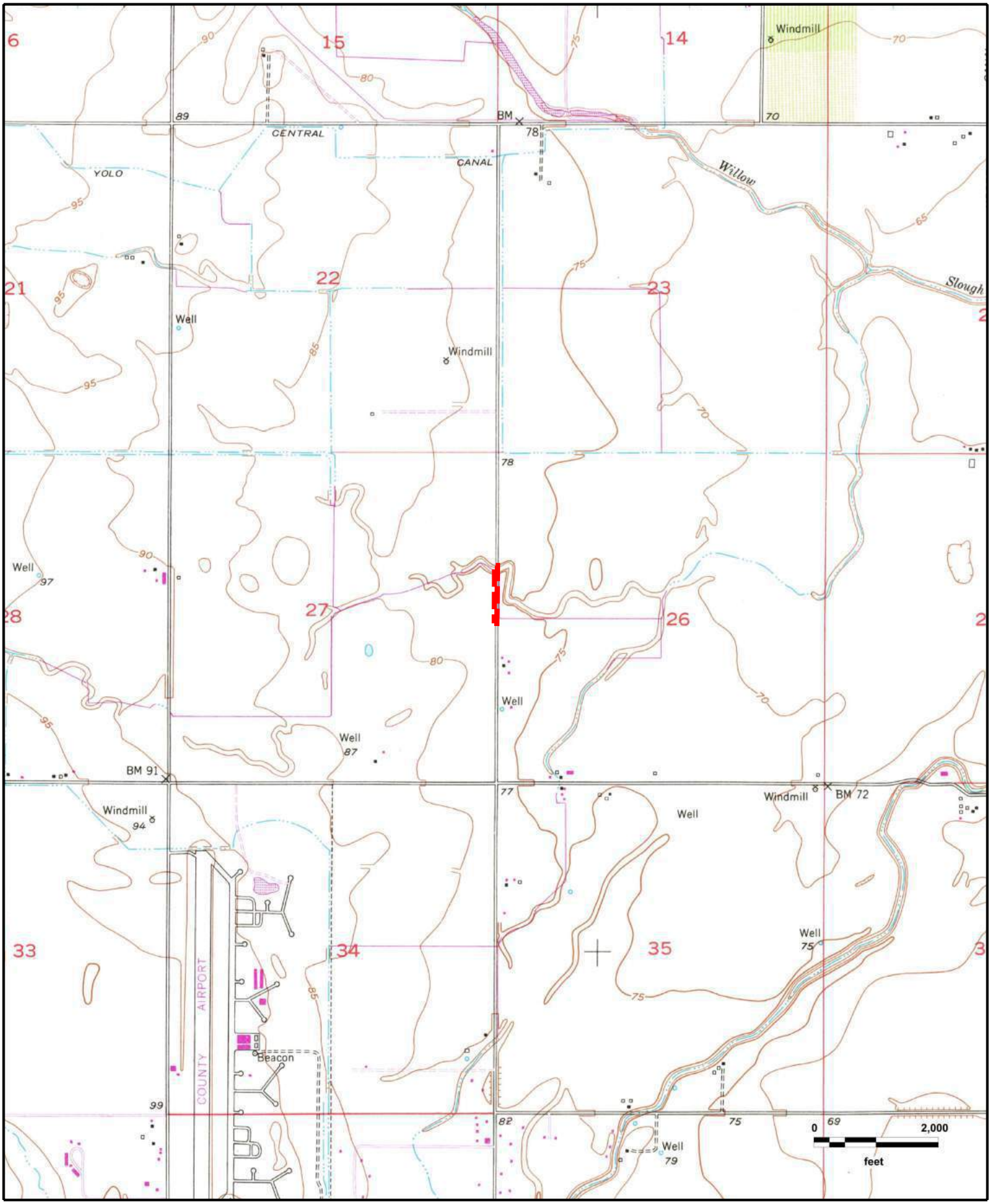


N
W E
S

CR 96 over Union School Slough
MERRITT, CA (1968)

GeoSearch

JOB #: 346840 - 04/02/2020

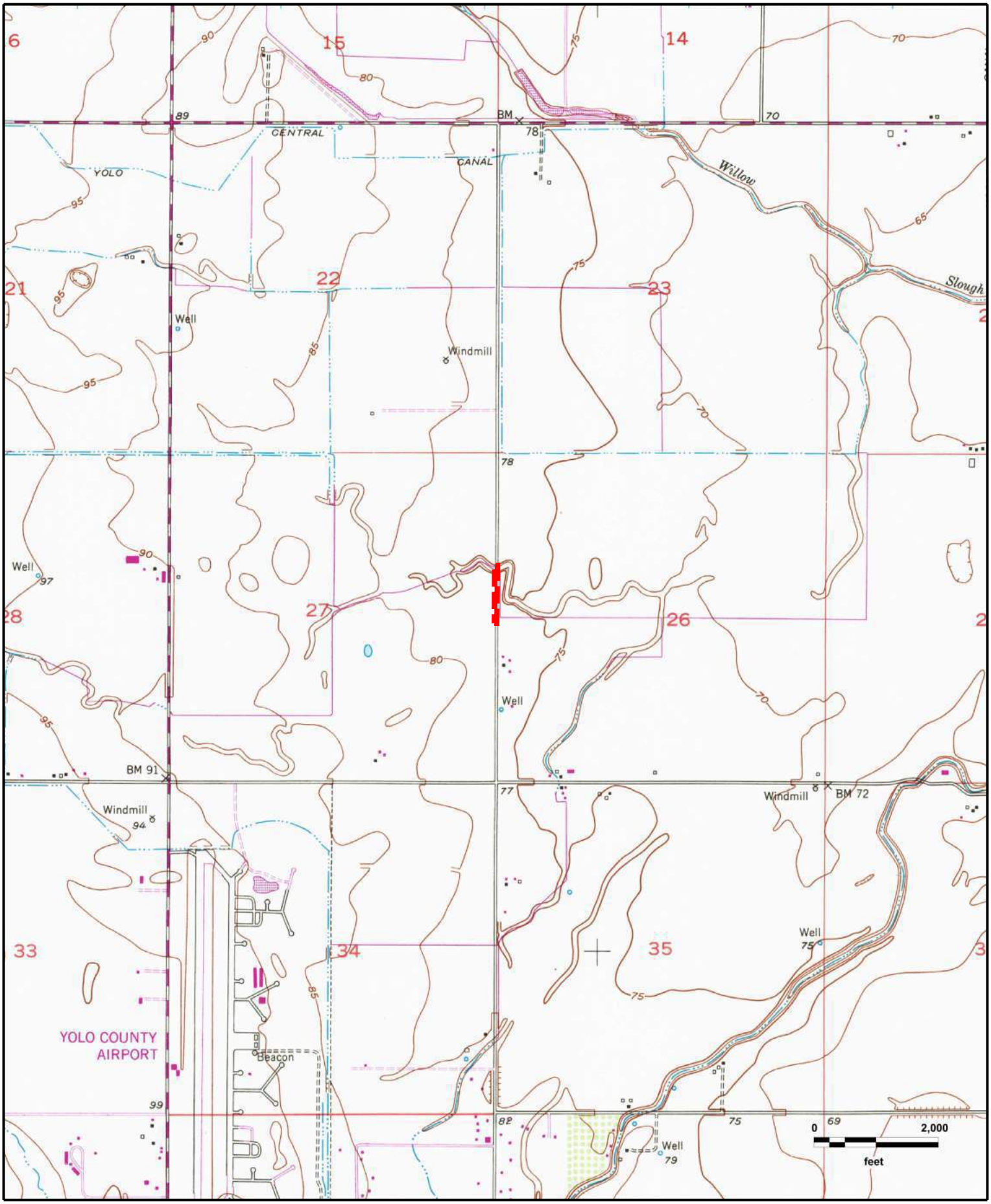


N
W E
S

CR 96 over Union School Slough
MERRITT, CA (1975)

GeoSearch

JOB #: 346840 - 04/02/2020

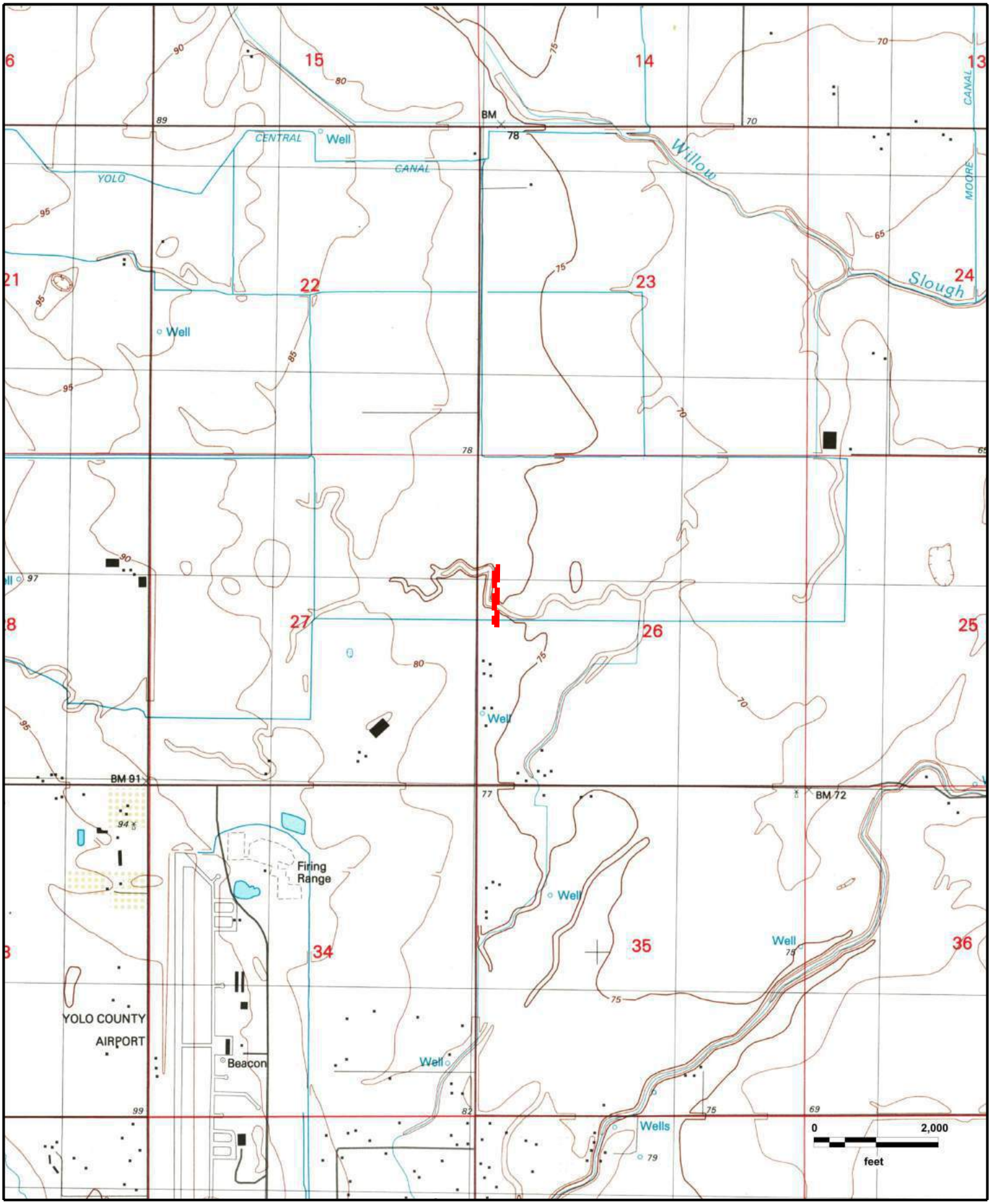


N
W E
S

CR 96 over Union School Slough
MERRITT, CA (1981)

GeoSearch

JOB #: 346840 - 04/02/2020

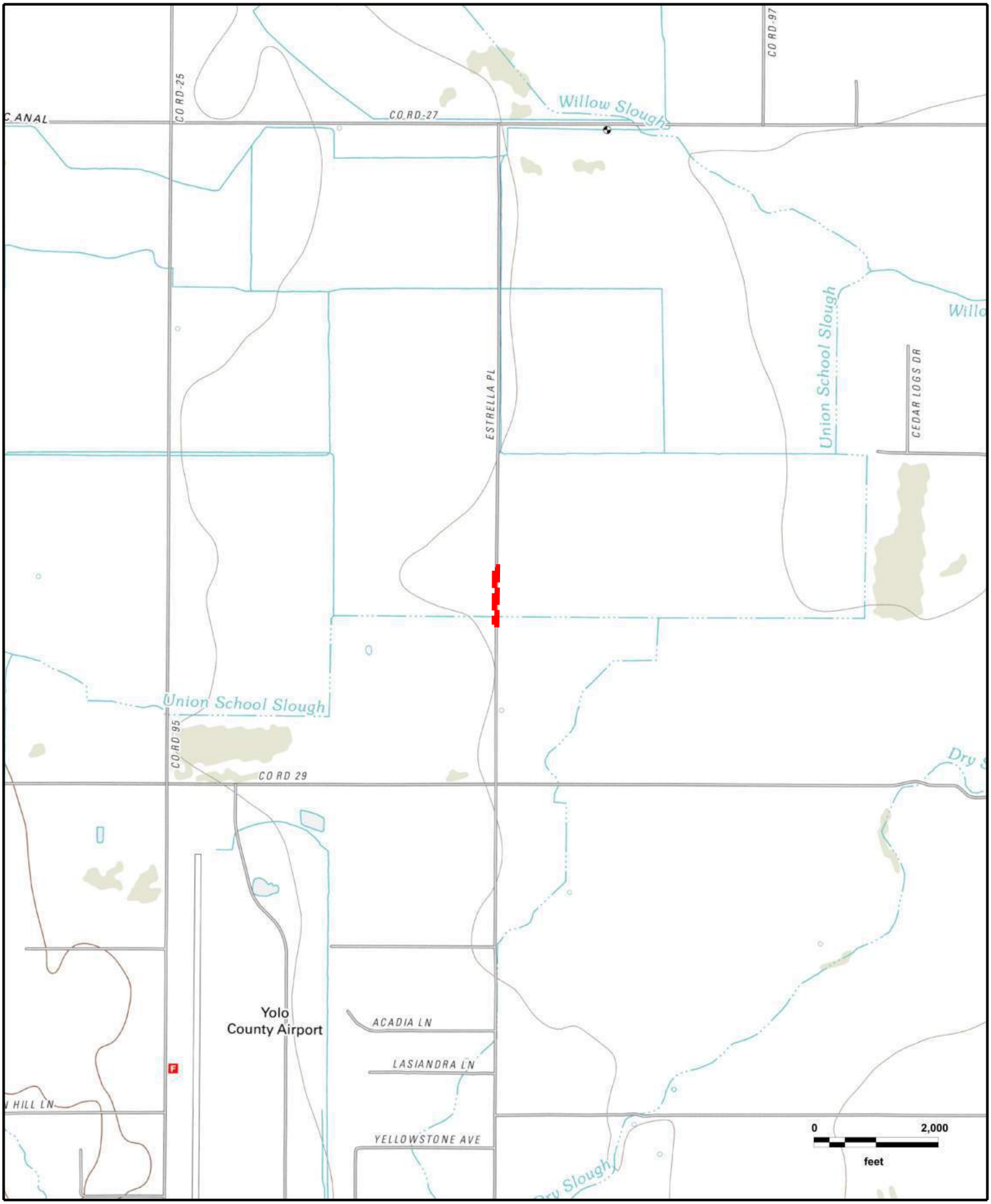


N
W E
S

CR 96 over Union School Slough
MERRITT, CA (1992)

GeoSearch

JOB #: 346840 - 04/02/2020



N
W E
S

CR 96 over Union School Slough
MERRITT, CA (2012)

GeoSearch

JOB #: 346840 - 04/02/2020

APPENDIX E

GeoSearch Radius Report

Order Number: 144396
Date: April 1, 2020

GeoSearch
On time. On target. In touch.™

Radius Report

GeoLens by GeoSearch

Target Property:

CR 96 over Union School Slough
Yolo County, California

Prepared For:

Crawford & Associates

Order #: 144396
Job #: 346839
Project #: 18-474.1
Date: 04/01/2020

Table of Contents

Target Property Summary 1

Database Summary 2

Database Radius Summary 8

Radius Map 14

Ortho Map 16

Topographic Map 17

Located Sites Summary 18

Site Summary By Database 19

Unlocated Sites Summary 24

Environmental Records Definitions 25

Unlocatable Report . . . . . See Attachment

Zip Report . . . . . See Attachment

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR ï¿½312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR ï¿½312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

The information provided in this report was obtained from a variety of public sources. GeoSearch cannot ensure and makes no warranty or representation as to the accuracy, reliability, quality, errors occurring from data conversion or the customer's interpretation of this report. This report was made by GeoSearch for exclusive use by its clients only. Therefore, this report may not contain sufficient information for other purposes or parties. GeoSearch and its partners, employees, officers And independent contractors cannot be held liable For actual, incidental, consequential, special or exemplary damages suffered by a customer resulting directly or indirectly from any information provided by GeoSearch.

Target Property Summary

Target Property Information

CR 96 over Union School Slough
California

Coordinates
Area centroid (-121.84010, 38.5989616)
79 feet above sea level

USGS Quadrangle
Merritt, CA

Geographic Coverage Information

County/Parish: Yolo (CA)
ZipCode(s):
Davis CA: 95616
Woodland CA: 95695

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSCA	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR09	0	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR	RCRANGR09	0	0	0.1250
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	0	0	0.5000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
ENFORCEMENT AND COMPLIANCE HISTORY INFORMATION	ECHOR09	0	0	TP/AP
FACILITY REGISTRY SYSTEM	FRSCA	0	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR09	0	0	TP/AP
HAZARDOUS WASTE COMPLIANCE DOCKET FACILITIES	HWCD	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	0	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR09	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR09	0	0	TP/AP
SEMS LIEN ON PROPERTY	SEMSLIENS	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
ALTERNATIVE FUELING STATIONS	ALTFUELS	0	0	0.2500
FEMA OWNED STORAGE TANKS	FEMAUST	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
INTEGRATED COMPLIANCE INFORMATION SYSTEM DRYCLEANERS	ICISCLEANERS	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	0	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
SURFACE MINING CONTROL AND RECLAMATION ACT SITES	SMCRA	0	0	0.5000
URANIUM MILL TAILINGS RADIATION CONTROL ACT SITES	USUMTRCA	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	1	0	1.0000
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	FUSRAP	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000

SUB-TOTAL		1	0	

Database Summary

STATE (CA) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
DTSC DEED RESTRICTIONS	DTSCDR	0	0	TP/AP
ABOVE GROUND STORAGE TANKS	ABST	0	0	0.2500
ABOVEGROUND STORAGE TANKS PRIOR TO JANUARY 2008	AST2007	0	0	0.2500
HISTORICAL UNDERGROUND STORAGE TANKS	HISTUST	0	0	0.2500
STATEWIDE ENVIRONMENTAL EVALUATION AND PLANNING SYSTEM	SWEEPS	0	0	0.2500
UNDERGROUND STORAGE TANKS	USTCUPA	0	0	0.2500
BROWNFIELD SITES	BF	0	0	0.5000
CALSITES DATABASE	CALSITES	0	0	0.5000
GEOTRACKER CLEANUP SITES	CLEANUPSITES	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS	LUST	0	0	0.5000
SOLID WASTE INFORMATION SYSTEM SITES	SWIS	0	0	0.5000
VOLUNTARY CLEANUP PROGRAM	VCP	0	0	0.5000
ENVIROSTOR CLEANUP SITES	ENVIROSTOR	0	0	1.0000
ENVIROSTOR PERMITTED AND CORRECTIVE ACTION SITES	ENVIROSTORPCA	0	0	1.0000

SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CALIFORNIA HAZARDOUS MATERIAL INCIDENT REPORT SYSTEM	CHMIRS	0	0	TP/AP
CLANDESTINE DRUG LABS	CDL	0	0	TP/AP
EMISSIONS INVENTORY DATA	EMI	0	0	TP/AP
HAZARDOUS WASTE TANNER SUMMARY	HWTS	0	0	TP/AP
LAND DISPOSAL SITES	LDS	0	0	TP/AP
MILITARY CLEANUP SITES	MCS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FACILITIES	NPDES	0	0	TP/AP
RECORDED ENVIRONMENTAL CLEANUP LIENS	LIENS	0	0	TP/AP
CALIFORNIA MEDICAL WASTE MANAGEMENT PROGRAM FACILITY LIST	MWMP	0	0	0.2500
DTSC REGISTERED HAZARDOUS WASTE TRANSPORTERS	DTSCHWT	0	0	0.2500
DRY CLEANER FACILITIES	CLEANER	0	0	0.2500
MINES LISTING	MINES	0	0	0.2500

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
SPILLS, LEAKS, INVESTIGATION & CLEANUP RECOVERY LISTING	SLIC	0	0	0.2500
CORTESE LIST	CORTESE	0	0	0.5000
EXPEDITED REMOVAL ACTION PROGRAM SITES	ERAP	0	0	0.5000
HISTORICAL CORTESE LIST	HISTCORTESE	0	0	0.5000
LISTING OF CERTIFIED DROPOFF, COLLECTION, AND COMMUNITY SERVICE PROGRAMS	DROP	0	0	0.5000
LISTING OF CERTIFIED PROCESSORS	PROC	0	0	0.5000
NO FURTHER ACTION DETERMINATION	NFA	0	0	0.5000
RECYCLING CENTERS	SWRCY	0	0	0.5000
REFERRED TO ANOTHER LOCAL OR STATE AGENCY	REF	0	0	0.5000
SITES NEEDING FURTHER EVALUATION	NFE	0	0	0.5000
WASTE MANAGEMENT UNIT DATABASE	WMUDS	0	0	0.5000
TOXIC PITS CLEANUP ACT SITES	TOXPITS	0	0	1.0000

SUB-TOTAL		0	0	

Database Summary

LOCAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
YOLO COUNTY UNDERGROUND STORAGE TANKS	YCUST	0	0	0.2500
YOLO COUNTY LEAKING STORAGE TANKS	YCLST	0	1	0.5000
SUB-TOTAL		0	1	

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR09	0	0	0.2500
ILLEGAL DUMP SITES ON THE TORRES MARTINEZ RESERVATION	TORRESDUMPSITES	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR09	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	

TOTAL		1	1	

Database Radius Summary

FEDERAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
ECHOR09	0.0200	0	NS	NS	NS	NS	NS	0
ERNSCA	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
FRSCA	0.0200	0	NS	NS	NS	NS	NS	0
HMIRSR09	0.0200	0	NS	NS	NS	NS	NS	0
HWCD	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	0	NS	NS	NS	NS	NS	0
LUCIS	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR09	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR09	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SEMSLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
RCRAGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
RCRANGR09	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
ALTFUELS	0.2500	0	0	0	NS	NS	NS	0
FEMAUST	0.2500	0	0	0	NS	NS	NS	0
HISTPST	0.2500	0	0	0	NS	NS	NS	0
ICISCLEANERS	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	0	0	0	NS	NS	NS	0
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DNPL	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NLRRCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODI	0.5000	0	0	0	0	NS	NS	0

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
RCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMSARCH	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SMCRA	0.5000	0	0	0	0	NS	NS	0
USUMTRCA	0.5000	0	0	0	0	NS	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	1	NS	1
FUSRAP	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0

SUB-TOTAL		0	0	0	0	1	0	1

Database Radius Summary

STATE (CA) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
CDL	0.0200	0	NS	NS	NS	NS	NS	0
CHMIRS	0.0200	0	NS	NS	NS	NS	NS	0
DTSCDR	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
EMI	0.0200	0	NS	NS	NS	NS	NS	0
HWTS	0.0200	0	NS	NS	NS	NS	NS	0
LDS	0.0200	0	NS	NS	NS	NS	NS	0
LIENS	0.0200	0	NS	NS	NS	NS	NS	0
MCS	0.0200	0	NS	NS	NS	NS	NS	0
NPDES	0.0200	0	NS	NS	NS	NS	NS	0
ABST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
AST2007	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
CLEANER	0.2500	0	0	0	NS	NS	NS	0
DTSCHWT	0.2500	0	0	0	NS	NS	NS	0
HISTUST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
MINES	0.2500	0	0	0	NS	NS	NS	0
MWMP	0.2500	0	0	0	NS	NS	NS	0
SLIC	0.2500	0	0	0	NS	NS	NS	0
SWEEPS	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
USTCUPA	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CALSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CLEANUPSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
CORTESE	0.5000	0	0	0	0	NS	NS	0
DROP	0.5000	0	0	0	0	NS	NS	0
ERAP	0.5000	0	0	0	0	NS	NS	0
HISTCORTESE	0.5000	0	0	0	0	NS	NS	0
LUST	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NFA	0.5000	0	0	0	0	NS	NS	0
NFE	0.5000	0	0	0	0	NS	NS	0
PROC	0.5000	0	0	0	0	NS	NS	0
REF	0.5000	0	0	0	0	NS	NS	0
SWIS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SWRCY	0.5000	0	0	0	0	NS	NS	0
VCP	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
WMUDS	0.5000	0	0	0	0	NS	NS	0

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
ENVIROSTOR	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
ENVIROSTORPCA	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
TOXPITS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0

Database Radius Summary

LOCAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
YCUST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
YCLST	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SUB-TOTAL		0	0	0	0	0	0	0

Database Radius Summary

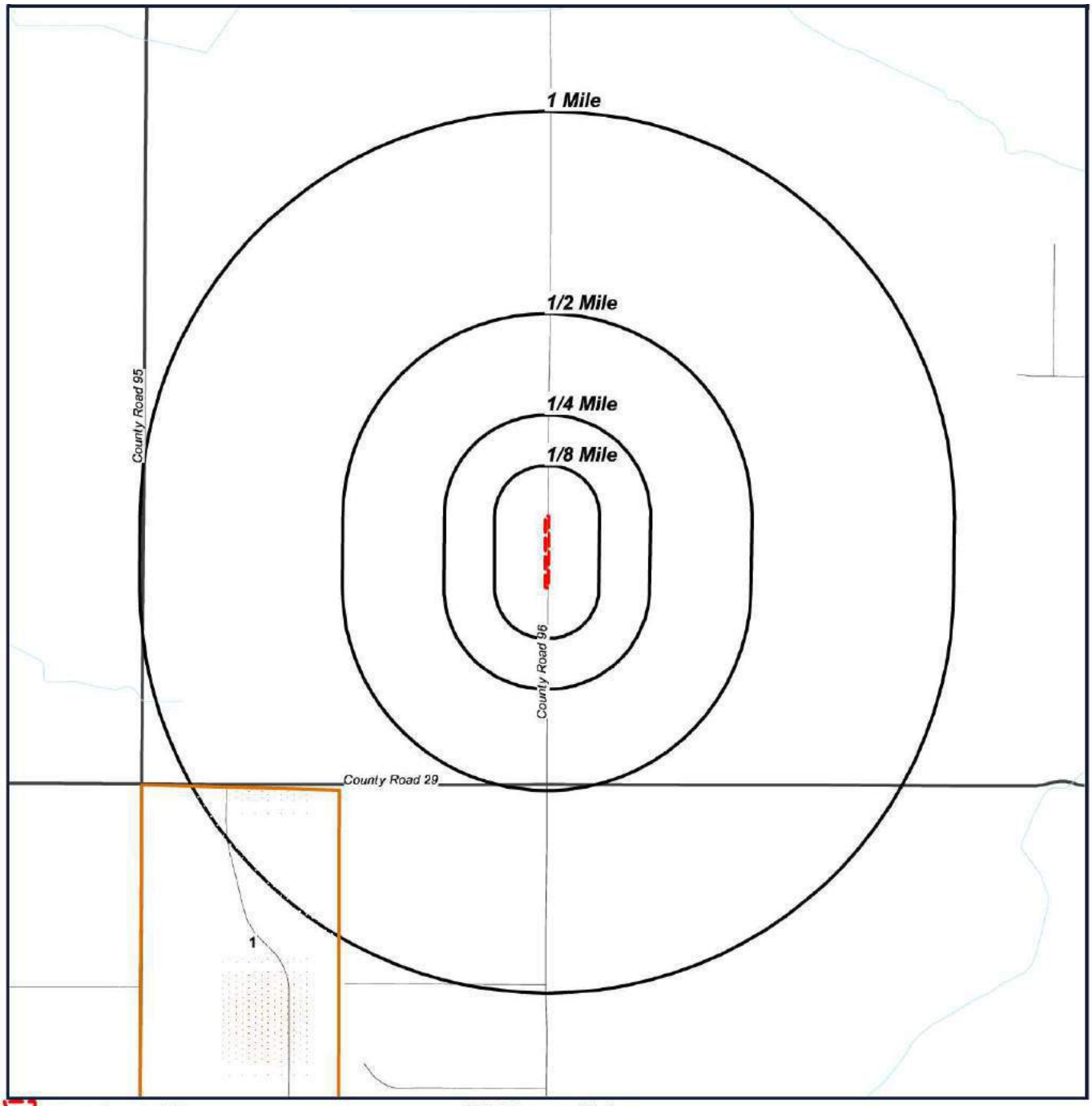
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR09	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR09	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
TORRESDUMPSITES	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		0	0	0	0	1	0	1

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



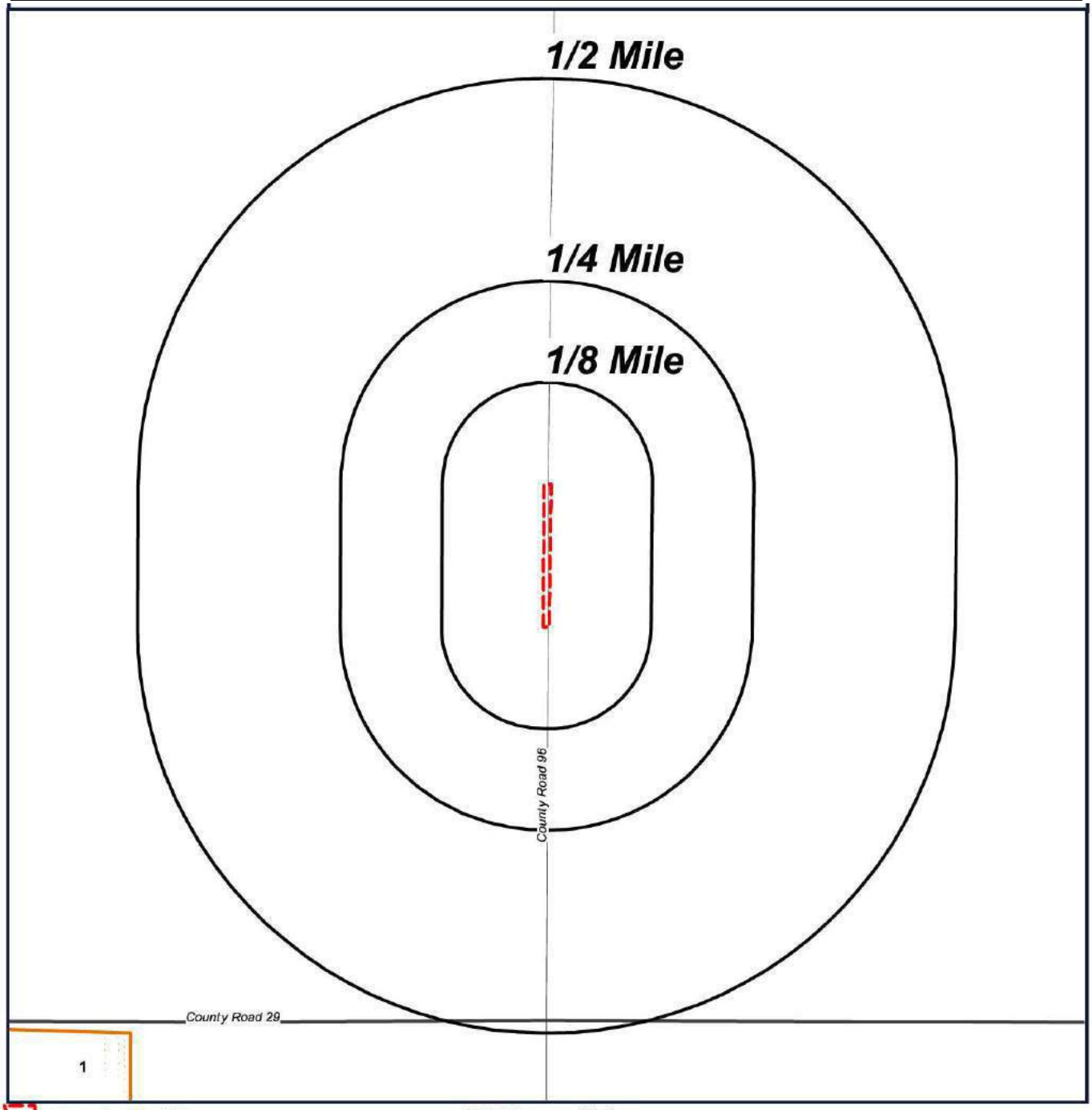
Target Property (TP)
FUDS

CR 96 over Union School Slough County, California

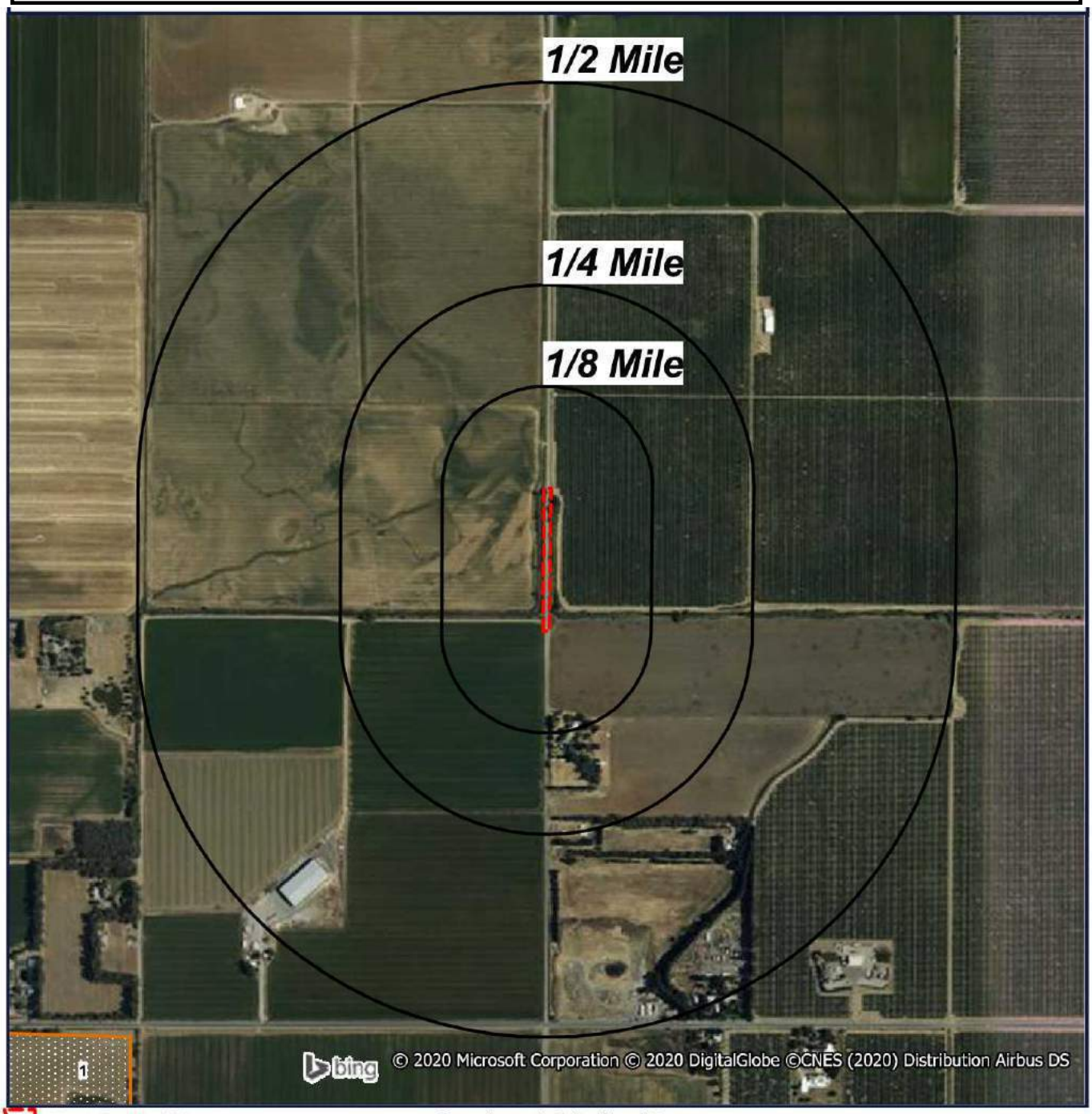
N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Radius Map 2


1/2 Mile
1/4 Mile
1/8 Mile
County Road 96
County Road 29
1
Target Property (TP)
FUDS
CR 96 over Union
School Slough
County, California
N
W
E
S
0'
500'
1000'
1500'
SCALE: 1" = 1000'

Ortho Map



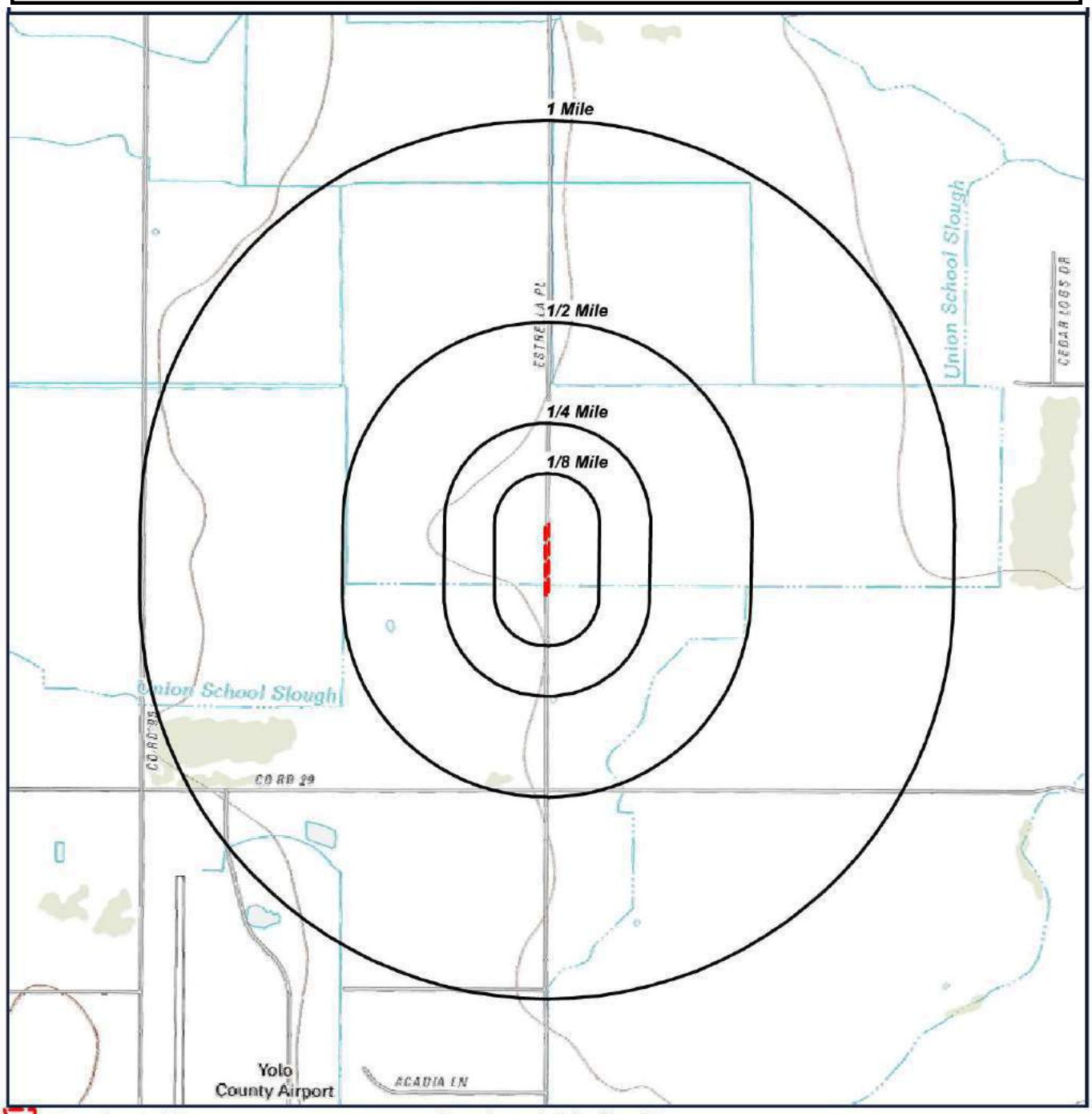
Target Property (TP)
FUDS

Quadrangle(s): Merritt
CR 96 over Union
School Slough
County, California

N
W E
S

0' 500' 1000' 1500'
SCALE: 1" = 1000'

Topographic Map



Target Property (TP)

Quadrangle(s): Merritt
Source: USGS,
03/08/2012
CR 96 over Union
School Slough
County, California

N
W E
S

0' 1000' 2000' 3000'
SCALE: 1" = 2000'

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
1	FUDS	J09CA0094	Higher (88 ft.)	0.713 mi. SW (3765 ft.)	YOLO COUNTY AIRPORT	YOLO COUNTY, DAVIS, CA 95616	20

Site Summary By Database

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address
1	FUDS	J09CA0094	Higher (88 ft.)	0.713 mi. SW (3765 ft.)	YOLO COUNTY AIRPORT	YOLO COUNTY, DAVIS, CA 95616

MAP ID# 1

Distance from Property: 0.713 mi. (3,765 ft.) SW
Elevation: 88 ft. (Higher than TP)

FACILITY INFORMATION

Geosearch Id: **J09CA0094**
FUDS NUMBER: **J09CA0094**
PROPERTY NAME: **YOLO COUNTY AIRPORT**
ADDRESS: **YOLO COUNTY**
DAVIS, CA 95616
COUNTY: **YOLO**

FACILITY DETAIL(S)

FUDS PROPERTY POINT DATA
FFID: **CA99799F530000**
PROPERTY ID: **NOT REPORTED**
PROJECT ID: **NOT REPORTED**
ENV SITE ID: **NOT REPORTED**
SITE ID: **NOT REPORTED**
MRA ID: **NOT REPORTED**
PROJECT NUMBER: **NOT REPORTED**
PROJECT NAME: **NOT REPORTED**
PROGRAM: **NOT REPORTED**
CATEGORY: **NOT REPORTED**
STATUS: **PROPERTIES WITH ALL PROJECTS AT SITE CLOSEOUT**
FED LAND TYPE: **NOT REPORTED**
FED LAND NAME: **NOT REPORTED**
FED LAND AGENCY: **NOT REPORTED**
SITE CLOSEOUT DATE: **NOT REPORTED**
REMEDY IN PLACE DATE: **NOT REPORTED**
RESPONSE COMPLETE DATE: **NOT REPORTED**
NPL STATUS CODE: **NOT LISTED**
CURRENT OWNER: **LOCAL GOVERNMENT; PRIVATE SECTOR**
ELIGIBILITY: **ELIGIBLE**
HAS PROJECTS: **YES**
FISCAL YEAR: **2018**
EPA REGION: **09**
CONGRESSIONAL DISTRICT: **03**
DISTRICT RESPONSIBLE FOR THE FUDS PROPERTY: **SACRAMENTO DISTRICT (SPK)**
IS THE PROPERTY HAS ANY CLEANUP UNDER THE MILITARY MUNITIONS RESPONSE PROGRAM (MMRP): **NOT REPORTED**
ACREAGE: **NOT REPORTED**
DESCRIPTION: **NOT REPORTED**
HISTORY: **NOT REPORTED**
EMS MAP LINK: CLICK HERE

FUDS PROPERTY POLYGON DATA
FFID: **CA99799F530000**
PROPERTY ID: **NOT REPORTED**

PROJECT ID: **NOT REPORTED**
ENV SITE ID: **NOT REPORTED**
SITE ID: **NOT REPORTED**
MRA ID: **NOT REPORTED**
PROJECT NUMBER: **NOT REPORTED**
PROJECT NAME: **NOT REPORTED**
PROGRAM: **NOT REPORTED**
CATEGORY: **NOT REPORTED**
STATUS: **PROPERTIES WITH ALL PROJECTS AT SITE CLOSEOUT**
FED LAND TYPE: **NOT REPORTED**
FED LAND NAME: **NOT REPORTED**
FED LAND AGENCY: **NOT REPORTED**
SITE CLOSEOUT DATE: **NOT REPORTED**
REMEDY IN PLACE DATE: **NOT REPORTED**
RESPONSE COMPLETE DATE: **NOT REPORTED**
NPL STATUS CODE: **NOT LISTED**
CURRENT OWNER: **LOCAL GOVERNMENT; PRIVATE SECTOR**
ELIGIBILITY: **ELIGIBLE**
HAS PROJECTS: **YES**
FISCAL YEAR: **2018**
EPA REGION: **9**
CONGRESSIONAL DISTRICT: **3**
DISTRICT RESPONSIBLE FOR THE FUDS PROPERTY: **SACRAMENTO DISTRICT (SPK)**
IS THE PROPERTY HAS ANY CLEANUP UNDER THE MILITARY MUNITIONS RESPONSE PROGRAM (MMRP): **Y**
ACREAGE: **NOT REPORTED**
DESCRIPTION: **THE 510.15-ACRE SITE IS APPROXIMATELY EIGHT MILES NORTHWEST OF DOWNTOWN DAVIS IN YOLO COUNTY, CALIFORNIA. THE 495.98-ACRE PORTION OF THE SITE IS CURRENTLY OWNED BY THE COUNTY OF YOLO AND UTILIZED AS THE YOLO COUNTY AIRPORT. THE 14.17-ACRE PORTION OF THE SITE IS OWNED BY ST. MARY'S COLLEGE AND USED FOR AGRICULTURE.**
HISTORY: **BETWEEN 1942 AND 1943, THE U.S. ACQUIRED 308.57 ACRES BY DECLARATION OF TAKING AND 201.58 ACRES BY TRANSFER FOR USE AS A FLIGHT STRIP TO PROVIDE ALTERNATE BASING FOR B-25 AIRCRAFT NORMALLY BASED AT MCCLELLAN AIR FORCE BASE. IN 1946, THE USE PERMIT FOR 201.58 ACRES WAS RELINQUISHED TO THE PUBLIC ROADS ADMINISTRATION (PRA), AND THE REMAINING 308.57 ACRES WERE TRANSFERRED TO THE WAR ASSETS ADMINISTRATION (WAA). IN 1948, THE WAA TRANSFERRED 294.40 ACRES AND 201.58 ACRES FROM THE PRA TO YOLO COUNTY FOR AN AIRPORT. THE REMAINING 14.17 ACRES REVERTED TO ORIGINAL OWNERSHIP. THERE ARE 16 KNOWN LOCATIONS FOR ORDNANCE STORAGE FACILITIES. UNDERGROUND PIPING AND CONNECTED FILL STANDS AND FUELING PIT BOXES NEED TO BE REMOVED. THIS PROPERTY IS KNOWN OR SUSPECTED TO CONTAIN MILITARY MUNITIONS AND EXPLOSIVES OF CONCERN (E.G., UNEXPLODED ORDNANCE) AND THEREFORE MAY PRESENT AN EXPLOSIVE HAZARD.**
EMS MAP LINK: CLICK HERE

FUDS PROJECT POINT DATA
FFID: **CA99799F530000**
PROPERTY ID: **57762**
PROJECT ID: **01**
ENV SITE ID: **01OEW**
SITE ID: **NOT REPORTED**

MRA ID: **NOT REPORTED**
PROJECT NUMBER: **NOT REPORTED**
PROJECT NAME: **OEW**
PROGRAM: **MMRP**
CATEGORY: **MMRP**
STATUS: **RESPONSE COMPLETE AND SITE CLOSEOUT**
FED LAND TYPE: **NOT REPORTED**
FED LAND NAME: **NOT REPORTED**
FED LAND AGENCY: **NOT REPORTED**
SITE CLOSEOUT DATE: **2013-03-01**
REMEDY IN PLACE DATE: **2008-11-01**
RESPONSE COMPLETE DATE: **2008-11-01**
NPL STATUS CODE: **NOT REPORTED**
CURRENT OWNER: **NOT REPORTED**
ELIGIBILITY: **NOT REPORTED**
HAS PROJECTS: **NOT REPORTED**
FISCAL YEAR: **NOT REPORTED**
EPA REGION: **NOT REPORTED**
CONGRESSIONAL DISTRICT: **NOT REPORTED**
DISTRICT RESPONSIBLE FOR THE FUDS PROPERTY: **NOT REPORTED**
IS THE PROPERTY HAS ANY CLEANUP UNDER THE MILITARY MUNITIONS RESPONSE PROGRAM (MMRP): **NOT REPORTED**
ACREAGE: **16**
DESCRIPTION: **NOT REPORTED**
HISTORY: **NOT REPORTED**
EMS MAP LINK: CLICK HERE

FUDS PROJECT POINT DATA
FFID: **CA99799F530000**
PROPERTY ID: **57762**
PROJECT ID: **02**
ENV SITE ID: **02CON/HTRW**
SITE ID: **NOT REPORTED**
MRA ID: **NOT REPORTED**
PROJECT NUMBER: **NOT REPORTED**
PROJECT NAME: **CON/HTRW**
PROGRAM: **IRP**
CATEGORY: **CON/HTRW**
STATUS: **RESPONSE COMPLETE AND SITE CLOSEOUT**
FED LAND TYPE: **NOT REPORTED**
FED LAND NAME: **NOT REPORTED**
FED LAND AGENCY: **NOT REPORTED**
SITE CLOSEOUT DATE: **2013-09-01**
REMEDY IN PLACE DATE: **2013-09-01**
RESPONSE COMPLETE DATE: **2013-09-01**
NPL STATUS CODE: **NOT REPORTED**
CURRENT OWNER: **NOT REPORTED**

ELIGIBILITY: **NOT REPORTED**
HAS PROJECTS: **NOT REPORTED**
FISCAL YEAR: **NOT REPORTED**
EPA REGION: **NOT REPORTED**
CONGRESSIONAL DISTRICT: **NOT REPORTED**
DISTRICT RESPONSIBLE FOR THE FUDS PROPERTY: **NOT REPORTED**
IS THE PROPERTY HAS ANY CLEANUP UNDER THE MILITARY MUNITIONS RESPONSE PROGRAM (MMRP): **NOT REPORTED**
ACREAGE: **NOT REPORTED**
DESCRIPTION: **NOT REPORTED**
HISTORY: **NOT REPORTED**
EMS MAP LINK: CLICK HERE

FUDS PROJECT POINT DATA
FFID: **CA99799F530000**
PROPERTY ID: **57762**
PROJECT ID: **03**
ENV SITE ID: **03HTRW**
SITE ID: **NOT REPORTED**
MRA ID: **NOT REPORTED**
PROJECT NUMBER: **NOT REPORTED**
PROJECT NAME: **HTRW**
PROGRAM: **IRP**
CATEGORY: **HTRW**
STATUS: **RESPONSE COMPLETE AND SITE CLOSEOUT**
FED LAND TYPE: **NOT REPORTED**
FED LAND NAME: **NOT REPORTED**
FED LAND AGENCY: **NOT REPORTED**
SITE CLOSEOUT DATE: **2016-03-01**
REMEDY IN PLACE DATE: **2016-03-01**
RESPONSE COMPLETE DATE: **2016-03-01**
NPL STATUS CODE: **NOT REPORTED**
CURRENT OWNER: **NOT REPORTED**
ELIGIBILITY: **NOT REPORTED**
HAS PROJECTS: **NOT REPORTED**
FISCAL YEAR: **NOT REPORTED**
EPA REGION: **NOT REPORTED**
CONGRESSIONAL DISTRICT: **NOT REPORTED**
DISTRICT RESPONSIBLE FOR THE FUDS PROPERTY: **NOT REPORTED**
IS THE PROPERTY HAS ANY CLEANUP UNDER THE MILITARY MUNITIONS RESPONSE PROGRAM (MMRP): **NOT REPORTED**
ACREAGE: **NOT REPORTED**
DESCRIPTION: **NOT REPORTED**
HISTORY: **NOT REPORTED**
EMS MAP LINK: CLICK HERE

Back to Report Summary

Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

Database Name	Site ID#	Site Name	Address	City/State/Zip/County
YCLST	2869472358	TEICHERT AGGREGATES	CR 29	DAVIS

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance.

BRS Biennial Reporting System

VERSION DATE: 12/31/15

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 11/26/19

The U.S. Department of Justice ("the Department") provides this information 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. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 02/26/20

This database includes site locations where Engineering and/or Institutional Controls have been identified as part

of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. The data displays remedy component information for Superfund decision documents issued in fiscal years 1982-2017, and it includes final and deleted NPL sites as well as sites with a Superfund Alternative Approach (SAA) agreement in place. The only sites included that are not on the NPL, proposed for NPL, or removed from proposed NPL, are those with an SAA Agreement in place. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ECHOR09 Enforcement and Compliance History Information

VERSION DATE: 10/27/19

The U.S. Environmental Protection Agency's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as Clean Air Act stationary sources, Clean Water Act direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

ERNSCA Emergency Response Notification System

VERSION DATE: 10/06/19

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FRSCA Facility Registry System

VERSION DATE: 10/09/19

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

HMIRSR09 Hazardous Materials Incident Reporting System

VERSION DATE: 11/20/19

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

HWCD Hazardous Waste Compliance Docket Facilities

VERSION DATE: 04/29/19

This list of the Federal Agency Hazardous Waste Compliance Docket Facilities is maintained by the United States Environmental Protection Agency (EPA). According to the EPA, Section 120(c) of CERCLA requires EPA to establish a listing, known as the Federal Facility Hazardous Waste Compliance Docket (Docket), of Federal facilities which are managing or have managed hazardous waste; or have had a release of hazardous waste. Thus, the Docket identifies all Federal facilities that must be evaluated to determine whether they pose a risk to human health and the environment and it makes this information available to the public. In order for the Docket to remain current and accurate it requires periodic updating.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 09/21/19

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 09/22/19

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. This database is provided by the U.S. Environmental Protection Agency.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 06/29/17

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements. Disclaimer: Due to agency regulations and policies, this database contains applicant/licensee location information which may or may not be related to the physical location per MLTS site.

NPDESR09 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES database was collected from the U.S. Environmental Protection Agency (EPA) from December 2002 through April 2007. Refer to the PCS and/or ICIS-NPDES database as source of current data. This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

PADS PCB Activity Database System

VERSION DATE: 10/09/19

PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of Polychlorinated Biphenyls (PCB) who are required to notify the U.S. Environmental Protection Agency of such activities.

PCSR09 Permit Compliance System

VERSION DATE: 08/01/12

The Permit Compliance System is used in tracking enforcement status and permit compliance of facilities controlled by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act and is maintained by the United States Environmental Protection Agency's Office of Compliance. PCS is designed to support the NPDES program at the state, regional, and national levels. This database includes permitted facilities located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa. PCS has been modernized, and no longer exists. National Pollutant Discharge Elimination System (ICIS-NPDES) data can now be found in Integrated Compliance Information System (ICIS).

RCRASC RCRA Sites with Controls

VERSION DATE: 02/21/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with institutional controls in place.

SEMSLIENS SEMS Lien on Property

VERSION DATE: 10/18/19

The U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response, Office of

Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs. This is a listing of SEMS sites with a lien on the property.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency 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. This database contains those CERCLIS sites where the Lien on Property action is complete. Please refer to the SEMSLIENS database as source of current data.

SSTS Section Seven Tracking System

VERSION DATE: 02/01/17

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. ("Production" includes formulation, packaging, repackaging, and relabeling.)

TRI Toxics Release Inventory

VERSION DATE: 12/31/17

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/16

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and

importer site.

RCRAGR09 Resource Conservation & Recovery Act - Generator

VERSION DATE: 12/30/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities currently generating hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

RCRANGR09 Resource Conservation & Recovery Act - Non-Generator

VERSION DATE: 12/30/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities classified as non-generators. Non-Generators do not presently generate hazardous waste. EPA Region 9 includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ALTFUELS Alternative Fueling Stations

VERSION DATE: 09/24/19

Nationwide list of alternative fueling stations made available by the U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Bio-diesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

FEMAUST FEMA Owned Storage Tanks

VERSION DATE: 12/01/16

This is a listing of FEMA owned underground and aboveground storage tank sites. For security reasons, address information is not released to the public according to the U.S. Department of Homeland Security.

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

ICISCLEANERS Integrated Compliance Information System Drycleaners

VERSION DATE: 09/21/19

This is a listing of drycleaner facilities from the Integrated Compliance Information System (ICIS). The U.S. Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments. The following Primary SIC Codes are included in this data: 7211, 7212, 7213, 7215, 7216, 7217, 7218, and/or 7219; the following Primary NAICS Codes are included in this data: 812320, 812331, and/or 812332.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 09/20/19

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

BF Brownfields Management System

VERSION DATE: 10/15/19

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. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

DNPL Delisted National Priorities List

VERSION DATE: 01/27/20

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 12/30/19

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An "open dump" is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 12/30/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities recognized as hazardous waste treatment, storage, and disposal sites (TSD).

SEMS Superfund Enterprise Management System

VERSION DATE: 01/27/20

The U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 01/27/20

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System Archived Site Inventory (List 8R Archived) replaced the CERCLIS NFRAP reporting system in 2015. This listing reflects sites at which the EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program.

SMCRA Surface Mining Control and Reclamation Act Sites

VERSION DATE: 11/26/19

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of Surface Mining Reclamation and Enforcement (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.

USUMTRCA Uranium Mill Tailings Radiation Control Act Sites

VERSION DATE: 03/04/17

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

DOD Department of Defense Sites

VERSION DATE: 12/01/14

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

FUDS Formerly Used Defense Sites

VERSION DATE: 12/31/18

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not all properties currently have polygon data available. DISCLAIMER: This data represents the results of data collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to

insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

FUSRAP Formerly Utilized Sites Remedial Action Program

VERSION DATE: 03/04/17

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 12/30/19

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline, heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPL National Priorities List

VERSION DATE: 01/27/20

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

PNPL Proposed National Priorities List

VERSION DATE: 01/27/20

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 12/30/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with corrective action activity.

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 12/30/19

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities subject to corrective actions.

RODS Record of Decision System

VERSION DATE: 01/27/20

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

CDL Clandestine Drug Labs

VERSION DATE: 12/31/18

The California Department of Toxic Substance Control (DTSC) maintains this listing of illegal drug laboratories. DTSC maintains a limited cost-tracking database to manage and pay appropriate contractor invoices for removal costs. The data source is an expenditure report with the contractors' invoice information and the reported removal action locations. The reported location information may or may not include the actual location of the illegal drug lab for several reasons. First, DTSC receives the location information verbally from law enforcement or local environmental health officials in the initial request for emergency support. Second, DTSC does not verify the information received and does not perform "data cleaning" or other measures to ensure data quality. Third, the location information may not be the actual location of an illegal drug lab or any hazardous substance release to the environment. The initial report may have provided the location of the nearest identifiable address to an illegal drug lab or mobile lab or abandonment of illegal drug lab wastes, or a nearby meeting location for the contractor. Please note the DTSC does not guarantee the accuracy of the address or location information or the condition of the location listed. The listing of an address or 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 address or location either requires or does not require additional cleanup work or mitigation action.

CHMIRS California Hazardous Material Incident Report System

VERSION DATE: 12/24/19

The California Hazardous Material Incident Report System list is maintained by the California Governor's Office of Emergency Services (OES). This list contains all spills called in to the California OES Warning Center for a specific year since 1993.

DTSCDR DTSC Deed Restrictions

VERSION DATE: 12/25/19

The California Department of Toxic Substances Control (DTSC) maintains this listi of sites with deed restrictions. According to the DTSC, restricted land use indicates whether the site or area within the site has an environmental restriction recorded and/or other institutional control preventing certain types of land use or activities. The land use restrictions listed under the site management requirements are only an abbreviated summary of the land use restrictions, and may not encompass all restrictions and notification requirements placed on a property. For complete land use restriction information please contact the DTSC to review associated Land Use Restriction documents.

EMI Emissions Inventory Data

VERSION DATE: 12/31/17

This list of Emissions Inventory Data is maintained by the California Environmental Protection Agency California Environmental Agency Air Resources Board. This list includes criteria pollutant data and toxic data. Please note gas stations, print shops, autobody shops, and dry cleaners are not included in this list.

HWTS Hazardous Waste Tanner Summary

VERSION DATE: 12/31/17

The Hazardous Waste Tanner Summary is maintained by the California Department of Toxic Substances Control (DTSC). This list includes data extracted from the copies of hazardous waste manifests received each year by the DTSC.

LDS Land Disposal Sites

VERSION DATE: 01/02/20

This list of Land Disposal sites (Landfills) is a subset of the GeoTracker Cleanup Sites database, maintained by the California State Water Resources Control Board. Sites are queried from GeoTracker by case type = Land Disposal Site.

LIENS Recorded Environmental Cleanup Liens

VERSION DATE: 11/18/19

The California Department of Toxic Substance Control (DTSC) maintains this list of liens placed upon real properties. A lien is utilized by the DTSC to obtain reimbursement from responsible parties for costs associated with the remediation of contaminated properties.

MCS Military Cleanup Sites

VERSION DATE: 01/02/20

This list of Military sites is a subset of the GeoTracker Cleanup Sites database maintained by the California State Water Resources Control Board. Sites are queried from GeoTracker by case type = Military Cleanup Sites. This list includes : Military UST sites; Military Privatized sites; and Military Cleanup sites (formerly known as DoD non UST).

NPDES National Pollutant Discharge Elimination System Facilities

VERSION DATE: 02/19/20

This list of active, historical, and terminated National Pollutant Discharge Elimination System Facilities permits is maintained by the California Environmental Protection Agency State Water Resources Control Board. This data includes storm water general permit enrollees that are active or have been active within the past three years. Please note there can be multiple listings for a single permit due to multiple dischargers, multiple facilities, and/or multiple address listings. Please use the Regulatory Measure ID to identify duplicates, as this is a unique identifier for each permit.

ABST Above Ground Storage Tanks

VERSION DATE: 03/02/20

This database, provided by the California Environmental Protection Agency's (CalEPA) Regulated Site Portal, contains aboveground petroleum storage tank facilities originating from the California Environmental Reporting System (CERS). These facilities store petroleum in aboveground storage tanks with oversight by local agencies. As of January 1, 2008, Assembly Bill No. 1130 of the Aboveground Petroleum Storage Act (APSA) authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA. CalEPA Data Disclaimer: Information displayed in the portal is collected from separate agency databases and displayed unaltered. Information that is considered confidential, trade secret, or is otherwise protected by the agency that manages the database is not loaded into the portal. For more detail about information displayed in the portal, please visit the data source sites. Please refer to AST2007 database for aboveground storage tank information obtained from the California State Water Resources Control Board prior to 2008 APSA requirements.

AST2007 Aboveground Storage Tanks Prior to January 2008

VERSION DATE: 12/01/07

This database contains aboveground storage tank facilities registered with the California State Water Resources Control Board (SWRCB) between 2007 and 2003. Since 2006, tanks were required to contain a minimum (even as cumulative) of 1320 gallons to be in the program. As of January 1, 2008, the SWRCB no longer maintains a list of registered aboveground storage tanks, due to effective Assembly Bill No. 1130 (Laird) of the Aboveground Petroleum Storage Act (APSA). This Bill authorized the Certified Unified Program Agencies to implement and administer the requirements of the APSA. Please refer to ABST database as a current source for aboveground petroleum storage tank data.

CLEANER Dry Cleaner Facilities

VERSION DATE: 06/13/19

This list of dry cleaners is maintained by the California Department of Toxic Substances Control (DTSC). Data is extracted from the DTSC Hazardous Waste Tracking System. This list includes dry cleaner facilities that have registered EPA identification numbers. These facilities are categorized by SIC codes (7211, 7212, 7213, 7215, 7216, 7217, 7218, 7219). This database may also include facilities other than dry cleaners who also register with these same NAICS Codes. Not all companies report their NAICS/SIC Codes to the DTSC, therefore this database may exclude registered dry cleaner facilities with incomplete classification information.

DTSCHWT DTSC Registered Hazardous Waste Transporters

VERSION DATE: 01/26/20

The California Department of Toxic Substances Control maintains this list of Registered Hazardous Waste Transporters.

HISTUST Historical Underground Storage Tanks

VERSION DATE: 12/31/87

The Hazardous Substance Storage Container Database is a historical list of Underground Storage Tank sites,

compiled from tank survey and registration information collected at one time between 1984 and 1987 by the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials.

MINES Mines Listing

VERSION DATE: 01/20/20

This list includes mine site locations extracted from the Mines Online database, maintained by the California Department of Conservation. Mines Online (MOL) is an interactive web map designed with GIS features that provide information such as the mine name, mine status, commodity sold, location, and other mine specific data. Please note: Mine location information is provided to assist experts in determining the location of mine operators in accordance with California Civil Code section 1103.4 and reflects information reported by mine operators in annual reports provided under Public Resources Code section 2207. While the Division of Mine Reclamation (DMR) attempts to populate MOL with accurate location information, the DMR cannot guarantee the accuracy of operator reported location information.

MWMP California Medical Waste Management Program Facility List

VERSION DATE: 10/04/19

This list of Medical Waste Management Program Facilities is maintained by the California Department of Public Health. The Medical Waste Management Program (MWMP) regulates the generation, handling, storage, treatment, and disposal of medical waste by providing oversight for the implementation of the Medical Waste Management Act (MWMA). The MWMP permits and inspects all medical waste off-site treatment facilities, medical waste transporters, and medical waste transfer stations. This list contains transporters, treatment, and transfer facilities.

SLIC Spills, Leaks, Investigation & Cleanup Recovery Listing

VERSION DATE: 02/12/20

This list of Spills, Leaks, Investigation & Cleanup Recovery sites is maintained by the California Regional Water Quality Control Board (RWQCB). This list all "non-federally owned" sites that are regulated under the State Water Resources Control Board's Site Cleanup Program and/or similar programs conducted by each of the nine Regional Water Quality Control Boards. Cleanup Program Sites are also commonly referred to as "Site Cleanup Program sites". Cleanup Program Sites are varied and include but are not limited to pesticide and fertilizer facilities, rail yards, ports, equipment supply facilities, metals facilities, industrial manufacturing and maintenance sites, dry cleaners, bulk transfer facilities, refineries, mine sites, landfills, RCRA/CERCLA cleanups, and some brownfields. Unauthorized releases detected at Cleanup Program Sites are highly variable and include but are not limited to hydrocarbon solvents, pesticides, perchlorate, nitrate, heavy metals, and petroleum constituents, to name a few.

SWEEPS Statewide Environmental Evaluation and Planning System

VERSION DATE: 10/01/94

The Statewide Environmental Evaluation and Planning System (SWEEPS) contains a historical listing of active and inactive underground storage tank locations from the State Water Resources Control Board. The hazardous substances stored within these tanks includes, but not restricted to, petroleum products, industrial solvents, and other materials. Refer to CUPA listing for source of current data.

USTCUPA Underground Storage Tanks

VERSION DATE: 01/15/20

The California State Water Resources Control Board maintains this list of permitted underground storage tanks. Permitted Underground Storage Tank (UST) Facilities includes facilities at which the owner or operator has been issued a permit to operate one or more USTs by the local permitting agency. Permitted UST Facilities are imported weekly from the California Environmental Reporting System (CERS).

BF Brownfield Sites

VERSION DATE: 02/18/20

This database of Brownfield Memorandum of Agreement (MOA) sites is maintained by the California Environmental Protection Agency. The California Department of Toxic Substances Control (CTSC), the State Water Resources Control Board, and the Regional Water Quality Control Boards (RWQCBs) agreed to a Brownfield Memorandum of Agreement (MOA). The MOA limits the oversight of a brownfields site to one agency, establishes procedures and guidelines for identifying the lead agency, calls for a single uniform site assessment procedure, requires all cleanups to address the requirements of the agencies, defines roles and responsibilities, provides for ample opportunity for public involvement, commits agencies to review time frames, and commits agencies to coordinate and communicate on brownfields issues. The Brownfield MOA site list is obtained from the State Water Resources Control Board GeoTracker online database. This list contains both open and completed sites.

CALSITES CALSITES Database

VERSION DATE: 05/01/04

This historical database was maintained by the Department of Toxic Substance Control for more than a decade. CALSITES contains information on Brownfield properties with confirmed or potential hazardous contamination. In 2006, DTSC introduced EnviroStor as the latest Brownfields site database.

CLEANUPSITES GeoTracker Cleanup Sites

VERSION DATE: 01/02/20

This list of GeoTracker Cleanup Sites is maintained by the California State Water Resources Control Board. The database contains contaminated sites that impact groundwater or have the potential to impact ground water, including sites that require cleanup, such as Leaking Underground Storage Tank Sites, Department of Defense Sites, and Cleanup Program Sites. GeoTracker also contains records for various unregulated projects as well as permitted facilities including: Irrigated Lands, Oil and Gas production, operating Permitted USTs, and Land Disposal Sites. GeoTracker portals retrieve records and view integrated data sets from multiple State Water

Board programs and other agencies.

CORTESE Cortese List

VERSION DATE: 01/13/20

This list of hazardous waste and substances sites (Cortese List) is maintained by the California Department of Toxic Substances Control (DTSC). DTSC's Brownfields and Environmental Restoration Program (Cleanup Program) EnviroStor database provides DTSC's component of Cortese List data by identifying Annual Workplan (now referred to State Response and/or Federal Superfund), and Backlog sites listed under Health and Safety Code section 25356. In addition, DTSC's Cortese List includes Certified with Operation and Maintenance sites. The list, or a site's presence on the list, has bearing on the local permitting process as well as on compliance with the California Environmental Quality Act (CEQA). Because this statute was enacted over twenty years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented and, in some cases, the information to be included in the Cortese List does not exist.

DROP Listing of Certified Dropoff, Collection, and Community Service Programs

VERSION DATE: 12/29/19

This list of Certified Dropoff, Collection, and Community Service Programs (non-buyback) operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

ERAP Expedited Removal Action Program Sites

VERSION DATE: 01/09/20

This list of Expedited Removal Action Program Sites is a subset of the EnviroStor database, maintained by the California Department of the Toxic Substance Control. Sites are queried from Envirostor by site type = State Response ERAP.

HISTCORTESE Historical Cortese List

VERSION DATE: 11/02/02

This historical listing includes hazardous waste and substances sites designated by the State Water Resources Control Board, the Integrated Waste Board, and the Department of Toxic Substance Control. The Cortese List was utilized by the State, local agencies and developers to comply with the California Environmental Quality Act requirements in providing information about the location of hazardous materials release sites. See CACORTESE for an updated version of this database.

LUST Leaking Underground Storage Tanks

VERSION DATE: 01/02/20

This list of leaking underground storage tanks is a subset of the GeoTracker Cleanup Sites database maintained

by the California State Water Resources Control Board. Sites are queried from GeoTracker by case type = LUST Cleanup Site.

NFA No Further Action Determination

VERSION DATE: 09/09/19

This list of No Further Action (NFA) sites is maintained by the California Department of Toxic Substances Control. NFA identifies sites where a Phase I Environmental Assessment was completed and resulted in a no action required determination. Please refer to ENVIROSTOR for current No Further Action sites.

NFE Sites Needing Further Evaluation

VERSION DATE: 03/03/20

This list of Inactive - Needs Evaluation sites is maintained by the California Department of Toxic Substances Control. These are unconfirmed contaminated properties that need further assessment. This data is queried from the Department of Toxic Substances Control Evirostor online database.

PROC Listing of Certified Processors

VERSION DATE: 02/03/20

This list of Certified Processors that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

REF Referred to Another Local or State Agency

VERSION DATE: 03/06/20

This Referred to Another Local or State Agency list, maintained by the California Department of Toxic Substances Control (DTSC), contains properties where contamination has not been confirmed and which were determined as not requiring direct Department of Toxic Substance Control Site Mitigation Program action or oversight. Accordingly, these sites have been referred to another state or local regulatory agency. This data is extracted from the DTSC Envirostor online database and is queried by Status = "Refer state and local agencies".

SWIS Solid Waste Information System Sites

VERSION DATE: 12/30/19

This list of Solid Waste Information System Sites is extracted from the Solid Waste Information System (SWIS) database, maintained by the California Department of Resources Recycling and Recovery. The SWIS database includes information on solid waste facilities, operations, and disposal sites located in California. The types of facilities found in this database include landfills, transfer stations, material recovery facilities, composting sites, transformation facilities, waste tire sites, and closed disposal sites.

SWRCY Recycling Centers

VERSION DATE: 02/05/20

This list of Certified Recycling Centers that are operating under the state of California's Beverage Container Recycling Program is maintained by the California Department of Resources Recycling and Recovery.

VCP Voluntary Cleanup Program

VERSION DATE: 01/09/20

This list of Voluntary Cleanup Sites is a subset of the Envirostor database maintained by the California Department of Toxic Substance Control. Sites are queried from Envirostor by site type = Voluntary Cleanup.

WMUDS Waste Management Unit Database

VERSION DATE: 01/01/00

The Waste Management Unit Database System tracks and inventories waste management units. CCR Title 27 contains criteria stating that Waste Management Units are classified according to their ability to contain wastes. Containment shall be determined by geology, hydrology, topography, climatology, and other factors relating to the ability of the Unit to protect water quality. Water Code Section 13273.1 requires that operators submit a water quality solid waste assessment test (SWAT) report to address leak status. The WMUDS was last updated by the State Water Resources control board in 2000.

ENVIROSTOR EnviroStor Cleanup Sites

VERSION DATE: 01/09/20

This list of Envirostor Cleanup Sites is maintained by the California Department of Toxic Substances Control (DTSC). DTSC has developed the EnviroStor database system to evaluate and track sites with confirmed or potential contamination and sites where further investigation may be necessary. This EnviroStor database of cleanup sites contains the following: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites.

ENVIROSTORPCA EnviroStor Permitted and Corrective Action Sites

VERSION DATE: 01/16/20

The California Department of Toxic Substance Control maintains this list of Hazardous Waste sites in their Envirostor online database. This list contains: 1) data pertaining to the Hazardous Waste Sites tracked in Envirostor; 2) the completed activities for Hazardous Waste Units; 3) the completed activities for Hazardous Waste Units undergoing closure; 4) completed maintenance activities; 5) the various "aliases" for a project (Some examples are: alt project name, alt address, EPA ID, etc.).

TOXPITS Toxic Pits Cleanup Act Sites

VERSION DATE: 07/01/95

Toxic Pits are sites with possible contamination of hazardous substances where cleanup is necessary. This listing is no longer updated by the State Water Resources Control Board.

Environmental Records Definitions - LOCAL

YCUST Yolo County Underground Storage Tanks

VERSION DATE: 10/31/19

This list of active and inactive underground storage tanks in Yolo County is maintained by the Yolo County Environmental Health Department. The Yolo County Environmental Health Department regulates the construction, operation, repair and removal of underground storage tank systems throughout Yolo County.

YCLST Yolo County Leaking Storage Tanks

VERSION DATE: 04/16/08

This list of Leaking Underground Storage Tanks in Yolo County is maintained by the Yolo County Environmental Health Division and the Central Valley Regional Water Quality Control Board. Data from April 2008 was maintained by Yolo County Environmental Health Department and is still available for review, but leaky storage tanks have since been transferred to the State Water Resources Control Board's GeoTracker database system. Please refer to the State CLEANUPSITES and State LUST databases as source of current data for Yolo County Leaking USTs.

Environmental Records Definitions - TRIBAL

USTR09 Underground Storage Tanks On Tribal Lands

VERSION DATE: 10/04/19

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

LUSTR09 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 10/04/19

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 9. This region includes the following states: Arizona, California, Hawaii, Nevada, and the territories of Guam and American Samoa.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

TORRESDUMPSITES Illegal Dump Sites on the Torres Martinez Reservation

VERSION DATE: 10/29/07

This listing of illegal dump site locations on the Torres Martinez Reservation is maintained by the United States Environmental Protection Agency, Region IX. These dump sites contain unlawfully discarded household waste such as landscaping and wood wastes with no known soil or groundwater contamination. A majority of the sites have already been cleaned up through the collaborative efforts of the EPA, The California Integrated Waste Management Board and the Torres Martinez Tribe.

INDIANRES Indian Reservations

VERSION DATE: 01/01/00

The Department of Interior and Bureau of Indian Affairs maintains this database that includes American Indian Reservations, off-reservation trust lands, public domain allotments, Alaska Native Regional Corporations and Recognized State Reservations.

APPENDIX F

NAL Report
Date: April 16, 2020

Asbestos Bridge Inspection/Survey

Bridge Replacement over Union School Slough
38.5679°N, 121.8403°W

County Road 96
Yolo County, CA

Presented to:

Julie Price

Crawford & Associates
1165 Scenic Drive, Suite B
Modesto, CA 95350

Inspection Date:

April 16, 2020

Conducted by:

Roland Plumb
Certified Asbestos Consultant

National Analytical Laboratories, Inc.
2201 Francisco Dr. Ste.140-261
El Dorado Hills, CA 95762
Office: (916) 361-0555 | Fax: (916) 361-0540
E-Mail: NAL1@NAL1.com | Web Page: www.NAL1.com

April 23, 2020

Julie Price
Crawford & Associates
1165 Scenic Drive, Suite B
Modesto, CA 95350

RE: Asbestos Bridge Inspection/Survey –
Bridge Replacement: over Union School Slough
38.5679°N, 121.8403°W
County Road 96
Yolo County

Dear Ms. Price,

This report is in regards to the asbestos bridge inspection conducted at the above location. Of the six (6) suspected asbestos containing samples collected, none (0) were found to contain asbestos. Roland Plumb, Certified Asbestos Consultant for National Analytical Laboratories, Inc. (N.A.L.), conducted the inspection on April 16, 2020. Mr. Plumb returned to site on April 20, 2020 for additional samples.

SUMMARY OF FINDINGS -

The bridge inspection and analytical results indicate that no Asbestos is present in the area that is being renovated.

ASBESTOS INSPECTION –

The inspection was completed according to the EPA's Asbestos Containing Building Materials (ACBM) In-Schools Rule; 40 CFR 763.85 (Inspection and Re-Inspection). Currently, EPA regulations classify ACBM as materials containing more than 1-percent (1%) of asbestos. Cal-OSHA currently regulates asbestos to 1/10th of 1% (0.1%) and requires that a certified asbestos worker conduct this work.

Upon completion of the visual inspection, the suspect asbestos bulk sample materials were collected in accordance with EPA and Cal-OSHA protocol. They were placed into new, airtight, plastic bags, sealed, and identified with unique identification numbers. The bulk samples were transported to the laboratory under the chain of custody protocol for analysis.

Although minor destructive sampling was conducted during the site visit, in the event that demolition work reveals any unforeseen suspect materials or if any future renovation work is to be conducted in other areas at the site; the contractor shall cease all work and contact the contractor for further testing.

EMSL Analytical, Inc. (EMSL) in Carle Place, New York, analyzed the bulk suspect asbestos containing samples utilizing the Polarized Light Microscopy (PLM) Method. National Voluntary Laboratory Accreditation Program (NVLAP) Certification #10148-10 and California Environmental Laboratory Accreditation Program (CAELAP) Certification #2339, certifies EMSL.

Samples taken April 16, 2020 are as follows:

Sample ID#	Material	Location	Results
96-01	White Coating	South West Corner	None Detected
96-02	White Coating	North East Corner	None Detected
96-03	White Coating	South East Cornier	None Detected

Samples taken April 20, 2020 are as follows:

Sample ID#	Material	Location	Results
01	Side Rails Concrete	West Side	None Detected
02	Pier Concrete	East Side Under Bridge	None Detected
03	Abutment Concrete	North Side	None Detected

ASBESTOS CONCLUSION -

No asbestos was detected in the above listed samples/materials, therefore, the contractor, his employees and/or his sub-contractors, can complete their work, in the specific areas tested, without any health or safety concerns in regards to the exposure of airborne asbestos fibers.

Included at the end of this report are the laboratory analytical results, chain of custody form(s) and site map. If you have any questions regarding this report or if we can be of further assistance, please contact our office.

Conducted, reviewed and submitted by:



Roland Plumb
Certified Asbestos Consultant
DOSH# 18-6416



Photograph#:	1
Subject:	East Side Abutment



Photograph#:	2
Subject:	West Side Rail



Photograph#:	3
Subject:	West Rail looking Southwest

Photograph#:	
Subject:	

EMSL Analytical, Inc.

528 Mineola Avenue Carle Place, NY 11514

Tel/Fax: (516) 997-7251 / (516) 997-7528

http://www.EMSL.com / carleplacelab@emsl.com

EMSL Order:	062006474
Customer ID:	NAL51
Customer PO:	
Project ID:	

Attention:	Paula Lee	**Phone:**	(916) 361-0555
	National Analytical Laboratories (NAL)	**Fax:**	(916) 361-0540
	2201 Francisco Dr.	**Received Date:**	04/17/2020 9:55 AM
	Ste. 140-261	**Analysis Date:**	04/17/2020
	El Dorado Hills, CA 95762	**Collected Date:**	04/16/2020

Project: County Road 96 CR 96): Bridge Replacement over Dry Slough, Yolo County, KS 10371, Login #42748

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
96-01 *062006474-0001*	South West Corner - White Coating	Gray/White Non-Fibrous Heterogeneous		25% Ca Carbonate 75% Non-fibrous (Other)	None Detected
96-02 *062006474-0002*	North East Corner - White Coating	Gray/White Non-Fibrous Heterogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected
96-03 *062006474-0003*	South East Corner - White Coating	Gray/White Non-Fibrous Heterogeneous		35% Ca Carbonate 65% Non-fibrous (Other)	None Detected

Analyst(s)

Steve Jusczuk (3)



Daniel Clarke, Asbestos Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from: 04/17/2020 14:55:48

OrderID: 062006474

NAL LOG-IN RECORD

Login # 42748

Ph: 916.361.0555 Fx: 916.361.0540

National Analytical Laboratories, Inc.

Job Site/Job #:

Client#-Lot# 4734 / 55

Crawford & Associates

Phone Number

FAX Number

Contact Julie Price

E-Mail Address

County Road 96 (CR 96):
Bridge Replacement over Dry Slough, Yolo County

KS 10371

Date 4/14/2020

Sampling Date: 4/16/2020

Sampling Time 12:00:00 PM

Type Of Work: PLM-BI

No. of Samples 3

Turnaround: 6 hours

Num.	Sample ID#	Location/Description
1	96-01	South West Corner / White Coating
2	96-02	North East Corner / White Coating
3	96-03	South East Cornier / White Coating

*IF RESULTS ARE LESS THAN 1%, PLEASE 400 POINT COUNT

062006474

RECEIVED
EMSL ANALYTICAL, INC.
CARLE PLACE, NY
20 APR 17 AM 9:55

Chain of Custody Information

Released By Signature	Date/ Time	Received By Signature	Date/ Time	
R Plumb	4/16/20	Michelle DeWitt	4/17/20	Due: 955 AM
Released By Signature	Date/ Time	Received By Signature	Date/ Time	At:

4/17/20 2:24

EMSL Analytical, Inc.

528 Mineola Avenue Carle Place, NY 11514

Tel/Fax: (516) 997-7251 / (516) 997-7528

http://www.EMSL.com / carleplacelab@emsl.com

EMSL Order:	062006519
Customer ID:	NAL51
Customer PO:	
Project ID:	

Attention:	Paula Lee	**Phone:**	(916) 361-0555
	National Analytical Laboratories (NAL)	**Fax:**	(916) 361-0540
	2201 Francisco Dr.	**Received Date:**	04/21/2020 10:20 AM
	Ste. 140-261	**Analysis Date:**	04/21/2020
	El Dorado Hills, CA 95762	**Collected Date:**	04/20/2020
Project:	County Road 96 (CR 96): Bridge Replacement over Union School Slough, Yolo County		

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
01	West Side/Side Rails Concrete	Gray Non-Fibrous Homogeneous		58% Quartz 25% Ca Carbonate 17% Non-fibrous (Other)	None Detected
062006519-0001					
02	East Side Under Bridge/Pier Concrete	Gray Non-Fibrous Homogeneous		57% Quartz 29% Ca Carbonate 14% Non-fibrous (Other)	None Detected
062006519-0002					
03	North Side/Abutment Concrete	Gray Non-Fibrous Homogeneous		58% Quartz 30% Ca Carbonate 12% Non-fibrous (Other)	None Detected
062006519-0003					

Analyst(s)

Carly Ciano (3)

Daniel Clarke, Asbestos Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method"), but augmented with procedures outlined in the 1993 ("final") version of the method. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. All samples received in acceptable condition unless otherwise noted. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. EMSL recommends gravimetric reduction for all non-friable organically bound materials prior to analysis. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339, NYS ELAP 11469

Initial report from: 04/21/2020 12:24:17

OrderID: 062006519

062006519

N·A·L ENVIRONMENTAL TESTING & CONSULTING

NAL LOG-IN RECORD

Login # 42749

Ph: 916.361.0555 Fx: 916.361.0540

National Analytical Laboratories, Inc.

Job Site/Job #:

Client#-Lot#	4734 / 56
Crawford & Associates	
Phone Number	
FAX Number	
Contact	Julie Price
E-Mail Address	

County Road 96 (CR 96):
Bridge Replacement over Union School Slough, Yolo County

KS 10372

Date	4/14/2020
Sampling Date:	4/20/2020
Sampling Time	12:00:00 PM
Type Of Work:	PLM
No. of Samples	3
Turnaround:	6 hours

Num.	Sample ID#	Location/Description
1	01	West Side / Side Rails Concrete
2	02	East Side Under Bridge / Pier Concrete
3	03	North Side / Abutment Concrete

*IF RESULTS ARE LESS THAN 1%, PLEASE 400 POINT COUNT

RECEIVED
EMSL ANALYTICAL, INC.
CARLE PLACE, NY
20 APR 21 AM 10: 20

Chain of Custody Information

Released By Signature	Date/ Time	Received By Signature	Date/ Time	Due:
	4/20/20		4-21-20	
Released By Signature	Date/ Time	Received By Signature	Date/ Time	At:

4/21/20

APPENDIX G

BC Laboratories, Inc. Report
Date: April 13, 2020

Date of Report: 04/13/2020

Steve Carter

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Client Project:	18-474.1 CR96 at Union School Slough
BCL Project:	Soil Samples
BCL Work Order:	2010068
Invoice ID:	B377090

Enclosed are the results of analyses for samples received by the laboratory on 4/7/2020. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Felicia Johnson
Client Service Rep

Stuart Buttram
Technical Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Table of Contents

Sample Information

Chain of Custody and Cooler Receipt form 3
Laboratory / Client Sample Cross Reference 7

Sample Results

2010068-01 - ADL1A
Total Concentrations (TTLC) 9
2010068-02 - ADL1B
Total Concentrations (TTLC) 10
2010068-03 - ADL1C
Total Concentrations (TTLC) 11
2010068-04 - ADL2A
Total Concentrations (TTLC) 12
2010068-05 - ADL2B
Chemical Analysis 13
Total Concentrations (TTLC) 14
2010068-06 - ADL2C
Total Concentrations (TTLC) 15
2010068-07 - ADL3A
Total Concentrations (TTLC) 16
2010068-08 - ADL3B
Total Concentrations (TTLC) 17
2010068-09 - ADL3C
Total Concentrations (TTLC) 18
2010068-10 - ADL4A
Total Concentrations (TTLC) 19
2010068-11 - ADL4B
Total Concentrations (TTLC) 20
2010068-12 - ADL4C
Total Concentrations (TTLC) 21
2010068-13 - Paint1
Total Concentrations (TTLC) 22

Quality Control Reports

Chemical Analysis
Method Blank Analysis 23
Laboratory Control Sample 24
Precision and Accuracy 25
Total Concentrations (TTLC)
Method Blank Analysis 26
Laboratory Control Sample 27
Precision and Accuracy 28

Notes

Notes and Definitions 29

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Chain of Custody and Cooler Receipt Form for 2010068 Page 1 of 4

BC LABORATORIES

4100 Atlas Court Bakersfield, Ca. 93308
(661) 327-4911 • FAX (661) 327-1918 • www.bclabs.com

Chain of Custody

TEMP: _____

ANALYSIS REQUESTED

* Required Fields 20-10068

Client/Company Name *: Crawford & Assoc. Inc.

Report Attention *: Steve Carter

Phone *: 916-813-3778 FAX *:

E-mail: steve.carter@crawford-inc.com

Address *: 1100 Corporate Way #230

City *: Sacramento State *: CA Zip *: 95831

Project Information: 18-474.1 CR96 at Union School Slough

PO #: BCL Quote #:

Carbon Copies: CDHS ☐ Fresno Co ☐ EPA ☐ Merced Co ☐ Tulare Co ☐ Other:

How would you like your completed results sent? ☑ E-Mail ☐ Fax ☐ EDD ☐ Mail Only

Regulatory Compliance Electronic Data Transfer: Y ☐ N ☐ System No. *

Sampler Name Printed / Signature: Steve Carter

QC Request: ☑ STD ☐ Level II

Result Request ** Surcharge: ☑ STD ☐ 5 Day** ☐ 2 Day** ☐ 1 Day**

Matrix Types: RSW = Raw Surface Water CFW = Chlorinated Finished Water CWW = Chlorinated Waste Water BW = Bottled Water RGW = Raw Ground Water FW = Finished Water WW = Waste Water SW = Storm Water DW = Drinking Water SO = Solid

Sample #	# Bottles	Sampled Date	Sampled Time	Sample Description / Location *	Matrix *	Comments / Station Code	Total lead	pH
-1		4/3/20		ADL1A	SO	Homogonize each sample before testing	✓	
-2		4/3/20		ADL1B	SO		✓	
-3		4/3/20		ADL1C	SO		✓	
-4		4/3/20		ADL2A	SO		✓	
-5		4/3/20		ADL2B	SO		✓	✓
-6		4/3/20		ALD2C	SO		✓	
-7		4/3/20		ALD3A	SO		✓	
-8		4/3/20		ADL3B	SO		✓	
-9		4/3/20		ADL3C	SO		✓	
-10		4/3/20		ADL4A	SO		✓	
-11		4/3/20		ADL4B	SO		✓	

CHK BY DISTRIBUTION
WHITE
SUB OUT

Relinquished by: (Signature and Printed Name) Steve Carter — Company: CA Inc — Date: 4/4/20 — Time: 15:30 — Received by: (Signature and Printed Name) Heather Gauer — Company: CA Inc

Relinquished by: (Signature and Printed Name) Heather Gauer — Company: CA Inc — Date: 4/6/20 — Time: 9:00 — Received by: (Signature and Printed Name) [illegible] — Company: BC LAB

Received by: (Signature and Printed Name) Kristin Gonzales — Date: 4/7 — Time: 0905 — Payment Received at Delivery: Date: Amount: Check/Cash/Card PIA # Init:

Shipping Method: CAO UPS GSO WALK-IN SJVC FED EX OTHER

Cooling Method: WET BLUE NONE

Packing Material:

Relinquished by: (Signature and Printed Name) [illegible] — Company: BC LAB — Date: 4.6.2020 — Time: 0930

Chain of Custody and Cooler Receipt Form for 2010068 Page 2 of 4

BC LABORATORIES

4100 Atlas Court Bakersfield, Ca. 93308
(661) 327-4911 • FAX (661) 327-1918 • www.bclabs.com

Chain of Custody

TEMP: _____

* Required Fields 20-10068

Client/Company Name *: Crawford & Assoc. Inc.

Report Attention *: Steve Carter

Phone *: 916-813-3778 FAX *:

E-mail: steve.carter@crawford-inc.com

Address *: 1100 Corporate Way #230

City *: Sacramento State *: CA Zip *: 95831

Project Information: 18-474.1 CR96 at Union School Slough

PO #: BCL Quote #:

Carbon Copies: CDHS ☐ Fresno Co ☐ EPA ☐ Merced Co ☐ Tulare Co ☐ Other:

How would you like your completed results sent? ☑ E-Mail ☐ Fax ☐ EDD ☐ Mail Only

Regulatory Compliance Electronic Data Transfer System No. *: Y ☐ N ☐

Sampler Name Printed / Signature

QC Request: ☑ STD ☐ Level II

Result Request ** Surcharge: ☑ STD ☐ 5 Day** ☐ 2 Day** ☐ 1 Day**

Matrix Types: RSW = Raw Surface Water CFW = Chlorinated Finished Water CWW = Chlorinated Waste Water BW = Bottled Water
RGW = Raw Ground Water FW = Finished Water WW = Waste Water SW = Storm Water DW = Drinking Water SO = Solid

ANALYSIS REQUESTED

Total Pcbs

Sample #	# Bottles	Sampled Date	Sampled Time	Sample Description / Location *	Matrix *	Comments / Station Code
-12		4/3/20		ADL4C	SO	Homogonize before testing
-13		4/3/20		Paint1	SO	

Relinquished by: (Signature and Printed Name) — Company: CAInc — Date: 4/4/20 — Time: 1530 — Received by (Signature and Print Name) — Company: CA Inc

Relinquished by: (Signature and Printed Name) — Company: CAInc — Date: 4/6/20 — Time: 9:00 — Received by (Signature and Print Name) — Company: BC LABS

Received for Lab by: (Signature and Printed Name) — Date: 4/7 — Time: 0900 — Payment Received at Delivery: Date: Amount: Check/Cash/Card PIA #: Init:

Shipping Method: CAO UPS GSO WALK-IN SJVC FED EX OTHER — Cooling Method: WET BLUE NONE — Packing Material:

BCLABS 4/6/2020 1630

Chain of Custody and Cooler Receipt Form for 2010068 Page 3 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Page 1 Of 2

Submission #: 20-10068

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☑ (Specify) GSO	Ice Chest ☐ None ☐ Box ☑ Other ☐ (Specify)	YES ☐ NO ☐ W / S

Refrigerant: Ice ☐ Blue Ice ☐ None ☑ Other ☐ Comments: NO ICE

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: Ziplock Thermometer ID: 214 Date/Time 4/7/20

Temperature: (A) 4.5 °C / (C) 14.5 °C Analyst Init KJG 0905

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG	A	A	A	A	A	A	A	A	A	A
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: GMC Date/Time: 4/7/20 1024

\ = Actual / C = Corrected

Rev 21 05/23/2016

(S:\WPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC rev 20)

Chain of Custody and Cooler Receipt Form for 2010068 Page 4 of 4

BC LABORATORIES INC. COOLER RECEIPT FORM Page 2 Of 2

Submission #: 20-10068

SHIPPING INFORMATION	SHIPPING CONTAINER	FREE LIQUID
Fed Ex ☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ BC Lab Field Service ☐ Other ☑ (Specify) gso	Ice Chest ☐ None ☐ Box ☑ Other ☐ (Specify)	YES ☐ NO ☐ W / S

Refrigerant: Ice ☐ Blue Ice ☐ None ☑ Other ☐ Comments: NO ice

Custody Seals Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.95 Container: Zpack Thermometer ID: 274

Temperature: (A) 14.5 °C / (C) 14.5 °C

Date/Time 4/7/20 0905

Analyst Init KJG

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
10 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
PT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR										
OIL SLEEVE										
CB VIAL										
PLASTIC BAG	A	A	A							
EDLAR BAG										
FERROUS IRON										
ENCORE										
START KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: Date/Time: 4/7/20 1024

A = Actual / C = Corrected

Rev 21 05/23/2016

I:\AWPDocs\WordPerfect\LAB_DOCS\FORMS\SAMREC.rev 201

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2010068-01	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL1A	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-02	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL1B	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-03	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL1C	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-04	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL2A	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-05	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL2B	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-06	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL2C	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-07	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL3A	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2010068-08	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL3B	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-09	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL3C	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-10	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL4A	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-11	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL4B	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-12	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	ADL4C	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil
2010068-13	**COC Number:**	---	**Receive Date:**	04/07/2020 09:05
	Project Number:	---	**Sampling Date:**	04/03/2020 00:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	Paint1	**Lab Matrix:**	Solids
	Sampled By:	Steve Carter	**Sample Type:**	Soil

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-01 | **Client Sample Name:** ADL1A, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.1**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:39	JCC	PE-OP4	0.971	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-02 | **Client Sample Name:** ADL1B, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**7.0**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:40	JCC	PE-OP4	0.980	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-03 | **Client Sample Name:** ADL1C, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.4**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:41	JCC	PE-OP4	0.980	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-04 | **Client Sample Name:** ADL2A, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.3**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:42	JCC	PE-OP4	0.980	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Chemical Analysis

BCL Sample ID: 2010068-05 | **Client Sample Name:** ADL2B, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	**7.54**	**pH Units**	**0.05**	**0.05**	**EPA-9045D**	ND	**pH1:1**	1
pH Measurement Temperature	**20.9**	**C**	**0.1**	**0.1**	**EPA-9045D**	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-9045D	04/13/20 12:00	04/13/20 12:00	RT1	MANUAL	1	B075265	EPA 9045

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-05 | **Client Sample Name:** ADL2B, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**4.8**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:43	JCC	PE-OP4	1	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-06 | **Client Sample Name:** ADL2C, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.2**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:47	JCC	PE-OP4	0.935	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-07 | **Client Sample Name:** ADL3A, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.1**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:28	JCC	PE-OP4	1	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-08 | **Client Sample Name:** ADL3B, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.7**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:48	JCC	PE-OP4	0.935	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-09 | **Client Sample Name:** ADL3C, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3.2**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:50	JCC	PE-OP4	0.926	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-10 | **Client Sample Name:** ADL4A, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**5.4**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:51	JCC	PE-OP4	0.935	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-11 | **Client Sample Name:** ADL4B, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**17**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:52	JCC	PE-OP4	0.980	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-12 | **Client Sample Name:** ADL4C, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**6.9**	**mg/kg**	**2.5**	**0.28**	**EPA-6010B**	1000		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:53	JCC	PE-OP4	0.980	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

BCL Sample ID: 2010068-13 | **Client Sample Name:** Paint1, 4/3/2020 12:00:00AM, Steve Carter

Constituent	Result	Units	PQL	MDL	Method	TTLC Limits	Lab Quals	Run #
Lead	**3800**	**mg/kg**	**12**	**1.4**	**EPA-6010B**	1000	**A07**	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	04/08/20 16:20	04/09/20 09:54	JCC	PE-OP4	5	B074955	EPA 3050B

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Chemical Analysis

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B075265						
pH	B075265-BLK1	ND	pH Units	0.05	0.05	
pH Measurement Temperature	B075265-BLK1	ND	C	0.1	0.1	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Chemical Analysis

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B075265										
pH	B075265-BS1	LCS	4.0320	4.0000	pH Units	101		95 - 105		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Chemical Analysis

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B075265	Used client sample: N										
pH	DUP	2010067-05	7.1790	7.1940		pH Units	0.2		20		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B074955						
Lead	B074955-BLK1	ND	mg/kg	2.5	0.28	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: B074955										
Lead	B074955-BS1	LCS	97.207	100.00	mg/kg	97.2		75 - 125		

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: B074955	Used client sample: Y - Description: ADL3A, 04/03/2020 00:00										
Lead	DUP	2010068-07	5.1355	5.6327		mg/kg	9.2		20		
	MS	2010068-07	5.1355	82.483	100.00	mg/kg		77.3		75 - 125	
	MSD	2010068-07	5.1355	85.049	100.00	mg/kg	3.1	79.9	20	75 - 125	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Crawford & Associates, Inc.
1100 Corporate Way, Suite 230
Sacramento, CA 95831

Reported: 04/13/2020 13:49
Project: Soil Samples
Project Number: 18-474.1 CR96 at Union School Slough
Project Manager: Steve Carter

Notes And Definitions

MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
pH1:1	pH result reported on a 1:1 dilution of sample

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.
All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

APPENDIX H

Caltrans Unknown Hazards Procedure

Figure 7-1.1. Unknown Hazards Procedure

