

Whittle Ranch Crossings of Hoods Creek Project

STANISLAUS COUNTY, CALIFORNIA

Draft Initial Study with Proposed Mitigated Negative Declaration



**Prepared by:
Stockton East Water District**



6767 East Main Street
Stockton, CA 95215
September 2019

NOTICE OF INTENT

TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE PROPOSED WHITTLE RANCH CROSSINGS OF HOODS CREEK PROJECT

Notice is Hereby Given that that an Initial Study/Mitigated Negative Declaration (IS/MND) is available for public review for the Whittle Ranch Crossings of Hoods Creek project described below pursuant to the provisions of the California Environmental Quality Act of 1970 (Public Resources Code 21100, et seq.)

Project Description and Location

Stockton East Water District (District or SEWD) is proposing to construct three (3) crossings over Hoods Creek for the Whittle family and/Whittle Ranch, Inc. (collectively Whittles). The properties are privately owned by the Whittles. The constructed facilities will install low water culvert crossings consist of precast box culverts with foundations. All crossings will be up to 24 feet wide and have lengths of 65 feet long, 70 feet long, and 89 feet long. Each crossing will arrive on site as multiple precast box culvert section, each approximately 6 feet long. The full crossing width and length will be accomplished by securing multiple sections of precast box culverts together and adjacent to each other.

The proposed project is located in the northeast area of Stanislaus County, south of Highway 4 and east of Milton Road, near the town of Eugene.

Document Review and Availability

The public comment period will extend from September 12, 2019 to October 14, 2019. Copies of the IS/MND are available for public review at the Stockton East Water District, 6767 East Main Street, Stockton, CA 95215, 8:00 AM to 5:00 PM, Monday through Friday.

This IS/MND can also be reviewed and/or downloaded from the Stockton East Water District website at the following link: www.sewd.net.

During the public review period written comments on the IS/MND may be provided to:

Justin Hopkins, District Engineer
Stockton East Water District
6767 East Main Street
Stockton, CA 95215
209.444.3150
jhopkins@sewd.net

PROPOSED MITIGATED NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

1. Project Name: *Whittle's Ranch Crossings of Hoods Creek*

2. Description of Project: Stockton East Water District (District or SEWD) is proposing to construct three (3) crossings over Hoods Creek for the Whittle family and/Whittle Ranch, Inc. (collectively Whittles). The properties are privately owned by the Whittles. The constructed facilities will install low water culvert crossings consist of precast box culverts with foundations. All crossings will be up to 24 feet wide and have lengths of 65 feet long, 70 feet long, and 89 feet long. Each crossing will arrive on site as multiple precast box culvert section, each approximately 6 feet long. The full crossing width and length will be accomplished by securing multiple sections of precast box culverts together and adjacent to each other.

3. Project Location: The proposed project is located in the northeast area of Stanislaus County, south of Highway 4 and east of Milton Road, near the town of Eugene.

4. Date: September 12, 2019

5. Lead Agency: Stockton East Water District

6. Name and Address of Applicant: Stockton East Water District
6767 East Main Street
Stockton, CA 95215

7. Contact Person: Justin Hopkins, District Engineer, 209.444.3150

8. Declaration:

Stockton East Water District has determined that there is no substantial evidence that the above project, as mitigated, may have a significant effect on the environment and proposes that a Mitigated Negative Declaration be adopted. The determination is based on the attached Initial Study and the following finds:

- a) *The project will not degrade environmental quality, substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, reduce the number or restrict the range of special-status species, or eliminate important examples of California history or prehistory.*
- b) *The project does not have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.*

- c) *The project will not have impacts that are individually limited, but cumulatively considerable.*
- d) *The project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.*
- e) *No substantial evidence exists that the project will have a negative or adverse effect on the environment.*
- f) *The project incorporates all applicable mitigation measures identified in the Initial Study.*
- g) *This Mitigated Negative Declaration reflects the independent judgment of the lead agency.*

Written comments on the Initial Study and proposed Mitigated Negative Declaration shall be submitted no later than 5 PM on October 14, 2019.

Submit comments:

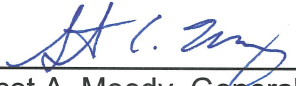
Justin Hopkins,
District Engineer
Stockton East Water District
6767 East Main Street
Stockton, CA 95215

Posting Period:

September 12, 2019 to October 14, 2019

Initial Study approved by:

Dated: 9/10/19



Scot A. Moody, General Manager
Stockton East Water District

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Appendix A – BIOLOGICAL RESOURCES TECHNICAL REPORT

Appendix B – CULTURAL RESOURCES TECHNICAL REPORT

1. INTRODUCTION

This Initial Study and Mitigated Negative Declaration (IS/MND) evaluates the environmental effects of the proposed Whittle Ranch Crossings of Hoods Creek Project. The proposed project is to provide the Whittle family and Whittle Ranch, Inc. access to land severed by the Stockton East Water District's (District's) New Melones Conveyance project. The constructed facilities will install low water culvert crossings.

This IS/MND was prepared to satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 et seq.) and State CEQA Guidelines (14 California Codes of Regulations [CCR] 15000 et seq.). Stockton East Water District (District or SEWD) is the lead agency for this proposed Project under CEQA.

1.1 Purpose Of This Document

CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. An MND, which requires inclusion of an IS, is a public document used by the decision-making lead agency to determine whether a project may have a significant adverse impact on the environment. If the agency finds that the proposed Project may have a significant adverse impact on the environment, but that the impacts will be clearly reduced to a less-than-significant level through implementation of specific mitigation measures, a MND shall be prepared.

This IS/MND is a public information document that describes the proposed Project, existing environmental setting at the Project site, and potential environmental impacts of construction and operation of the proposed Project. It is intended to inform the public and decision-makers of the proposed Project's compliance with CEQA and State CEQA Guidelines.

1.2 Tiering

CEQA allows for the preparation of environmental documents using a multilevel approach whereby a broad level EIR, termed a "program EIR," includes an analysis of general matters (e.g., the impacts of an entire plan, program, or policy), and subsequent project-level EIRs or negative declarations include analyses of the project-specific effects of projects within the program (State CEQA Guidelines Section 15168). State CEQA Guidelines Section 15168 describes the process of tiering from a program EIR, in which CEQA documents that follow a program EIR incorporate by reference and rely on the general discussions, program-wide analyses, and program-level mitigation measures from the broader EIR, and focus on the site-specific impacts of the individual projects that implement the plan, program, or policy.

1.3 Review Process

This IS/MND is being circulated for public and agency review as required by CEQA. Because state agencies will act as responsible or trustee agencies, the District will circulate the IS/MND to the State Clearinghouse of the Governor's Office of Planning and Research for distribution and a 30-day review period. A copy of the CEQA IS/MND is also available for review on the District's website: www.sewd.net.

During the review period, written comments may be submitted to:

Justin Hopkins
District Engineer
Stockton East Water District
6767 East Main Street
Stockton, CA 95215
jhopkins@sewd.net

After comments are received from the public and reviewing agencies during the public comment period, the District may (1) adopt the Mitigated Negative Declaration and approve the proposed Project; (2) undertake additional environmental studies; or (3) disapprove the Project. If the Project is approved, the District may proceed with detailed design and construction.

1.4 Document Organization

This IS/MND is organized as follows:

Chapter 1: Introduction. This chapter provides an introduction to the environmental review process, and describes the purpose and organization of this document.

Chapter 2: Project Description. This chapter provides a detailed description of the project and required permits and approvals.

Chapter 3: Environmental Checklist. This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if Project actions would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this Project, however, none of the impacts were determined to be significant.

1.5 Environmental Factors Potentially Affected

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

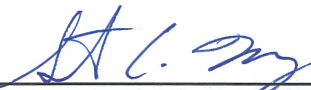
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|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service System | <input type="checkbox"/> Mandatory Findings of Significance | |

1.6 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 revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the propose project MAY have a significant effect on the environment and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions of mitigation measures that are imposed upon the project, nothing further is required.

By:


 Scot A. Moody, General Manager
 Stockton East Water District

9/10/19
 Date

2. PROJECT DESCRIPTION

This chapter provides a detailed location, description of the project, and required permits and approvals.

2.1 Project Location

The proposed project is located in the northeast area of Stanislaus County, south of Highway 4 and east of Milton Road, near the town of Eugene, as shown in Figure 1. Specifically the parcels are located in the southeast quarter of Section 21, the southwest quarter of Section 22, and northwest quarter of Section 27, Township 1 North, Range 10 East, Mount Diablo Base and Meridian. Figure 2 shows the parcels with their assessor's parcel numbers.

2.2 Project Description

The project will construct three (3) low water culvert crossings of Hoods Creek to provide the Whittles, access to lands severed by the District's New Melones Conveyance System. The properties are privately owned by the Whittle family and/or Whittle Ranch, Inc. (Whittles). The constructed facilities will install low water culvert crossings consist of precast box culverts with foundations, as shown in Figure 3. The crossings will be precast 8' span by 6' rise box culverts. One crossing will be 65 feet long, one crossing will be 70 feet long and the third crossing will be 89'-0 feet long. All crossing will be up to 24-feet wide. Each crossing will arrive on site as multiple precast box culvert section, each approximately 6 feet long. The full crossing width and length will be accomplished by securing multiple sections of precast box culverts together and adjacent to each other. The stream bed will be excavated approximately 4 feet below existing channel invert. A compacted 2-foot depth foundation of aggregate base rock will be installed upon which the culvert sections will be placed. The culverts will be backfilled to depth of 18-24 inches with the excavated streambed material. 6 inch concrete curbs will installed on the top surface, along the upstream and downstream edges of the culverts Concrete wing walls approximately 8 feet tall by 8 feet wide will be constructed at the approaches to retain the side slopes of the approach roads. Rock slope protection will be placed around each abutment to protect against erosion. Compacted road base will be added in the approach areas leading in and out of the crossings.

The crossings will accommodate a flow of 550 cubic feet per second (cfs) and flows above 550 cfs will be over the crossings. All Crossings will allow for HS-20 vehicle loads as defined by The American Association of State Highway and Transportation Officials (AASHTO). AASHTO defines HS-20 loading as a tractor truck with semi-trailer.

The tractor truck front axle weight is 8,000 pounds, with the rear two axle weights being 32,000 pounds each.

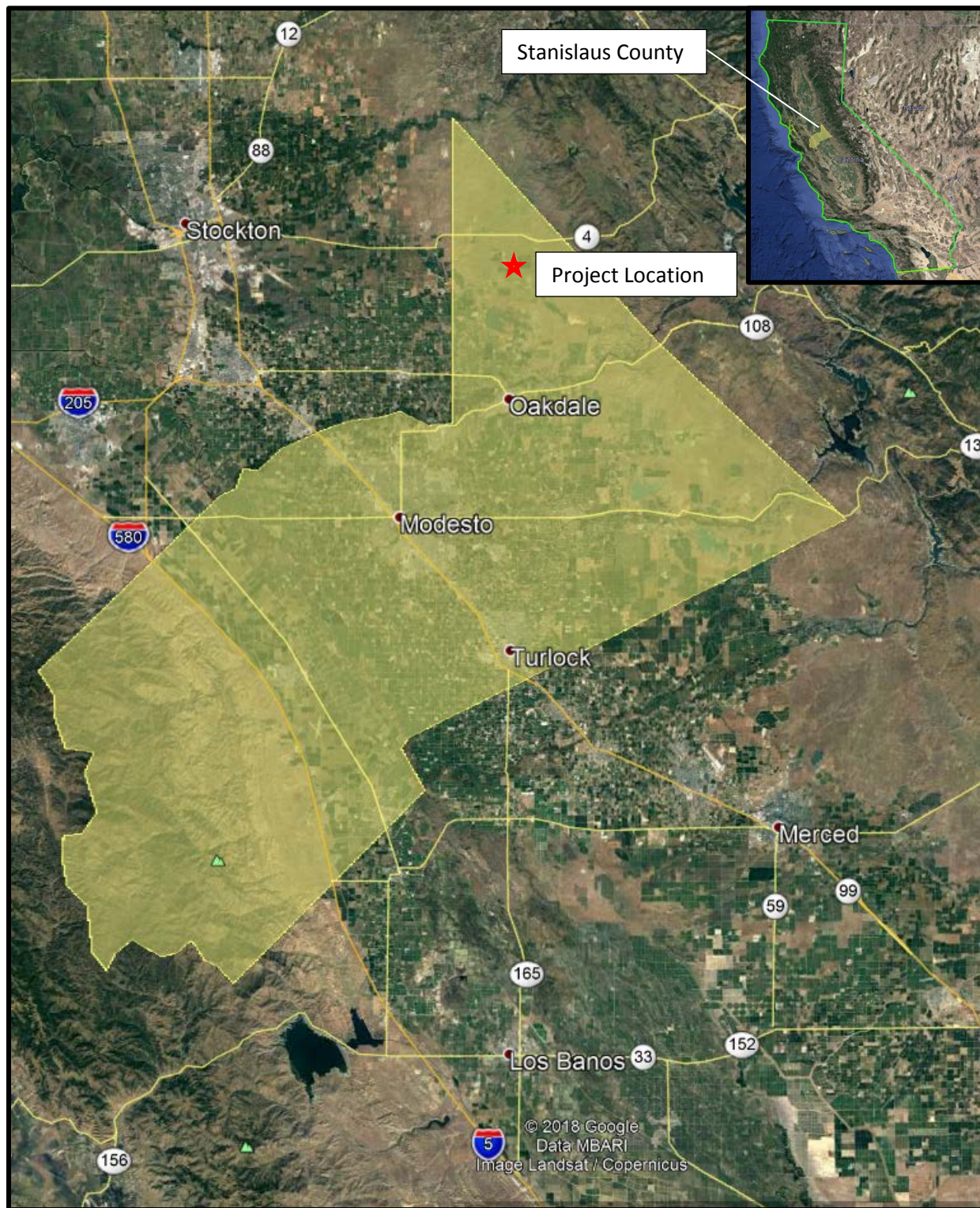


FIGURE 1
Project Vicinity
Whittle Ranch Crossings of Hoods Creek Project
Stanislaus County, CA

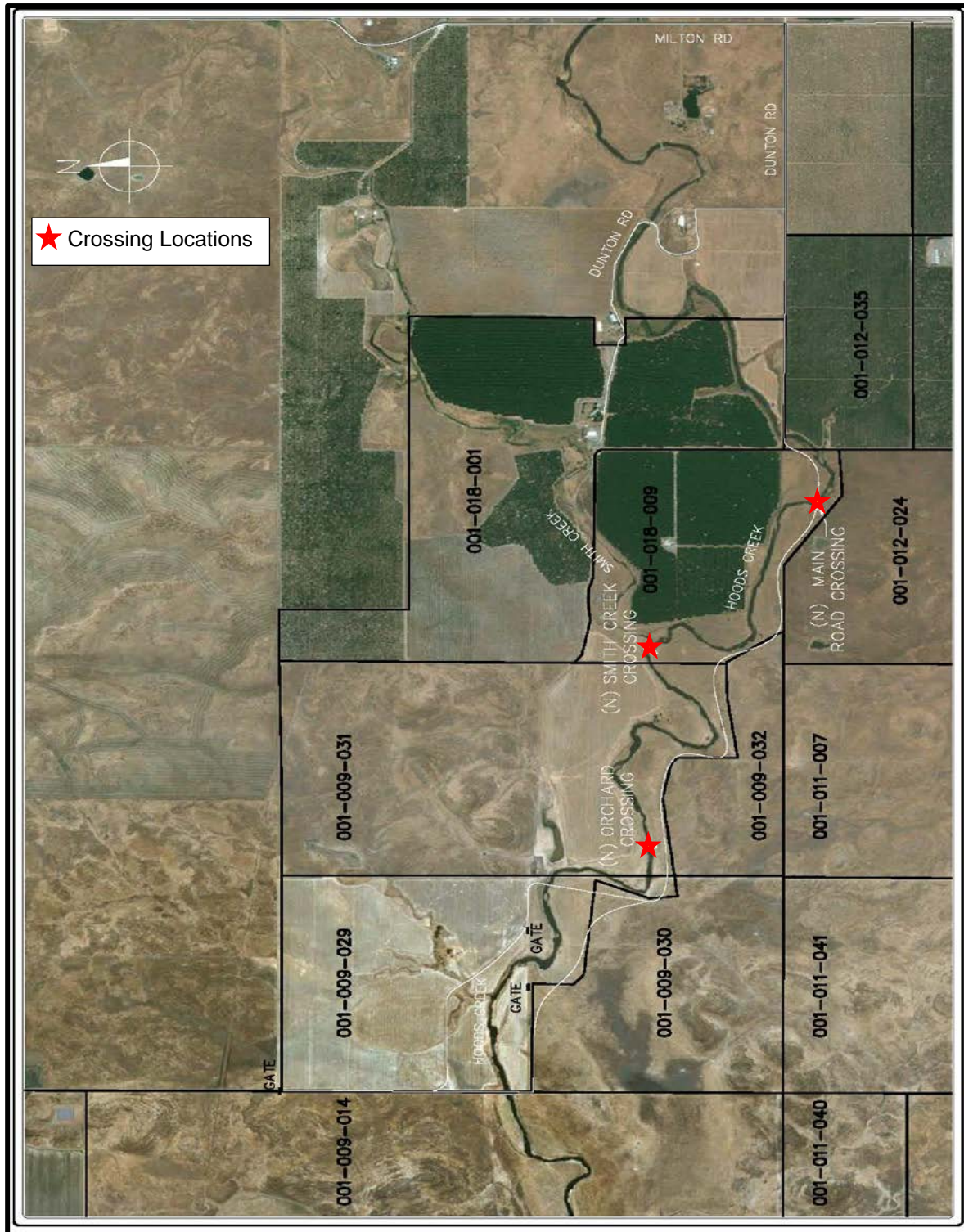


FIGURE 2
 Project Locations
 Whittle Ranch Crossings of Hoods Creek Project
 Stanislaus County, CA

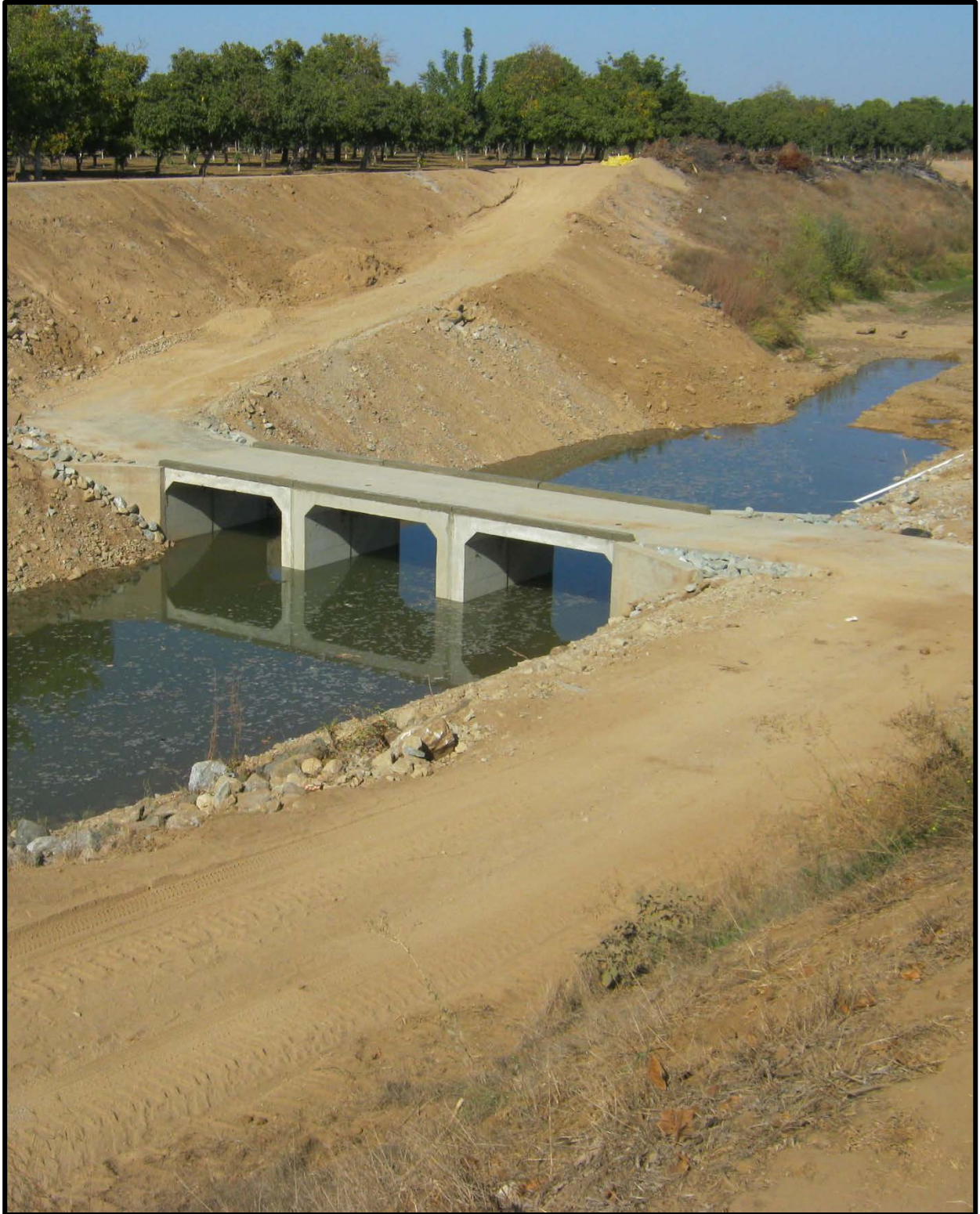


FIGURE 3
Low Water Culvert Crossing Example
Whittle Ranch Crossings of Hoods Creek Project
Stanislaus County, CA

2.3 Required Permits And Project Approvals

As the lead agency pursuant to CEQA, SEWD is responsible for considering the adequacy of the IS and determining if the project should be approved.

If approved, elements of the project would be subject to permitting and/or approval authority of other agencies included in the following table:

AGENCY	ACTIVITY	ENTITLEMENT
Federal		
U.S. Army Corps of Engineers	Required for placement of fill into waters of the United States	Section 404 – Nationwide Permit Authorization
State		
California Department of Fish and Wildlife	Work in waters of the State	Section 1600 of the California Fish and Game Code – Lake and Streambed Alteration Agreement
Central Valley Regional Water Quality Control Board	Water quality certification required under to support the Section 404 Nationwide Permit Authorization	Section 401 – Water Quality Certification

3. ENVIRONMENTAL CHECKLIST

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

I. Aesthetics: Would the Project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime view in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **No Impact.** There are no known scenic vistas within the vicinity of the project.
- b) **No Impact.** The project will not require the removal of any trees. Additionally, there are no historic buildings within or adjacent to the project area.
- c) **Less than significant impact.** The existing visual character would change after the installation of the crossings, but the new crossings would not degrade the existing visual character as three (3) existing crossings are located within the near vicinity.
- d) **No Impact.** No additional lighting would be required as a result of the proposed project. Construction of the crossings would only take place during daylight hours.

Mitigation Measures

None.

II. Agriculture and Forest 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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:	Potentially Significant Impact	Less Than Significant Impact 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **No Impact.** The project will not result in agricultural lands be converted to non-agricultural use.
- b) **No Impact.** The project does not conflict with existing zoning or Williamson Act contracts.
- c) **No Impact.** The project does not conflict with zoning for forest land.
- d) **No Impact.** The project will not result in loss or conversion of forest land.
- e) **No Impact.** No, the project actually fosters the continued, existing agricultural use of the land.

Mitigation Measures

None.

III. Air Quality: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a,b) Less than Significant with Mitigation. The proposed project is located in the portion of Stanislaus County that is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (APCD). Fugitive dust may potentially be generated from the excavation and movement of construction equipment along the unpaved access road on the project site. Adherence to best management practices, as recommended by the San Joaquin Valley APCD and described below would be implemented to minimize temporary impacts to air quality.

- All disturbed areas, including storage piles, which are not being actively utilized for construction purposes, shall be effectively stabilized of dust emissions using water.
- All on-site unpaved roads and off-site unpaved access roads shall be effectively stabilized of dust emissions using.
- All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities shall be effectively controlled of fugitive dust emissions utilizing application of water or by presoaking.

- Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, said piles shall be effectively stabilized of fugitive dust emissions utilizing water.
 - Traffic speeds on unpaved roads shall be limited to 10 miles per hour.
- c) **Less than Significant.** All construction impacts to air quality would be short-term and intermittent; therefore impacts are anticipated to be less than significant. The emission of pollutants during construction would not contribute significantly to a net increase of any criteria pollutant. No long-term, operational impacts are anticipated.
- d) **Less than Significant.** The project site is located within an agricultural area. The closest sensitive receptors are residences located 0.5 miles northeast of the project site; the short-term and intermittent emissions are anticipated to be less than significant at the residences. The project would not result in substantial, long-term quantities of pollutant concentrations that would affect the surrounding rural residents.
- e) **No Impact.** The project site is located within an agricultural area and would not produce sufficient quantities of objectionable odors during construction that would affect the surrounding rural residents.

Mitigation Measures

None.

IV. Biological Resources: Would the project:	Potentially Significant Impact	Less Than Significant Impact 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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- a) **Less than Significant.** A Biological Technical Report was prepared in 2019 and serves as a basis for much of this section (Appendix A). A search of USFWS, CDFW, CNPS, and NMFS databases indicated one (1) special-status wildlife species, the American Badger, and no special-status plant species have the potential to occur with the biological survey area.

Although no special-status plant species were detected during the biological survey, the below listed best management practices will further minimize and avoid potential impacts to native plant species and the existing plant communities within the BSA.

- Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds.
- Should a special-status plant species be observed within or immediately adjacent to the Project area, Environmentally Sensitive Area (ESA) fencing (orange construction barrier fencing) will be installed around special-status plant populations.

Special Status Species Discussion

American Badger

The American badger is a CDFW species of special concern inhabiting most of the U.S. and is most commonly found in northern coastal areas within shrub, forest and herbaceous habitat with friable soils. Badgers live in burrows dug in relatively dry, often sandy, soil, usually in areas with sparse overstory cover. The diet consists of fossorial rodents and occasionally reptiles, insects and birds. Badgers mate in the summer and early fall and typically produce an average litter of 2-3 offspring (Ahlborn 2019). The species is uncommon in California and is most affected by traps and poisons used for predator control.

During the biological surveys conducted on April 18, 2019, one American badger was observed entering a burrow in the western portion of the Project area, near the Orchard crossing. There are a series of burrows along an embankment on the north side of Shirley-Hoods Creek, as well as a few scattered burrows throughout the BSA. Additionally, the disturbed grassland habitat provides suitable upland habitat for the species. Although, there are no CNDDDB documented occurrences

within a 10-mile radius of the Project area, the species is presumed present due to the sighting of the individual during the biological survey.

Due to the fact the species was detected during biological surveys adjacent the Orchard crossing Project location and several borrows were found near the three proposed Project locations, the species is presumed to have potential to be present throughout the BSA. Construction activities are anticipated to have temporary and permanent impacts to upland habitat for the species. Approximately, 0.56 acres of grassland habitat is anticipated to be temporary impacted from construction access and equipment staging. Temporary effects that result from construction access areas outside of permanent effects will be re-contoured to preconstruction conditions and re-vegetated after construction. Approximately, 1.7 acres are anticipated to be permanently impacted from the proposed Project. Permanent impacts will be the result from bridge abutments and from the creation of the access roads to the proposed crossings. The proposed Project will avoid impacts to the American badger habitat and individuals to the greatest extent practicable by implementing mitigation measures BIO-01 and BIO-02. The below, additional best management practices will also be implemented to minimize or avoid potential impacts:

- Equipment and other vehicles within the Project area shall not exceed 10 miles per hour to allow wildlife enough time to escape construction related activities.
- All food-related trash will be disposed into closed containers and removed from the Project area daily. Construction personnel must not feed or otherwise attract wildlife to the Project area.

Migratory Birds

Native birds are protected by the MBTA and CFG Code Section 3513. To minimize potential impacts to migratory birds, mitigation measure BIO-03 will be incorporated throughout Project construction.

- b) No Impact.** The biological field survey conducted on April 18, 2019, by Dokken Engineering found no riparian habitat or other sensitive natural communities within the biological survey area. Although no sensitive habitat exists, BMPs will be incorporated into Project design and Project management to minimize impacts on the environment including erosion and the release of pollutants (e.g. oils, fuels):

- Exposed soils and material stockpiles would be stabilized, through watering or other measures, to prevent the movement of dust at the Project site caused by wind and construction activities such as traffic and grading activities;

- All construction roadway areas would be properly protected to prevent excess erosion, sedimentation, and water pollution;
- All vehicle and equipment fueling/maintenance would be conducted outside of any surface waters;
- Equipment used in and around jurisdictional waters must be in good working order and free of dripping or leaking contaminants;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering jurisdictional waters;
- All erosion control measures and storm water control measures would be properly maintained until the site has returned to a pre-construction state;
- All disturbed areas would be restored to pre-construction contours and revegetated,; and,
- All excess construction materials brought to the site will be hauled off-site after completion of construction.

- c) **Less than Significant Impact with Mitigation.** One wetland feature was delineated in the western portion of the biological survey area (BSA), approximately 60 feet from the Orchard crossing. The wetland feature is approximately <0.01 acre (<1%) of the BSA. The wetland feature is outside of the proposed construction impact area, the proposed Project will avoid the wetland feature entirely, and the wetland will be fenced off per avoidance measure BIO-04; therefore, no temporarily or permanently impacts are anticipated to occur to the wetland present within the BSA.
- d) **No Impact.** The project limits are absent of essential fish habitat and no threatened or endangered State listed species have the potential to occur within the biological survey area. Therefore the project will have no impacts to native resident or migratory fish or wildlife. Although no fish habitat exists, upon completion of construction activities, any barriers to surface water flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate.
- e) **No Impact.** The project area is not included within any tree preservation policies or ordinances.
- f) **No Impact.** The project is not located within a Habitat Conservation Plan or Natural Community Conservation Plan.

Mitigation Measures

BIO-01: Every individual working on the Project must attend a biological awareness training session delivered by a qualified biologist. This training program shall include information regarding sensitive habitats, special-status species and the importance of avoiding impacts to these species and their habitat.

BIO-02: No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist will conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If the qualified biologist determines that dens may be active, the entrances of the dens will be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to Project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3 to 5-day period. After the qualified biologist determines that badgers have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.

BIO-03: If vegetation removal is to take place during the nesting season (February 1–August 31), a pre-construction nesting bird survey must be conducted within 7 days prior to the start of construction. A minimum 100-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300-foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged

BIO-04: Prior to the start of construction activities, the Project limits in proximity to Shirley-Hoods Creek and the wetland will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters or any other biologically sensitive resources detected during preconstruction surveys.

V. Cultural Resources: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a,b) Less than Significant Impact with Mitigation. The April 18, 2019, pedestrian ground surface inventory survey performed by Dokken Engineering did not identify any archaeological sites, features, or artifacts. The ground surface throughout the site was covered with grasses that reduced surface visibility to approximately 20 percent or less. Areas where the grass had been removed or had died were thoroughly inspected and did offer over 80 percent surface visibility. Material suitable for stone tool manufacturing was observed; however, no definitive artifacts were located. Modern resources noted and not discussed in this document include nails, threaded bolts, fencing, and modern trash.

During the subsurface testing on May 8, 2019, a large green stone flake was observed on the surface within the orchard area to the south of the Smith Creek crossing. This flake was in a disturbed context and was located outside the site. The subsurface testing revealed three positive shovel tests, one from the Smith Creek crossing location and two from the Main crossing location. The two tests at the Orchard crossing location were negative for cultural material. The tests at the Smith Creek crossing revealed one positive test and two negative tests. The positive test revealed one whiteware fragment from approximately 40cm below ground surface and two greenstone flakes from approximately 50cm below ground surface. The two tests at the Main crossing were dug on the banks of the existing low water crossing road, the northern test revealed one small fine grain basalt flake and the southern test revealed one larger green stone fragment that appears to exhibit unifacial flaking.

As no cultural resources were observed during the course of the survey, there are no historic properties documented within the site. However, based on the high

buried site sensitivity, it is possible the Project could encounter buried cultural resources, which would then require evaluation. If those resources are found to be eligible for the NRHP, then the project could have an adverse effect on historic properties. To minimize potential impacts to cultural or historical resources, mitigation measure CR-01 will be incorporated throughout Project construction. Mitigation measure CR-02 will be implemented prior to project construction.

- c) **No Impact.** The project site does not contain any unique paleontological resources or geologic features.
- d) **Less than Significant Impact.** Disturbance to human remains, including those interred outside of formal cemeteries, is not anticipated. In adherence to best management practices related to disturbance of human remains, the District will follow the minimization measures included within the Tribal Cultural Resource section.

Mitigation Measures

CR-01: If previously unidentified historical or cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources, if necessary.

CR-02: Prior to project construction, the District shall perform cultural sensitivity training for all employees, contractors, consultants, volunteers, or other District representatives that will be present during construction. The cultural sensitivity training shall be administered by a qualified archaeologist.

VI. Tribal Cultural Resources: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change to a listed or eligible for listing resource 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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Cause a substantial adverse change to a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1.?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a-c) Less than Significant Impact. The project area was defined to encompass permanent project features and areas of potential ground disturbance during construction.

Tribal cultural resource (TCR) identification efforts were conducted to determine whether a TCR, as defined by PRC § 21074(a), would be impacted by the project. These efforts include background research, a search of site records and survey reports on file at the Central California Information Center (CCIC) at Stanislaus State University, efforts to coordinate with Native American representatives, consultation with the Native American Heritage Commission (NAHC) and a pedestrian ground surface inventory. The project area was defined to encompass

permanent project features and areas of potential ground disturbance during construction.

The CCIC identified no previously recorded cultural resources within the PAL, but four prehistoric resources immediately adjacent to the PAL as well as four additional prehistoric cultural resources within 1 mile of the PAL. These eight prehistoric resources were recorded in the late 1940s and early 1950s and consist of campsites and resource procurement sites for the Native Americans. While none of these previously recorded resources would be impacted by the proposed project, it does suggest that the PAL has a high probability for containing additional cultural resources.

An archaeological pedestrian ground surface inventory survey was conducted by Dokken Engineering Archaeologist Brian S. Marks, Ph.D. on April 18, 2019 for the purpose of identifying and recording archaeological resources. Subsurface testing by Dr. Marks and archaeologist Michelle Campbell on May 8, 2019 revealed prehistoric flake debitage at two of the crossings. While material was found at the two eastern crossings (Main crossing), the two flakes at each crossing constitute a pair of isolated finds.

On March 29, 2019, the District sent letters inviting tribal consultation, as required by the AB-52 process. Letters were sent to the following contacts:

- Antonio Ruiz Jr. (Cultural Resources Officer of the Wilton Rancheria)
- Michael Mirelez (Cultural Resource Coordinator of the Torres Martinez Desert Cahuilla Indians)
- Mike DeSpain (THPO/Consultation/CMT Assistance of the Buena Vista Rancheria)

The District received no responses from the Torres Martinez Desert Cahuilla Indians or the Buena Vista Rancheria. The Wilton Rancheria requested a Global Information System (GIS) file of the project boundaries and a copy of the Cultural Resources Inventory Report, which were provided electronically by the District on April 2, 2019, and July 5, 2019, respectively. The District resent all of the information again on August 8, 2019, to an additional contact with the Wilton Rancheria. The District attempted to contact the Wilton Rancheria on July 10, July 18, August 8, August 13, and August 23, of 2019, regarding consultation. To date, the District has not received any further requests or correspondence from the Wilton Rancheria.

With adherence to Standard Best Management Practices and/or Minimization Measures as described below, impacts to TCRs would be less than significant.

Standard Best Management Practices and/or Minimization Measures

- Should buried, unforeseen archaeological deposits be encountered during any construction activity, work would cease within a 20-foot radius of the discovery.

In accordance with 36 CFR Part 800.13, a qualified archaeologist would be notified to document the discovery, assess its significance, and recommend treatment.

- In the event that human remains or any associated funerary artifacts are discovered during construction, all work would cease within the immediate vicinity of the discovery. In accordance with CEQA and the California Health and Safety Code (Section 7050.5), the Stanislaus County coroner must be contacted immediately. If the remains are deemed to be Native American, the coroner will notify the NAHC, which will in turn appoint and notify a most Likely Descendent (MLD) to act as a tribal representative. The MLD will work with a qualified archaeologist to determine the proper treatment of the human remains and associated funerary objects. Construction activities will not resume until either the human remains are exhumed, or the remains are avoided via project construction design change.

Mitigation Measures

None.

VII. Geology and Soils: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a (i-iii)No Impact.** The site is not located near any known Alquist-Priolo faults.
- a (i-iv)No Impact.** The topography of the project site is relatively flat and surrounded by flat agricultural parcels. Slopes within the project area are between zero (0) and two (2) percent according to the Natural Resource Conservation Service. There are no anticipated impacts related to landslides.
- b) Less than significant Impact.** Any soil disturbed by the project will be regraded to the existing site conditions and/or be secured against erosion through the use of rock (rip-rap), matting, or other BMP.
- c) Less than significant Impact.** Soils in the project area are comprised of Hicksville Loam (90%), Pentz-Peters associated (5.6%), and Archerdale Clay Loam (4.4%). All soils unsuitable for use as a structural base or sub-base shall be removed and replaced with suitable structural base material.
- d) Less than significant Impact.** Refer to answer to question (c) above.
- e) No Impact.** The project does not include any waste water disposal systems.

Mitigation Measures

None.

VIII. Greenhouse Gas Emissions: Would the project:	Potentially Significant Impact	Less Than Significant Impact 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

a & b) Less Than Significant. Construction impacts to air quality would be short-term in duration and are not anticipated to result in adverse or long-term impacts. The emission of greenhouse gases during construction and operation of the proposed project would be negligible and therefore less than significant.

Mitigation Measures

None.

IX. Hazards and Hazardous Materials: Would the project:	Potentially Significant Impact	Less Than Significant Impact 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

adopted emergency response plan or emergency evacuation plan?				
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **Less than significant Impact.** The Project would involve the use of heavy equipment for grading, hauling, and materials handling. Use of this equipment may require the use of fuels and other common materials that have hazardous properties (e.g., fuels are flammable). These materials would be used in accordance with all applicable laws and regulations and, if used properly, would not pose a hazard to people, animals, or plants. All refueling of construction vehicles and equipment would occur within the designated staging area for the project. The use of hazardous materials would be temporary and the Project would not include a permanent use or source of hazardous materials; therefore impacts would be less than significant.
- b) **No Impact.** The project is a water crossing project and would not create a significant hazard to the public or the environment. There are no current or historical clean-up sites or hazardous waste facilities in proximity to the project area. The closest occurrence is approximately 19.5 miles south west of the project area (Envirostor, 2019).
- c) **No Impact.** There are no schools located within one-quarter mile of the proposed project.
- d) **No Impact.** According to a search of available environmental records listed on EDR, the project site is on no known list of hazardous materials sites (Envirostor, 2019).
- e) **No Impact.** The project is not located within two (2) miles of a public airport. The nearest airport is the Stockton Municipal Airport located approximately 20 miles west.
- f) **No Impact.** The project is not within the vicinity of a private airstrip.
- g) **No Impact.** Construction and operation of the proposed project would not result in interference or restriction of access road. There would be no impact to adopted emergency response plans or emergency evacuation plans.
- h) **No Impact.** The proposed project would not expose people to any risk of wildland fires.

Mitigation Measures

None.

X. Hydrology and Water Quality: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) **Less than significant Impact.** BMPs will be incorporated into Project design and Project management to minimize impacts on the environment including reduction of sedimentation and release of pollutants (oil, fuel, etc.). The following measures will be implemented to ensure best management practices:

- The area of construction and disturbance would be limited to as small an area as feasible to reduce erosion and sedimentation.
- Measures would be implemented during land-disturbing activities to reduce erosion and sedimentation. These measures may include mulches, soil binders and erosion control blankets, silt fencing, fiber rolls, temporary berms, sediment de-silting basins, sediment traps, and check dams.
- Existing vegetation would be protected where feasible to reduce erosion and sedimentation. Vegetation would be preserved by installing temporary fencing, or other protection devices, around areas to be protected.
- Exposed soils would be covered by loose bulk materials or other materials to reduce erosion and runoff during rainfall events.
- Exposed soils would be stabilized, through watering or other measures, to prevent the movement of dust at the Project site caused by wind and construction activities such as traffic and grading activities.
- All construction roadway areas would be properly protected to prevent excess erosion, sedimentation, and water pollution.
- All vehicle and equipment maintenance procedures would be conducted outside of the creek.

- All concrete curing activities would be conducted to minimize spray drift and prevent curing compounds from entering the waterway directly or indirectly.
 - All construction materials, vehicles, stockpiles, and staging areas would be situated outside of the channel. All stockpiles would be covered, as feasible.
 - Energy dissipaters and erosion control pads would be provided at the bottom of slope drains. Other flow conveyance control mechanisms may include earth dikes, swales, or ditches. Stream bank stabilization measures would also be implemented.
 - All erosion control measures and storm water control measures would be properly maintained until the site has returned to a pre-construction state.
 - All disturbed areas would be restored to pre-construction contours and revegetated, either through hydroseeding or other means, with native or approved non-invasive species.
 - All construction materials would be hauled off-site after completion of construction.
- b) **No Impact.** The project does not require the use of groundwater.
- c) **Less than significant Impact.** The drainage pattern within the Project area will be temporarily disturbed during construction activities, which will occur during the typically dry time of year. The site would be re-graded to return to pre-construction conditions and would not alter existing drainage patterns or cause impacts related to substantial erosion or siltation.
- d) **Less than significant Impact.** The project proposes to construct creek crossing facilities that satisfy the maximum summertime flow rate of 550 CFS. The creek crossing facilities may be inundated during times of heavy precipitation. The design of the facilities shall account for inundation, and further, the design shall maintain existing creek conveyance capacities. Prior to final design, the existing Hoods Creek shall be surveyed and modeled to determine existing conveyance capacities. The model shall be approved by a licensed Engineer and flow information integrated into the crossings' design. The final design shall not result in a decrease of existing flow capacity.
- e) **No Impact.** The site would be re-graded to return to pre-construction conditions, thereby not increasing historical runoff. The project does not connect to any existing storm drain system.
- f) **Less than significant Impact with Mitigation.** See answer (a) above.
- g) **No Impact.** No housing is included in this project.
- h) **No Impact.** The project is not constructing any habitable structures and the project location is not located within a 100-year flood hazard area.

- i) **No Impact.** The construction of a dam or levee is not included in this project.
- j) **No Impact.** The project is not located within or adjacent to a large body of water.

Mitigation Measures

None.

XI. Land Use and Planning: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **No Impact.** The Project proposes to construct improvements to mitigate a physical divide between severed areas of private property.
- b) **No Impact.** The Project would not conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the Project.
- c) **No Impact.** The project is not within any known habitat or community conservation plans.

Mitigation Measures

None.

XII. Mineral Resources: Would the project:	Potentially Significant Impact	Less Than Significant Impact 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **No Impact.** There are no known valuable mineral resources available at the project site.
- b) **No Impact.** There is no delineated mineral resources recovery site at the project site.

Mitigation Measures

None.

XIII. Noise: Would the project result in:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **Less than Significant.** The construction activities would only occur during weekday work hours in accordance with Chapter 10.46 Noise Control of the Stanislaus County Code and would not generate noise in excess of the nearby roadway.

- b) **Less than Significant.** The temporary groundbourne vibration and noise of the construction activities would be in accordance with Chapter 10.46 Noise Control of the Stanislaus County Code and would not be excessive to the nearest occupied structures.
- c) **No Impact.** There is no equipment included in this project to permanently increase the ambient noise level.
- d) **Less than Significant.** Construction activities would only occur during weekday work hours and would not generate noise in excess of the nearby roadway.
- e) **No Impact.** The project is not located within an airport land use plan.
- f) **No Impact.** The project is not in the vicinity of a private airstrip.

Mitigation Measures

None.

XIV. Population and Housing: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **No Impact.** The project would not induce substantial population growth in the area. The proposed project provides access to adjacent farmlands for agricultural purposes.
- b) **No Impact.** No existing housing would be displaced by this project.
- c) **No Impact.** Displacement of people and housing would not occur as a part of this project.

Mitigation Measures

None.

XV. Public Services:	Potentially Significant Impact	Less Than Significant Impact 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:				
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a (i, ii) No Impact. The project site is located within agricultural fields and would not result in the need for new facilities or affect response times to the adjacent residences.

a (iii-v) No Impact. There are no schools, parks, or other public facilities within the project area. No mitigation measures would be required.

Mitigation Measures

None.

XVI. Recreation:	Potentially Significant Impact	Less Than Significant Impact 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **No Impact.** The proposed project would not 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) **No Impact.** Bicycle facilities do not currently exist within the project area. The proposed project does not include recreational facilities, nor does it require the construction or expansion of recreational facilities.

Mitigation Measures

None.

XVII. Transportation/Traffic: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **Less than Significant.** The project would result in increased traffic along Milton Road due to visits to the project site for construction; however the work would be temporary and therefore would not result in a significant impact.
- b) **No Impact.** The project would not conflict with a congestion management program or standards established by Stanislaus County.
- c) **No Impact.** The nearest airport is the Stockton Municipal Airport, which is approximately 20 miles west of the project. The Project would not result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks; therefore, no impact would occur, and no mitigation is required.
- d) **No Impact.** The proposed project would not result in any impacts related to increased hazards from design features or incompatible uses.
- e) **No Impact.** The proposed project would be constructed within farm roads and would not require any road closures along residential roads.
- f) **No Impact.** No interruptions to alternative transportation would result from the proposed project.

Mitigation Measures

None.

XVIII. Utilities and Service Systems: Would the project:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

a) No Impact. The project will not produce any wastewater.

- b) **No Impact.** No new water treatment facilities are proposed as a part of this project.
- c) **No Impact.** Existing storm water drainage facilities are adequate to deal with the runoff from the project site. No impacts to existing stormwater drainage facilities would occur.
- d) **No Impact.** The project does not require any water supplies.
- e) **No Impact.** There is no wastewater treatment required for this project.
- f) **No Impact.** Construction of the proposed project would result in minor amounts of solid waste that would be disposed of at the Calaveras County Rock Creek Landfill.
- g) **No Impact.** The project would comply with all federal, state, and local statutes and regulations related to solid waste disposal. Construction of the proposed project would result in minor amounts of solid waste that would be disposed of at the Calaveras County Rock Creek Landfill.

Mitigation Measures

None.

XIX. Mandatory Findings of Significance:	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) **Less than significant Impact with Mitigation.** The project will utilize measures listed within Section IV and V to minimize and avoid potential impacts to the American Badger and cultural resources. Construction would not have a cumulatively considerable contribution to the decline of American Badger habitat in the region. There are no known historic resources within the project area.
- b) **No Impact.** The project is a water conveyance project and is not anticipated to have cumulatively significant impacts on environmental resources.

- c) **No Impact.** No substantial adverse effects on human beings, either directly or indirectly, are anticipated.

Mitigation Measures:

None.

Appendix A – BIOLOGICAL RESOURCES TECHNICAL REPORT

Biological Resources Technical Report

Whittles Crossing Project

Stanislaus County, California



Prepared for:

Stockton East Water District
6767 E. Main Street
Stockton, California 95215

Prepared by:

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110 Blue Ravine Road, Suite 200
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August 2019

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Appendix H: OHWM Delineation Datasheets

List of Abbreviations

BMPs	Best Management Practices
BSA	Biological Study Area
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFG	California Fish and Game
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
District	Stockton East Water District
EO	Executive Order
ESA	Environmentally Sensitive Area
°F	Fahrenheit
Feet	ft.
FESA	Federal Endangered Species Act
IPaC	Information for Planning and Consultation
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
OHW	Ordinary-High Water Mark
Project or proposed Project	Whittles Three Bridges Project
RWQCB	Regional Water Quality Control Board
SWPPP	Storm Water Pollution Prevention Plan
U.S.	United States
U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

Summary

The Stockton East Water District (District) proposes to construct crossings at three (3) locations over Shirley-Hoods creek in unincorporated Stanislaus County, California. The permanent bridge crossings will be constructed for agricultural and District maintenance purposes.

This Biological Resources Technical Report is a review and evaluation of the potential impacts to threatened, endangered, proposed listed or sensitive species and protected habitat resources as a result of the proposed Project. Reconnaissance level surveys and a jurisdictional delineation were conducted within the proposed Project's Biological Study Area (BSA), which is approximately 54.7 acres and encompasses the construction area with an approximate 100-foot buffer.

Literature research, habitat assessments and field surveys identified one California Department of Fish and Wildlife (CDFW) species of special concern, the American badger (*Taxidea taxus*), which is presumed present within the BSA due to a sighting of the species during the April 18, 2019 biological survey. Furthermore, based on biological surveys and habitat assessments, special-status plant species are presumed absent from the BSA. Additionally, no federally designated critical habitat or Essential Fish Habitat is present within or adjacent to the BSA.

An analysis was conducted to assess the biological resources within the proposed Project area that potentially could be impacted by the Project's activities. The results of which determined that two jurisdictional water features, Shirley-Hoods Creek and a wetland, are present within the BSA. No impacts to the wetland are anticipated. The proposed Project anticipates 0.16 acre of temporary and 0.08 acre of permanent impacts to Shirley-Hoods Creek.

The proposed Project is subject to compliance with the California Environmental Quality Act (CEQA); the District represents the Project proponent and, therefore, the CEQA lead agency. The District will obtain appropriate permits for the proposed Project. Regulatory permits include; Clean Water Act Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB) and a Streambed Alteration Agreement under Section 1602 from the California Department of Fish and Wildlife (CDFW). The Project is the construction of three farm bridges, which are considered exempt from Section 404 of the Clean Water Act. Therefore, no permit from the United States Army Corps of Engineers (USACE) Section 404 group for impacts to jurisdictional waters is required. Implementation of terms and conditions of environmental permits, along with Best Management Practices (BMPs) and avoidance and minimization measures will ensure the Project does result in negative impacts to the existing biological environment.

1. Introduction

The Stockton East Water District (District) proposes to construct crossings at three (3) locations over Shirley-Hoods Creek for local agricultural uses. The three (3) Project areas are located within unincorporated Stanislaus County, California. The sites are located approximately 1.5 miles northwest of the unincorporated town of Eugene and approximately 7 miles east of the unincorporated town of Farmington (Figure 1. Project Vicinity). The Project site is only accessible through gated, private farm roads that are located off of Dunton Road (Figure 2. Project Location). Specifically, the Project has three (3) proposed crossings, Orchard crossing, located in Section 21, Smith Creek crossing, located in Section 22 and Main crossing located in Section 27, all which lie within Township 1 North, Range 10 East of the Mount Diablo Base Meridian in the United States Geological Survey (USGS) Farmington, California and Bachelor Valley, California 7.5-minute topographic maps.

1.1 History

According to historical aerials, the Project vicinity has been developed for agricultural purposes since the 1960's. Land within the Project area has been highly disturbed for decades through farming practices and livestock grazing. The grassland communities found within the Project area are mostly composed of non-native annual grasses.

1.2 Project Description

Each of the three (3) Project locations are anticipated to include the construction of precast 8' span by 6' rise box culverts. The Main crossing will be 65 feet long, the Smith Creek crossing will be 70 feet long and the Orchard crossing will be 89' feet long. All crossings will be up to 24-feet wide. Each crossing will arrive on site as multiple precast box culvert section, each approximately 6 feet long. The full crossing width and length will be accomplished by securing multiple sections of precast box culverts together and adjacent to each other. The stream bed will be excavated approximately 4 feet below existing channel invert. A compacted 2-foot depth foundation of aggregate base rock will be installed upon which the culvert sections will be placed. The culverts will be backfilled to depth of 18-24 inches with the excavated streambed material. 6-inch concrete curbs will be installed on the top surface, along the upstream and downstream edges of the culverts. Concrete wing walls approximately 8 feet tall by 8 feet wide will be constructed at the approaches to retain the side slopes of the approach roads. Rock slope protection will be placed around each abutment to protect against erosion. Compacted road base will be added in the approach areas leading in and out of the crossings.

There is a current access road to the Main crossing that continues on to the vicinities of the Smith Creek and Orchard crossings. New access roads will also be constructed through regularly grazed grassland to allow for connection between the existing access road and two (2) of the proposed crossings, Smith Creek and Orchard crossings.

Existing water services provided by the District will remain active during Project construction. No road closures are anticipated to occur during construction and access to adjacent residences will be maintained. Temporary construction easements will be needed on a limited basis to accommodate the construction of the proposed bridges. No permanent land acquisition is anticipated to occur. Construction is anticipated to last one (1) month per location, for a total of three (3) months to complete all proposed construction activities.

The Project is locally funded; therefore, the District is the lead agency under the California Environmental Quality Act (CEQA). Shirley-Hoods creek is a jurisdictional water of the U.S.; therefore, the District will obtain the appropriate permits for this Project. Regulatory permits anticipated for the proposed Project include; a Clean Water Act Section 401 Water Quality Certification from the Regional Water Quality Control Board (RWQCB) and a Streambed Alteration Agreement under Section 1602 from the California Department of Fish and Wildlife (CDFW). As the Project will be constructing farm roads over the Shirley-Hoods Creek, the Project is exempt from the Section 404 of the Clean Water Act program; therefore, no permit from the United States Army Corps of Engineers (USACE) is required.

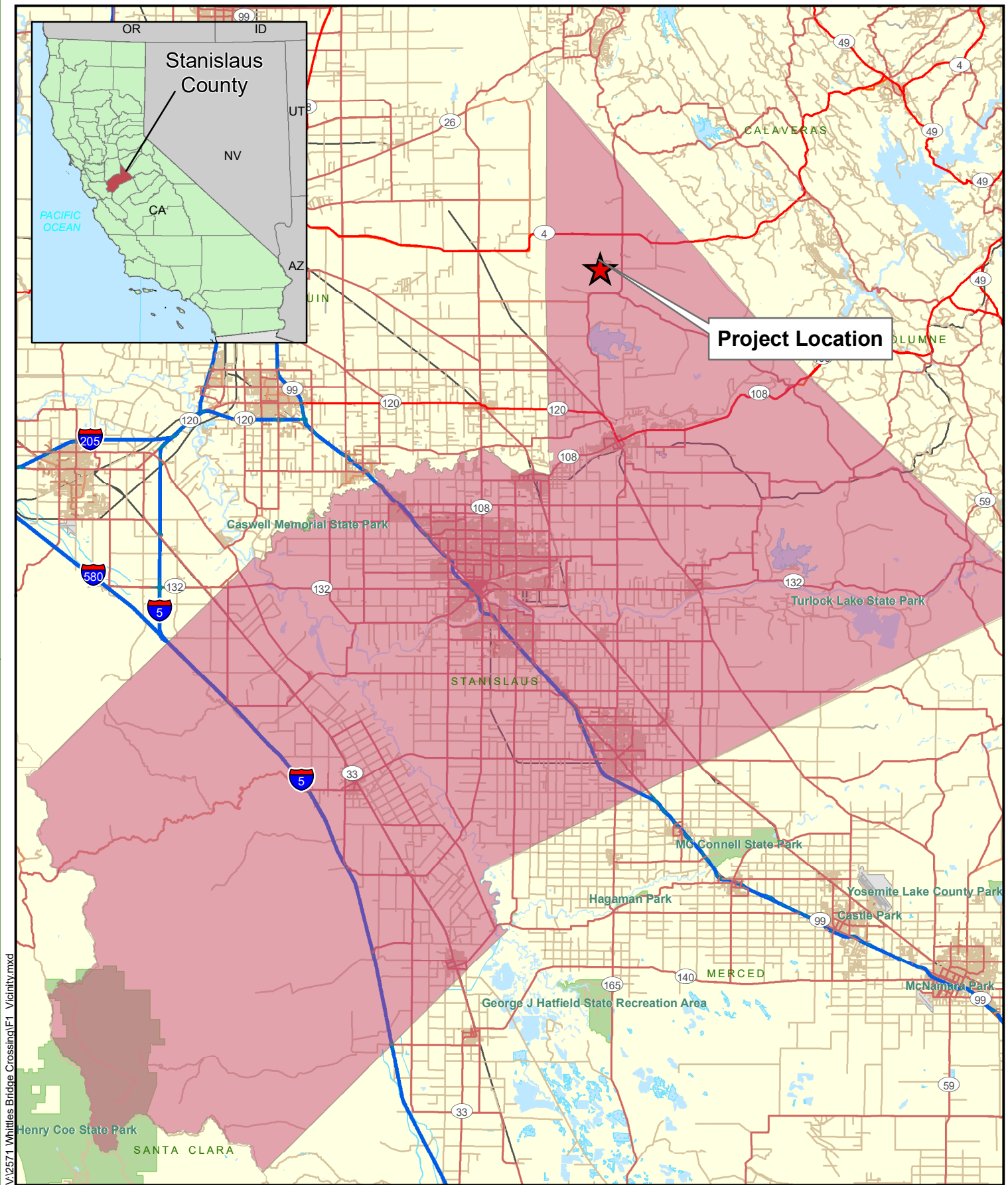
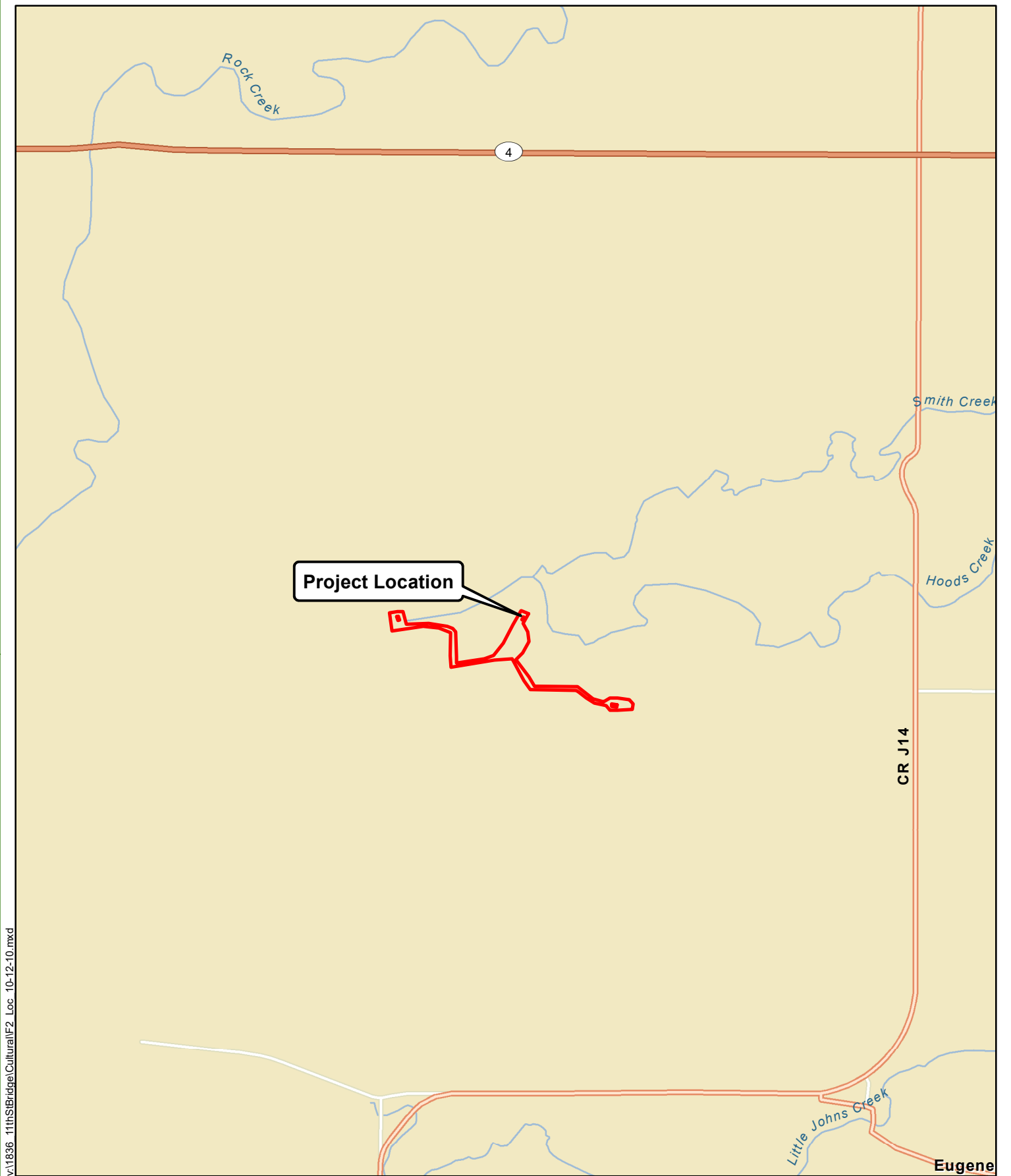


Figure 1
Project Vicinity

Whittles Three Bridges Project
Stanislaus County, California



x:\1836_11thStBridge\Cultural\F2 Loc 10-12-10.mxd

Source: ESRI World Street Maps Online; Dokken Engineering 4/29/2019; Created By: hsheldon



0 0.25 0.5 0.75 1 Miles

Figure 2
Project Location

Whittles Three Bridges Project
Stanislaus County, California

2. Study Methods

2.1 Regulatory Requirements

This section describes the general Federal, State, and local plans, policies, and laws that are relevant to biological resources within the Biological Study Area (BSA). Applicable Federal permits and approvals that could be required before construction of the Project are provided in Chapter 5.

Federal Regulations

National Environmental Policy Act

NEPA provides an interdisciplinary framework for environmental planning by Federal agencies and contains action-forcing procedures to ensure that Federal agency decision makers factors into account environmental resources. NEPA applies whenever a Federal agency proposes an action, grants a permit, or agrees to fund or otherwise authorize any other entity to undertake an action that could possibly affect environmental resources.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 (16 United States Code (U.S.C.) section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and resources have been identified by the United States Fish and Wildlife Service (USFWS).

Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to Waters of the United States (U.S.). The CWA serves as the primary Federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The CWA empowers the U.S. EPA to set national water quality standards and effluent limitations, and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or routine maintenance site. Non-point-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless they are specifically authorized by a permit; permit review is CWA's primary regulatory tool.

The RWQCB has jurisdiction under Section 401 of CWA and regulates any activity which may result in a discharge to surface waters. Typically, the areas subject to jurisdiction of the RWQCB coincide with those of the USACE (i.e., waters of the U.S. including any wetlands). The RWQCB also asserts authority over "waters of the State" under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

Executive Order 13112: Prevention and Control of Invasive Species

Executive Order (EO) 13112 (signed February 3, 1999) directs all Federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

Executive Order 13186: Migratory Bird Treaty Act

EO 13186 (signed January 10, 2001) directs each Federal agency, taking actions that could adversely affect migratory bird populations, to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- Avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restore and enhance habitat of migratory birds, as practicable; and
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) (50 Code of Federal Regulations [CFR] 10 and 21) and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as “the action of or attempt to pursue, hunt, shoot, capture, collect, or kill” (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

State Regulations

California Environmental Quality Act

The CEQA is a State law created to inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities and to work to reduce these negative environmental impacts. The District is the CEQA lead agency for this Project.

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game (CFG) Code Section 2050 et seq.) requires the California Department of Fish and Wildlife (CDFW) to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (Sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing).

CESA also requires CDFW to comply with CEQA (Pub. Resources Code Section 21000 et seq.) when evaluating incidental take permit applications (CFG Code Section 2081(b) and California Code Regulations, Title 14, section 783.0 et seq.), and the potential impacts the project or activity, for which the application was submitted, may have on the environment. CDFW’s CEQA

obligations include consultation with other public agencies which have jurisdiction over the project or activity [California Code Regulations, Title 14, Section 783.5(d)(3)]. CDFW cannot issue an incidental take permit if issuance would jeopardize the continued existence of the species [CFG Code Section 2081(c); California Code Regulations, Title 14, Section 783.4(b)].

Section 3503 and 3503.5: Bird and Raptors

CFG Code Section 3503 prohibits the destruction of bird nests and Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests.

Section 3513: Migratory Birds

CFG Code Section 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

2.2 Studies Required

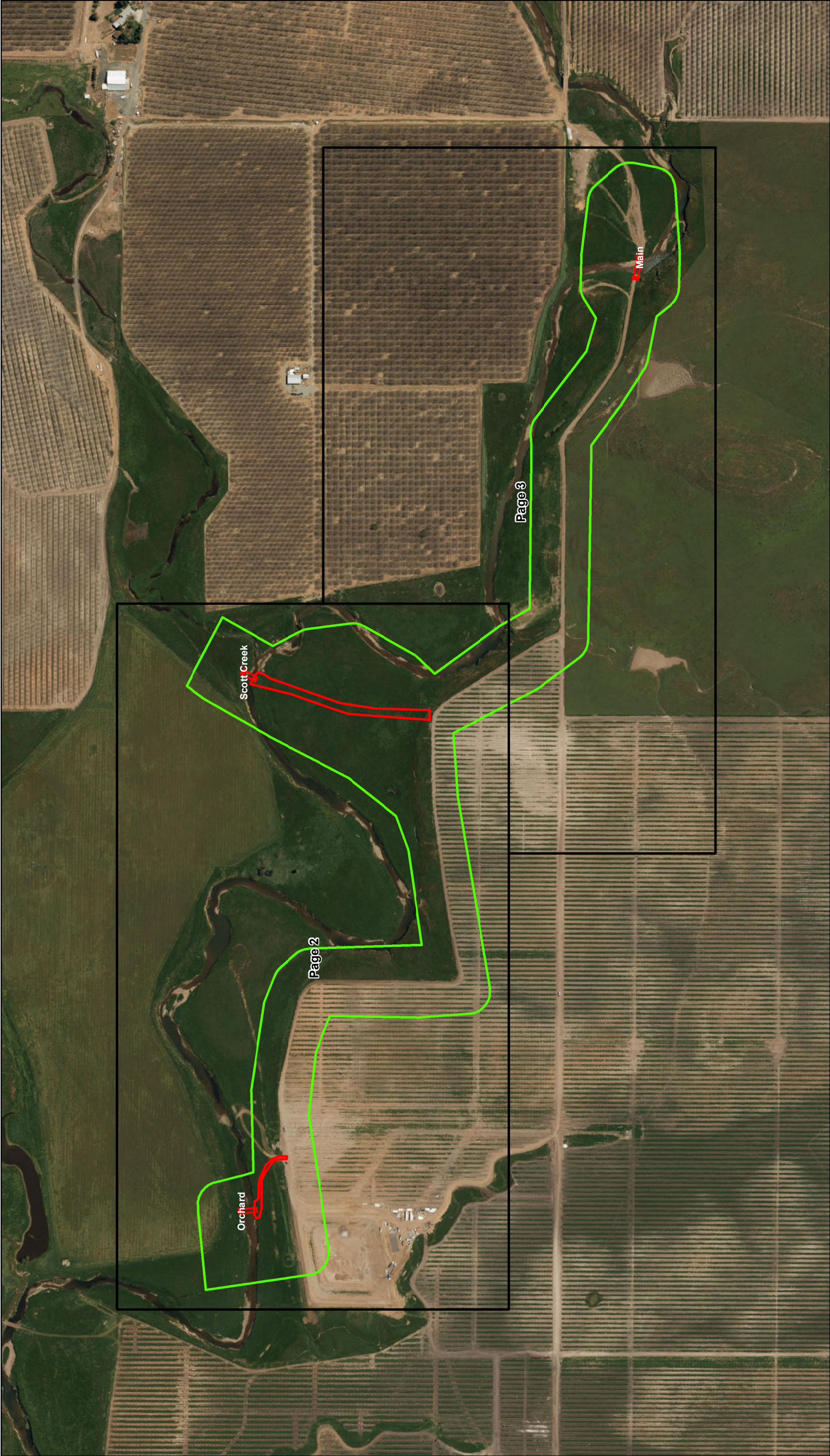
Literature Search

Prior to field work, literature research was conducted through the USFWS Information for Planning and Consultation (IPaC) official species list generator (Appendix A), the CDFW California Natural Diversity Database (CNDDDB) (Appendix B), the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants (Appendix C), the National Marine Fisheries Service (NMFS) (Appendix D) and the Natural Resource Conservation Service (NRCS) Soil Report (Appendix E) to identify habitats and special-status species having the potential to occur within the BSA. Table 1 provides a comprehensive list of the species generated from the online database searches and presents specific characteristics, habitat requirements, and potential for occurrence for each species.

Survey Methods

Prior to field surveys, the BSA was defined as the Project impact area plus an approximate 100-foot buffer to accommodate any changes to Project limits or design and to facilitate construction access (Figure 3. Biological Study Area). Habitat assessment and analysis of historic occurrences were conducted to determine the potential for each of these species to occur within the BSA.

Biological surveys and habitat assessment included walking through the BSA, observing vegetation communities, compiling notes on observed flora and fauna, and assessing the potential for existing habitat to support sensitive plants and wildlife (Appendix F. Species Observed List). Additionally, a jurisdictional delineation was conducted to identify jurisdictional Waters of the U.S. and State of California within the BSA. All plant and wildlife observations were recorded and are discussed in Chapter 3 of this document.



Source: ESRI Maps Online; Dokken Engineering 6/3/2019; Created By: astbrck



1 inch = 400 feet

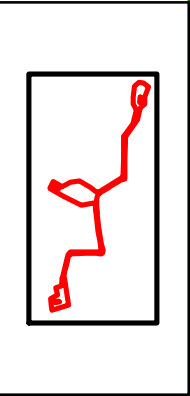
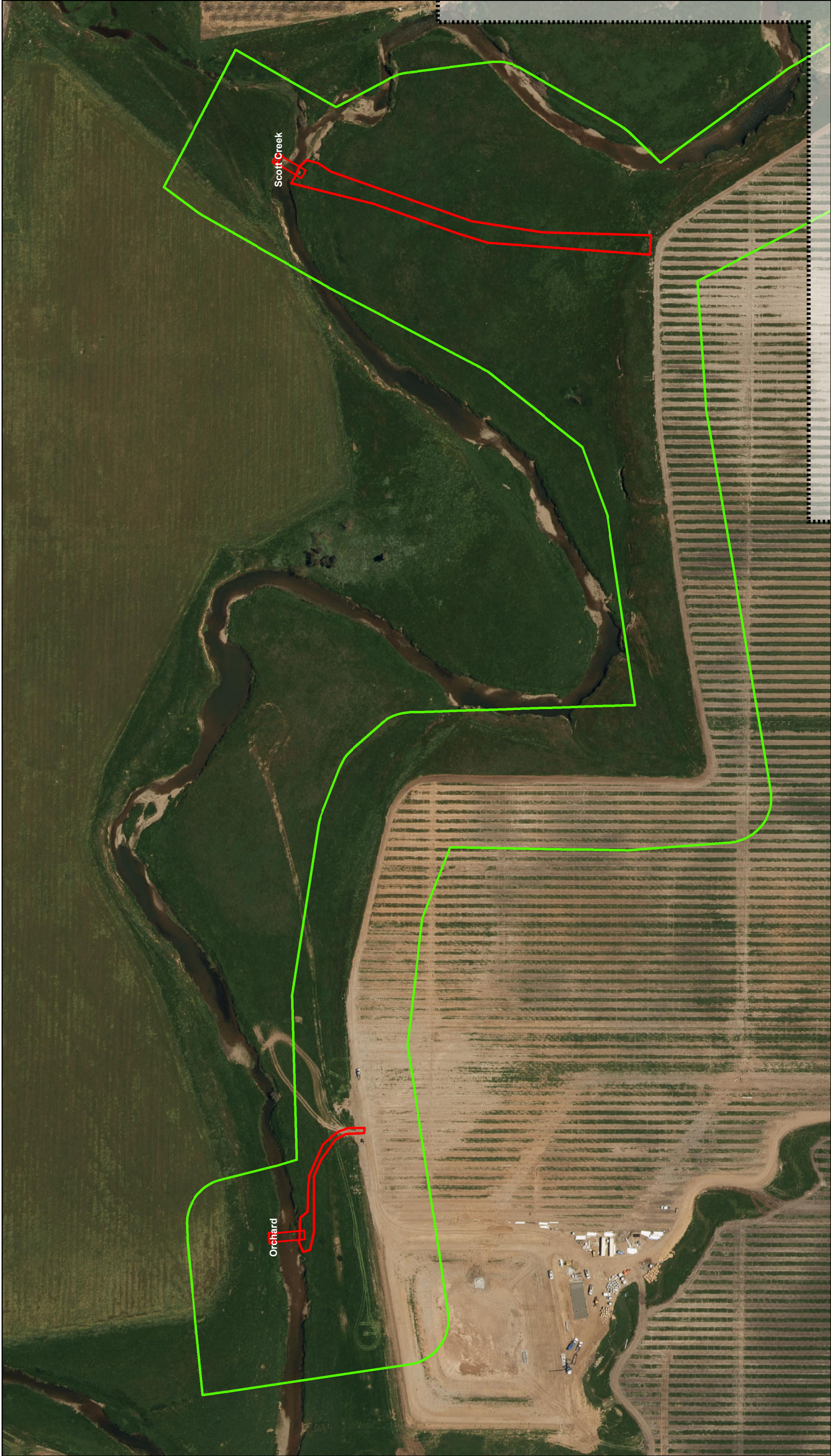


Figure 3
Biological Study Area
Page 1 of 3



Source: ESRI Maps Online; Dokken Engineering 6/3/2019; Created By: asbrck



1 inch = 200 feet

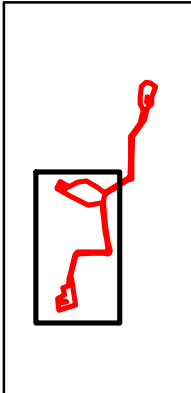
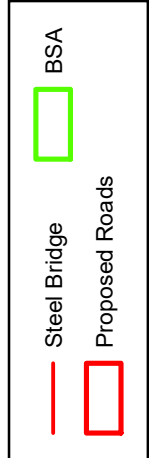


Figure 3
Biological Study Area
Page 2 of 3



Source: ESRI Maps Online; Dokken Engineering 6/3/2019; Created By: asbrck



1 inch = 200 feet



Steel Bridge

Proposed Roads

BSA

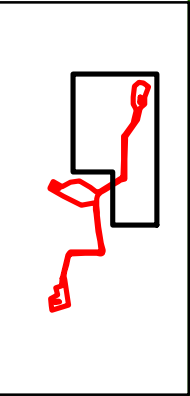


Figure 3
Biological Study Area
Page 3 of 3

Personnel Survey Dates

A biological field survey was conducted on April 18, 2019 by Dokken Engineering biologist Courtney Owens and Hanna Sheldon. Habitat assessments were conducted within the BSA to assess the vegetative communities present, identify biological resources which may be impacted by the Project, and evaluate the potential for special-status species to occur on-site.

Agency Coordination and Professional Contacts

United States Fish and Wildlife Service

On April 17, 2019, an official species list was obtained from USFWS of Federal Endangered and Threatened species that could occur in the vicinity of the Project (Appendix A: USFWS Species List).

California Department of Fish and Wildlife

On April 17, 2019, a six-quadrangle list of species with potential to occur in the Project vicinity was obtained from CDFW's CNDDDB (Appendix B: CNDDDB Species List).

California Native Plant Society

On April 17, 2019, a six-quadrangle list of plant species with potential to occur in the Project vicinity was obtained from the CNPS Inventory of Rare and Endangered Plants of California (Appendix C: CNPS Species List).

National Marine Fisheries Service

On April 22, 2019, an official species list was obtained from National Marine Fisheries Service (NMFS) of special-status species, critical habitat and essential fish habitat in the Project vicinity (Appendix D: NFMS Species List).

Limitations That May Influence Results

Sensitive wildlife species with the potential to occur in the BSA may be cryptic (difficult to detect) or transient, migratory species. The population size and locations of sensitive species may fluctuate through time. Because of this, the data collected for this biological resource technical report represents a “snap shot” in time and may not reflect actual future conditions.

The collection of biological field data is normally subject to environmental factors that cannot be controlled or reliably predicted. Consequently, the interpretation of field data must be conservative and consider the uncertainties and limitations imposed by the environment. However, due to the experience and qualifications of the consulting biologists involved in the survey, this limitation is not expected to severely influence the results or substantially alter the findings.

No additional limitations were present that could influence the results of this document. All surveys were conducted during appropriate weather and temperature conditions.

3. Results: Environmental Setting

3.1 Description of the Existing Biological and Physical Conditions Study Area

Study Area

Prior to field surveys, the BSA was established by creating a 100-foot buffer around all anticipated Project impacts; including, bridge abutments, potential staging areas, temporary construction easements, placement of rip rap and dewatering limits. From north to south, the BSA ranges in width from approximately 270 feet (ft.) to 1,200 ft.. From east to west, the BSA is approximately 5,270 ft. in length. The approximate total area of the BSA is 54.7 acres.

Physical Conditions

Regionally, the BSA is located approximately 1.5 miles northwest of the unincorporated town of Eugene and approximately 6.8 miles east of Farmington in Stanislaus County, California, within the northern Sierra Nevada Foothills Floristic Province (Jepson Herbarium 2019). Stanislaus County experiences Mediterranean conditions including warm, dry summers and cool, wet winters. Average summer highs reach approximately 75.7 degrees Fahrenheit (°F) and winter lows reach approximately 48.3°F, with up to 17.85 inches of precipitation annually (US Climate Data 2019). The BSA ranges in elevation from approximately 150 to 170 ft. above mean sea level. Soil types within the BSA include, Hicksville loam, 0 to 2 percent slopes, occasionally flooded, Pentz-Peters association, 2 to 15 percent slopes and Pentz-Peters associations, 2 to 50 percent slopes (NRCS 2019). Vegetation communities within the BSA include disturbed annual grassland, agricultural lands, barren areas, Shirley-Hoods Creek and a wetland feature (Figure 4. Vegetation Communities within the BSA), (Appendix G. Representative Photographs).

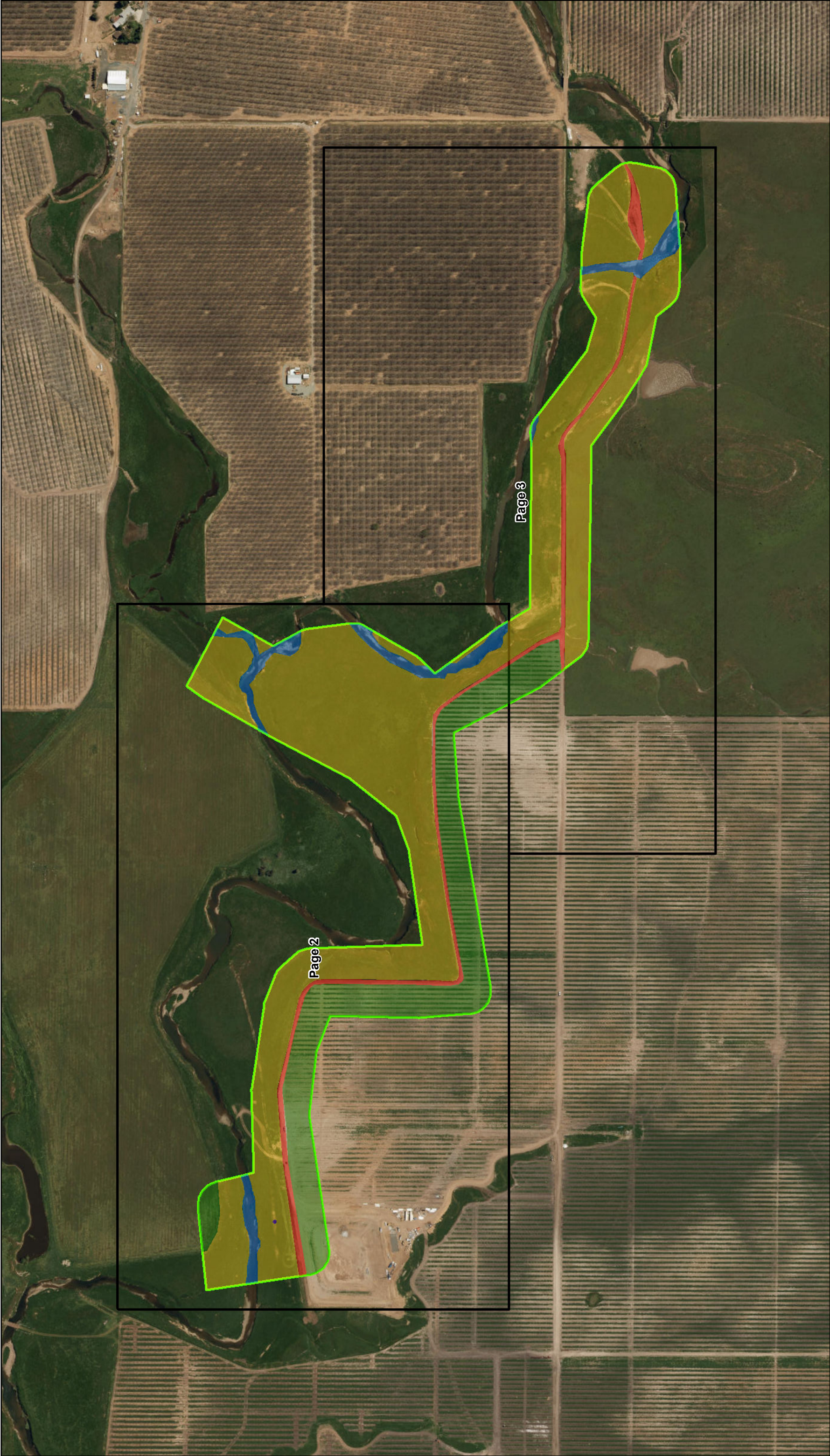
Biological Conditions in the Study Area

Disturbed Annual Grassland

Disturbed annual grassland habitat is found throughout the BSA. Disturbed annual grassland habitat is defined as an herbaceous habitat that is a highly disturbed vegetation community dominated by non-native, naturalized grasses. This habitat type exhibits low levels of diversity. Grassland communities within the BSA are regularly disturbed by livestock grazing. The dominant grasses found within the BSA are foxtail barley (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*) and soft chess brome (*Bromus hordeaceus*). Disturbed ANNUAL grassland occupies approximately 37.9 acres (69.2%) of the BSA.

Agricultural Lands

Agricultural lands within the BSA consists of almond (*Prunus dulcis*) orchards and dirt access roads. Maintenance surrounding the almond orchards includes regular watering through irrigation lines, clearing orchard floors and may include the use of pesticides. Agricultural lands comprise approximately 13.9 acres (25.4%) of the BSA.



Source: ESRI Maps Online; Dokken Engineering 5/14/2019; Created By: briann



1 inch = 400 feet

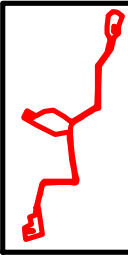
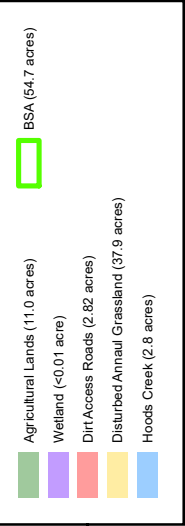


Figure 4
Vegetation Communities within the BSA
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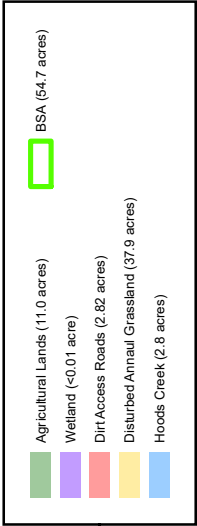
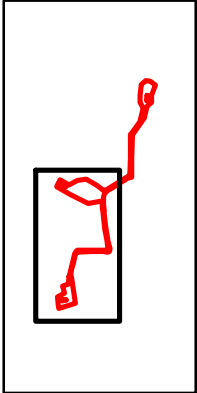
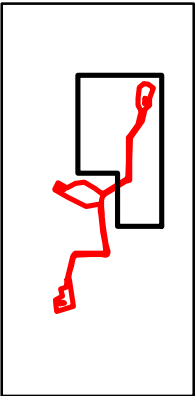
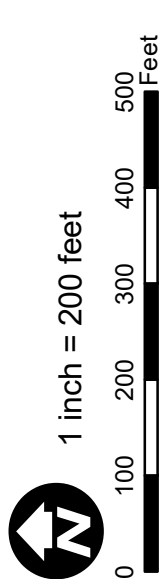


Figure 4
Vegetation Communities within the BSA
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Source: ESRI Maps Online; Dokken Engineering 5/14/2019; Created By: briann



Barren

The Project area contains approximately one mile of dirt roads for access to adjacent agricultural properties. The roads are barren and are regularly disturbed. The BSA contains approximately 2.28 acres (4.16%) of dirt roads.

Shirley-Hoods Creek

The BSA contains approximately 1.2 miles of Shirley-Hoods Creek, a freshwater perennial stream. Shirley-Hoods Creek originates in the Sierra Nevada foothills in Calaveras County and flows west for approximately 16 miles before entering Little John's Creek and eventually connects to the San Joaquin River approximately 30 miles from the Project vicinity. The OHWM of Shirley-Hoods Creek was delineated using a Trimble GeoXT Geoexplorer 6000 series handheld GPS unit. Stream characteristics at each stream crossing were noted such as, breaks in slopes and sediment textures (Appendix H. OHWM Delineation Datasheets). The dominant vegetation types at the Orchard, Smith Creek and Main crossings were herbaceous species including, foxtail barley (*Hordeum murinum*), Ithuriel's spear (*Triteleia laxa*), riggut brome (*Bromus diandrus*), spring vetch (*Vicia sativa*) and soft chess brome (*Bromus hordeaceus*). The Smith Creek crossing, and the Main crossing also contain Himalayan blackberry (*Rubus armeniacus*) along the banks of the channel. Within the Project area, the majority of Shirley-Hoods Creek, contains shallow water that is approximately 1-3 ft. deep. The creek's substrate is composed of a mix of sand, gravel and cobble. Shirley-Hoods Creek occupies approximately 2.8 acres (5.1%) of the BSA.

Wetland

One wetland feature was identified within the BSA approximately 60 feet to the south of the proposed Orchard crossing. The wetland feature has been regularly disturbed from long-term livestock grazing activities. The wetland feature was dominated by the common wetland plant species, the spikerush (*Eleocharis macrostachya*). No other wetland plant species were detected within the feature. The effects of the frequent grazing activities are apparent due to the highly compacted soils and lack of diversity in wetland vegetation species present. The wetland is approximately <0.01 acres (<1%) of the BSA.

Habitat Connectivity

The CDFW Biogeographic Information & Observation System (2014c) was reviewed to determine if the BSA is located within an Essential Connectivity Area. A portion of the BSA is within a California Essential Habitat Connectivity network. However, the Project does not anticipate impacting the purpose or function of this habitat connectivity.

3.2 Regional Species and Habitats and Natural Communities of Concern

Plant and animal species are considered to have a special-status if they have been listed as such by Federal or State agencies or by one or more special interest groups, such as CNPS. Prior to the field survey, literature searches were conducted using USFWS IPaC, CDFW CNDDb, NMFS and CNPS databases to identify regionally sensitive species with potential to occur within the

BSA. Table 1 provides a list of regional species of special concern returned by the database searches, describes the habitat requirements for each species, and states if the species was determined to have potential to occur within the BSA. Of the species identified by the database searches only one species, the American badger, is presumed present within the BSA. No additional wildlife species or special-status plant species have been determined to have potential to occur within the BSA. Additionally, no critical habitat occurs within or is adjacent to the BSA.

Table 1: Special-status Species with Potential to Occur in Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Amphibian Species					
California Red-legged Frog	<i>Rana draytonii</i>	Fed: T State: -- CDFW: SSC	<p>The California red-legged frog occupies a fairly distinct habitat, combining both specific water (aquatic) and upland (terrestrial) components. California red-legged frog habitat includes nearly any area within 1-2 miles of a breeding site that stays moist and cool through the summer; this includes non-breeding aquatic habitat in pools of slow-moving streams, perennial or ephemeral ponds, and upland sheltering habitat such as rocks, small mammal burrows, logs, densely vegetated areas, and even, man-made structures (i.e. culverts, livestock troughs, spring-boxes, abandoned sheds).</p> <p>Breeding sites are generally found in deep, still or slow-moving water (greater than 2.5 feet) and can have a wide range of edge and emergent cover amounts. California red-legged frogs can breed at sites with dense shrubby riparian or emergent vegetation, such as cattails, tules, or overhanging willows or can proliferate in ponds devoid of emergent vegetation and any apparent vegetative cover (i.e., stock ponds). Breeds from late November to late April. Occurs from elevations near sea level to 5,200 ft.</p>	A	<p>Presumed Absent: The Project area lacks densely vegetated areas, emergent vegetation and upland habitat required by the species. Furthermore, there are no CNDDDB documented occurrences within a 10-mile radius of the Project area. Due to the lack of documented occurrences within the BSA and lack of densely vegetated areas, the species is presumed absent from the Project area.</p>

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
California Tiger Salamander	<i>Ambystoma californiense</i>	Fed: T State: --- CDFW: SSC	Inhabits annual grasslands and the grassy understorey of Valley-Foothill Hardwood communities. Requires underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	A	Presumed Absent: The Project area does contain grassland communities but is not located within a valley-foothill hardwood habitat and lacks vernal pool habitat preferred by the species. There are CNDDB occurrence within a 10-mile radius of the Project area. The nearest and most recent occurrences is approximately 8.3 miles north of the Project area and was recorded in 2010. The species was found in vernal pool habitat. Due to the lack of underground refuges and vernal pools the species is presumed absent from the Project area.
Western Spadefoot	<i>Spea hammondi</i>	Fed: -- State: -- CDFW: SSC	Inhabits open areas with sandy or gravelly soils including mixed woodlands, grasslands, coastal sagescrub, chaparral, sandy washes, river floodplains, foothills and mountains. Species spends most of the time underground in burrows and only emerges between October and May during ample rainfall. A permanent or ephemeral body of water is required for breeding.	A	Presumed Absent: The Project area lacks woodland, chaparral, coastal sagescrub, sandy washes and foothill mountain habitat preferred by the species. There are CNDDB documented occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 8.7 miles north of the Project area and was recorded in 1992. The species was found within Calaveras River which does not directly connect to Shirley-Hoods Creek, the water source present within the Project area. Due to the lack of suitable habitat and the lack of local, recent occurrences, the species is presumed absent from the Project area.
Avian Species					
Burrowing Owl	<i>Athene curicularia</i>	Fed: -- State: -- CDFW: SSC	Species inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Requires friable soils	A	Presumed Absent: The Project area contains grassland habitats and is considered an agricultural area, but most soils within the Project area are not suitable for the species. There are

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
			for burrow construction (Below 5,300 feet).		CNDDB documented occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 8 miles south of the Project area and was recorded in 1991. Additionally, this species was not observed during the biological surveys conducted on April 18, 2019. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
California black rail	<i>Laterallus jamaicensis coturniense</i>	Fed: -- State: T CA RPR --	Species inhabits salt marshes, shallow freshwater marshes, wet meadows and flooded grassy vegetation. Requires emergent vegetation for nesting.	A	Presumed Absent: The Project area lacks wet meadows and emergent vegetation required for nesting. There are no CNDDB documented occurrences within a 10-mile radius of the Project area. Due to the lack of marsh and meadow habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Song sparrow "Modesto population"	<i>Melospiza melodia</i>	Fed: -- State: -- CDFW: SSC	This population of song sparrows only resides in the north-central portion of the Central Valley with the highest densities occurring in the Butte Sink area of the Sacramento Valley and in the Sacramento-San Joaquin River Delta. The preferred habitat is emergent freshwater marshes, riparian forests and thickets. A source of standing or running water and dense vegetation is required by the species (Gardali).	A	Presumed Absent: The Project area lacks freshwater marshes and riparian forest required for nesting and foraging by the species. There are no CNDDB documented occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Swainson's hawk	<i>Buteo swainsoni</i>	Fed: --- State: T CDFW: ---	Inhabits plains, dry grassland, farmland and ranch country. Nests in large trees or shrubs usually 15-30 feet above ground hidden within	A	Presumed Absent: The Project area lacks trees suitable for nesting but does contain farmland that could be utilized for foraging. There are CNDDB

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
			foliage. Forages by soaring over grassland or perches and scans the ground for small rodents.		documented occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 4.6 miles east of the Project area and was recorded in 2002. A nest was found within a valley oak along Rock Creek. Due to the lack of suitable nesting habitat within the Project area and the lack of local recent occurrences, the species is presumed absent from the Project area.
Tricolored blackbird	<i>Agelaius tricolor</i>	Fed: --- State: --- CDFW: SSC	Inhabits freshwater marsh, swamp and wetland communities, but may utilize agricultural or upland habitats that can support large colonies, often in the Central Valley area. Requires dense nesting habitat that is protected from predators, is within 3-5 miles from a suitable foraging area containing insect prey and is within 0.3 miles of open water. Suitable foraging includes wetland, pastureland, rangeland, at dairy farms, and some irrigated croplands (silage, alfalfa, etc.). Nests mid-March - early August but may extend until October/November in the Sacramento Valley region.	A	Presumed Absent: The Project area lacks freshwater marsh, swamp and large wetland communities with dense nesting habitat that can support large colonies of the species. There are CNDDB documented occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 2.7 miles south of the Project area and was recorded in 2015. The colony was found nesting within blackberry shrubs near the Woodward Reservoir. However, due to the lack of suitable nesting habitat and the lack of CNDDB occurrences within the BSA, the species is presumed absent from the Project area.
Crustacean Species					
Conservancy Fairy Shrimp	<i>Branchinecta conservatio</i>	Fed: E State: --- CDFW: ---	Inhabits relatively large and turbid clay bottomed playa vernal pools. Species requires pools to continuously hold water for a minimum of 19 days and must remain inundated into the summer months. Occupied playa pools typically are 1	A	Presumed Absent: The Project area lacks vernal pools required by the species. Furthermore, there are no CNDDB documented occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local recent occurrences, the species

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
			to 88 acres in size, but species may utilize smaller, less turbid pools.		is presumed absent from the Project area.
Vernal pool fairy shrimp	<i>Branchinecta lynchi</i>	Fed: State: CDFW:	Inhabit vernal pools and seasonal wetlands. Their diet consists of algae and plankton. Requires mud for egg laying.	A	Presumed Absent: The Project area does not contain vernal pools required by the species. There are documented CNDDB occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 8.5 miles northwest of the Project area and was recorded in 2011. The species was found within an unnamed drainage among vernal pool habitat. Due to the lack of vernal pool habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Vernal pool tadpole shrimp	<i>Lepidurus packardii</i>	Fed: State: CDFW:	Species can be found in vernal pools. The species burrows into the muddy bottom of vernal pools and consumes fairy shrimp, bacteria and protozoa. Requires mud for egg laying.	A	Presumed Absent: The Project area does not contain vernal pools required by the species. There are documented CNDDB occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 8 miles south of the Project area and was recorded in 1993. Due to the lack of vernal pool habitat, the species is presumed absent from the Project area.
Fish Species					
Delta smelt	<i>Hypomesus transpacificus</i>	Fed: State: CDFW:	Inhabits brackish water below 25 degrees Celsius. Shallow, fresh or edge waters with good water quality are ideal for spawning. Juveniles require food-rich nursery habitat while adult almost exclusively eat small crustaceans. They are thought to spawn on shallow sandy beaches or some other substrate in the water	A	Presumed Absent: The Project area lacks brackish water and sandy beaches required by the species. There are no CNDDB documented occurrences within a 10-mile radius of the Project area. Additionally, the Project area is outside of the species current known range. Due to the lack of suitable aquatic habitat, the lack of recent occurrences and the fact

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
			column. Occurs within the Sacramento-San Joaquin Delta and seasonally within the Suisun Bay, Carquinez Strait and San Pablo Bay. Most often occurs in partially saline waters.		that the Project area is outside of the species known range, the species is presumed absent from the Project area.
Hardhead	<i>Mylopharodon conocephalus</i>	Fed: -- State: --- CDFW: SSC	Resident of Sacramento-San Joaquin and Russian River drainages in California. Inhabits low to mid-elevation lakes, reservoirs and streams, with preference to pools and runs with deep (>80 cm) clear water, slow (20-40 cm/sec) velocities and sand-gravel-boulder substrates. The species prefers water temperatures at or above 68°F and adequate flows to maintain dissolved oxygen levels. Spawning occurs in April-May in Central Valley streams and may extend into August in the foothill streams of the Sacramento-San Joaquin drainage in gravel or rocky substrate. Juveniles require adequate vegetative cover along stream or lake margins.	A	Presumed Absent: The Project area lacks suitable aquatic habitat that contains pools of water deeper than 80 cm. Furthermore, Shirley-Hoods Creek, within the Project area is not suitable for juveniles due to a lack of vegetative cover along the stream. There is one CNDDB documented occurrence within a 10-mile radius of the Project area. The occurrence is located approximately 10 miles south of the Project area and was recorded in 2008. The species was found within the Stanislaus River just northwest of Oakdale; however, Shirley-Hoods Creek does not connect to Stanislaus River. Due to the lack of suitable aquatic habitat, the lack of local occurrences and the fact that the occurrence was found in a different water body, the species is presumed absent from the Project area.
Steelhead – Central Valley DPS	<i>Oncorhynchus mykiss irideus</i> pop. 11	Fed: T State: --- CDFW: ---	This species is known to occur along most of the California coast line and inhabits freshwater streams and tributaries in northern and central California. The preferred habitat consists of estuaries, freshwater streams and near shore habitat with productive coastal oceans. Spawning occurs in small freshwater streams and tributaries occurs from January through March and could extend into	A	Presumed Absent: The BSA lacks estuaries and coastal oceans. There is one CNDDB documented occurrence within a 10-mile radius of the Project area. The occurrence is located approximately 10 miles south of the Project area and was recorded in 2014. The species was found within the lower Stanislaus River, from the San Joaquin River to Goodwin Dam; however,

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
			spring. Spawning occurs where cool, well oxygenated water is available year-round. Approximately 550-1,300 eggs are deposited in an area with good intergravel flow. The fry emerge from the gravel about 4-6 six weeks after hatching and remain in shallow protected areas associated with stream margin. Juveniles may remain in freshwater for the rest of their life cycle or return to the ocean. The principal remaining wild populations spawn annually in Deer and Mill Creeks in Tehama County, in the lower Yuba River, and a small population in the lower Stanislaus River.		Shirley-Hoods Creek does not connect to Stanislaus River in which the species is known to occur. Due to the lack of suitable aquatic habitat, the lack of local occurrences and the fact that the occurrence was found in a different water body, the species is presumed absent from the Project area.
Invertebrate Species					
Valley Elderberry Longhorn Beetle	<i>Desmocerus californicus dimorphus</i>	Fed: T State: --- CDFW: ---	Exclusively inhabits red or blue elderberry along rivers and streams. Diet consists of elderberry leaves and flowers. The larvae eat the inside of the elderberry stems. Adults are actively feeding and mating from March-June.	A	Presumed Absent: The Project area lacks elderberry shrubs required by the species. No elderberry shrubs were identified during the biological surveys conducted on April 18, 2019. Additionally, there are no CNDDB documented occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local occurrences, the species is presumed absent from the Project area.
Mammal Species					
American badger	<i>Taxidea taxus</i>	Fed: --- State: --- CDFW: SSC	Species inhabits northern North Coast area in shrub, forest and herbaceous habitat with friable soils. Badgers are carnivorous consuming a variety of rodents and live in burrows.	HP	Presumed Present: The Project area lacks shrub and forest habitat preferred by the species. There are no CNDDB documented occurrences within a 10-mile radius of the Project area. However, there are a series of burrows on the north

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
					side of Shirley-Hoods Creek, near the orchard crossing in the western portion of the Project area. During the biological surveys conducted on April 18, 2019 one American badger was observed entering a burrow. Due to this occurrence, the species is presumed present within the Project area.
Pallid bat	<i>Antrozous pallidus</i>	Fed: --- State: --- CDFW: SSC	Inhabits low elevations of deserts, grasslands, shrub lands, woodlands and forests year-round. Most common in open, dry habitats with rocky areas for roosting. Forages over open ground within 1-3 miles of day roosts. Prefers caves, crevices, and mines for day roosts, but may utilize hollow trees, bridges and buildings. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. Maternity colonies form early April and young are born April-July (below 10,000 feet).	A	Presumed Absent: The Project area lacks woodland and forest habitat preferred by the species and lacks caves, crevices and mines required by the species for roosting. There are documented CNDDB occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is approximately 10 miles south of the Project area and was recorded in 1999. Due to the lack of suitable roosting habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Reptile Species					
Giant garter snake	<i>Thamnophis gigas</i>	Fed: T State: T CDFW: --	Inhabits marsh, swamp, wetland (including agricultural wetlands), sloughs, ponds, rice fields, low gradient streams and irrigation/drainage canals adjacent to uplands. Ideal habitat contains both shallow and deep water with variations in topography. Species requires adequate water during the active season (April-November), emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and	A	Presumed Absent: The Project area lacks swamp and wetland habitat with emergent vegetation, such as cattails required by the species. There is one CNDDB documented occurrence within a 10-mile radius of the Project area. The occurrence is located approximately 9.8 miles west of the Project area and was recorded in 1987. The species was found deceased near a small marsh east of Stockton. Due to the lack of suitable aquatic habitat and the lack of local,

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
			foraging habitat and mammal burrows estivation. Requires grassy banks and openings in waterside vegetation for basking and higher elevation uplands for cover and refuge from flood waters during winter dormant season.		recent occurrences, the species is presumed absent from the Project area.
Plant Species					
Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	Fed: State: CA RPR	An annual herb inhabiting grassland swales, gopher mounds and vernal pool margins of mesic valley and foothill grassland communities. Flowers March – May (98-751 feet).	A	Presumed Absent: The Project area contains grassland habitat suitable for the species but lacks vernal pool margins preferred by the species. Additionally, there are no documented CNDDB occurrences within a 10-mile radius of the Project area. Furthermore, this species was not observed during the biological survey conducted on April 18, 2019. Due to the lack of local recent occurrences and the fact that the species was not observed during the biological survey, the species is presumed absent from the Project area.
Chinese camp brodiaea	<i>Brodiaea pallida</i>	Fed: State: CA RPR	A perennial bulb inhabiting valley and foothill grasslands, cismontane woodlands, and vernal streambeds with serpentine soils. Flowers May-June (525-1280 ft). Known from only two occurrences near Chinese Camp.	A	Presumed Absent: The Project area lacks serpentine soil required by the species. Additionally, there are no documented CNDDB occurrences within a 10-mile radius of the Project area and the Project area is outside of the species known elevation range. Due to the lack of suitable soil conditions, the lack of local recent occurrences and the fact the Project area is outside of the species known elevation range, the species is presumed absent from the Project area.

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Colusa grass	<i>Neostapfia colusana</i>	Fed: T State: -- CA RPR 1B.1	An annual herb inhabiting adobe soils of large or deep vernal pools. Flowers May –August (0-656 feet).	A	Presumed Absent: The Project area lacks vernal pools required by the species. There is one documented CNDDB occurrence within a 10-mile radius of the Project area. The occurrence is located approximately 6 miles east of the Project area and was recorded in 1986. The species was found at the headwaters of Shirley Creek within vernal pool habitat. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Delta button-celery	<i>Eryngium racemosum</i>	Fed: -- State: E CA RPR 1B.1	An annual or perennial herb inhabiting seasonally flooded clay depressions in floodplains and riparian scrub within vernal mesic clay depressions. Flowers June-August (10-100 feet).	A	Presumed Absent: The Project area lacks riparian scrub and vernal mesic clay depressions required by the species. There is one documented CNDDB occurrence within a 10-mile radius of the Project area. The occurrence is located approximately 9.4 miles northeast of the Project area and was recorded in 1971. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Forked hare-leaf	<i>Lagophylla dichotoma</i>	Fed: -- State: -- CA RPR 1B.1	An annual herb inhabiting valley and foothill grasslands and cismontane woodlands. Flowers April-June (160-2,500 ft.).	A	Presumed Absent: The Project area lacks cismontane woodland habitat preferred by the species. Additionally, there are no documented CNDDB occurrences within a 10-mile radius of the Project area. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Greene's Tuctoria	<i>Tuctoria greenei</i>	Fed: State: CA RPR	E -- 1B.1	An annual grass that is native and endemic to California. This species typically occurs in vernal pools in open grassland on the eastern side of the Sacramento and San Joaquin Valleys. It is only found in these seasonally wet areas. Blooms from May-July (98-3,500 ft.).	A	Presumed Absent: The Project area lacks vernal pools required by the species. There are documented CNDDB occurrences within a 10-mile radius of the Project area. The nearest and most recent occurrence is located approximately 6 miles west of the Project area and was recorded in 1987. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Patterson's navarretia	<i>Navarretia paradoxiclara</i>	Fed: State: CA RPR	-- -- 1B.3	An annual herb native to California inhabiting meadows and seeps. Flowers from May-July (500-1,400 ft.).	A	Presumed Absent: The Project area lacks meadows and seeps required by the species. Additionally, there are no documented CNDDB occurrences within a 10-mile radius of the Project area and the Project area is outside of the species known elevation range. Due to the lack of suitable habitat, the lack of local recent occurrences and the fact the Project area is outside of the species known elevation range, the species is presumed absent from the Project area.
Pincushion navarretia	<i>Navarretia myersii</i> <i>ssp. myersii</i>	Fed: State: CA RPR	-- -- 1B.1	An annual herb native to California and inhabiting vernal pool communities, often in acidic soil conditions. Flowers April- May (65-1,083 ft.).	A	Presumed Absent: The Project area lacks vernal pool habitat required by the species. Additionally, there are no documented CNDDB occurrences within a 10-mile radius of the Project area and the species was not observed during the April 18, 2019 biological survey. Due to the lack of suitable habitat, the lack of local recent occurrences and the fact the species was not observed during the biological surveys, the species is presumed absent from the Project area.

Common Name	Species Name	Status		General Habitat Description	Habitat Present	Potential for Occurrence and Rationale
Tongue-leaf copper moss	<i>Scopelophila cataractae</i>	Fed: State: CA RPR	-- -- 2B.2	A moss only known from one occurrence near Copperopolis, CA in cismontane woodlands with highly mineralized soils (elevation data not available).	A	Presumed Absent: The Project area lacks cismontane woodland required by the species. Additionally, there are no documented CNDDB occurrences within a 10-mile radius of the Project area. Furthermore, the species is only known to occur within a small geographical region in Copperopolis, which is located approximately 13 miles east of the Project area. Due to the lack of suitable habitat and the lack of local recent occurrences, the species is presumed absent from the Project area.
Tuolumne button-celery	<i>Eryngium pinnatisectum</i>	Fed: State: CA RPR	-- -- 1B.2	An annual/perennial herb inhabiting vernal pools, swales, intermittent streams, cismontane woodlands, and lower montane coniferous forests. Flowers June-August (230-3,002 ft.).	A	Presumed Absent: The Project area lacks vernal pool and swale habitat within a montane coniferous forest required by the species. There is one documented CNDDB occurrence within a 10-mile radius of the Project area. The occurrence is located approximately 9.5 miles northeast of the Project area and was recorded in 1987. Furthermore, the Project area is outside of the known elevation range of the species. Due to the lack of suitable habitat, the lack of local recent occurrences and the fact that the Project area is outside of the known elevation range of the species, the species is presumed absent from the Project area.

<p>Federal Designations (Fed): (FESA, USFWS) E: Federally listed, endangered T: Federally listed, threatened DL: Federally listed, delisted</p>	<p>State Designations (CA): (CESA, CDFW) E: State-listed, endangered T: State-listed, threatened</p>
<p>Other Designations CDFW_SSC: CDFW Species of Special Concern CDFW_FP: CDFW Fully Protected</p>	<p>California Native Plant Society (CNPS) Designations: <i>*Note: according to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.</i> 1A: Plants presumed extinct in California. 1B: Plants rare and endangered in California and throughout their range. 2: Plants rare, threatened, or endangered in California but more common elsewhere in their range. 3: Plants about which need more information; a review list.</p> <p>Plants 1B, 2, and 4 extension meanings: _1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat) _2 Fairly endangered in California (20-80% occurrences threatened) _3 Not very endangered in California (<20% of occurrences threatened or no current threats known)</p>
<p>Habitat Potential Absent [A] - No habitat present and no further work needed. Habitat Present [HP] - Habitat is or may be present. The species may be present. Critical Habitat [CH] – Project is within designated Critical Habitat.</p>	<p>Potential for Occurrence Criteria: Present: Species was observed on site during a site visit or focused survey. High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site. Low-Moderate: Either low quality habitat (including soils and elevation factors) for the species occurs on site and a known occurrence exists within 5 miles of the site; or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search. Presumed Absent: Focused surveys were conducted, and the species was not found, or species was found within the database search but habitat (including soils and elevation factors) do not exist on site, or the known geographic range of the species does not include the survey area.</p>
<p>Source: (CDFW 2019), (CNDDB 2019), (CNPS 2019), (Calflora 2019) (Jepson, 2nd Ed.).</p>	

4. Results: Biological Resources, Discussion of Impacts & Mitigation

4.1 Habitats and Natural Communities of Special Concern

Jurisdictional Waters

The BSA contains approximately 2.8 acres, or 1.2 miles, of Shirley-Hoods Creek, a freshwater perennial stream. Approximately, 200 linear feet of Shirley-Hoods Creek are within the three Project locations. A jurisdictional delineation, consistent with the *USACE Western Mountains, Valleys and Coast OHWM Delineations Cover Sheet*, was conducted on April 18, 2019 for the portions of Shirley-Hoods Creek that will be impacted by the Project. The OHWM was delineated using a Trimble GeoXT Geoexplorer 6000 series handheld GPS unit. The channel ranges in width and varies from approximately 10 to 14 ft. wide. The channel also ranges in depth and varies from approximately 1 to 6 ft., depending on the season. Shirley-Hoods Creek originates in the Sierra Nevada foothills in Calaveras County and flows west for approximately 16 miles before entering Little John's Creek and eventually flowing into the San Joaquin River, approximately 30 miles to the southwest.

Additionally, one wetland feature was delineated in the western portion of the BSA, approximately 60 feet from the Orchard crossing. The wetland feature is approximately <0.01 acre (<1%) of the BSA. The wetland was delineated using a Trimble GeoXT Geoexplorer 6000 series handheld GPS unit.

Impacts to Jurisdictional Waters

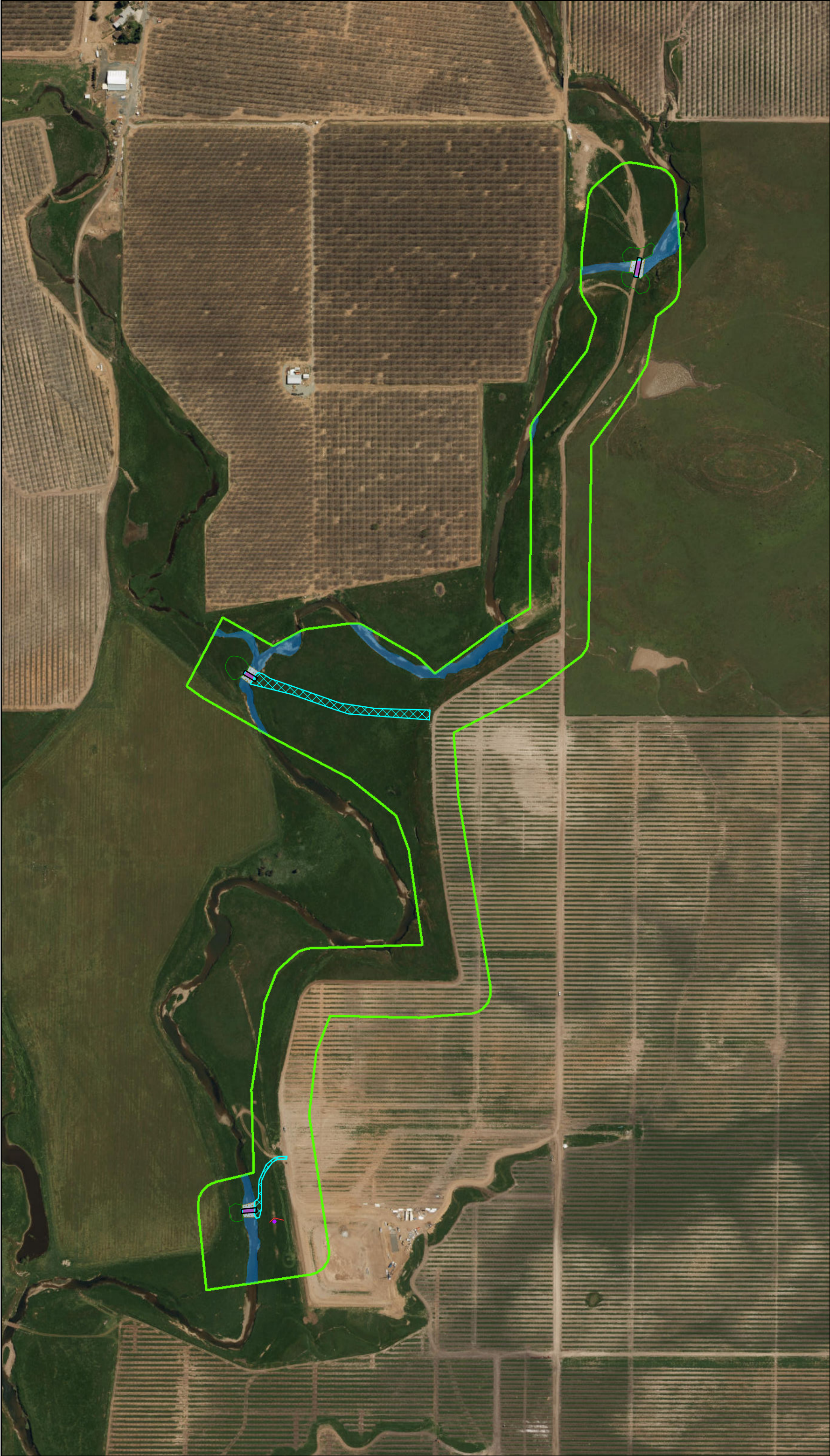
The Project is anticipated to have temporary and permanent impacts at the three Project locations along Shirley-Hoods Creek. Temporary impacts include dewatering areas within Shirley-Hoods Creek for construction access. For the purpose of this impact analysis, it is assumed that the area directly before the proposed crossing, where the water diversion materials would be placed, and the area directly around the proposed crossing location will be temporarily affected during construction. All temporary impacts would be restored to pre-existing conditions upon completion of construction. Permanent impacts to jurisdictional waters are anticipated to result from the installment of the box culverts, abutments, and rip rap needed for bank stabilization. The Project is anticipated to temporarily impact approximately 0.16 acre of Shirley-Hoods Creek and permanently impact approximately 0.08 acre of Shirley-Hoods Creek (Figure 5. Project Impacts).

The wetland feature is outside of the proposed construction impact area and the proposed Project will avoid the wetland feature entirely; therefore, no temporarily or permanently impacts are anticipated to occur to the wetland present within the BSA.

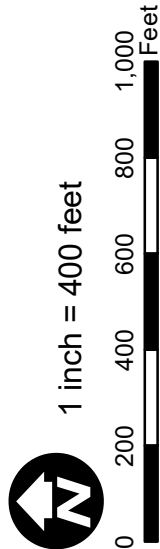
Jurisdictional Waters Avoidance and Minimization Efforts

The following Best Management Practices (BMPs) and avoidance and minimization measures will be incorporated into the Project design and Project management to reduce potential impacts to jurisdictional waters present within the BSA. BMPs will minimize impacts on the environment, including; reduction of sedimentation and release of pollutants (oils, fuel, etc.).

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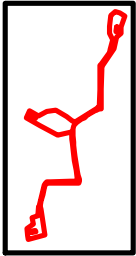
Source: ESRI Maps Online; Dokken Engineering 8/20/2019; Created By: Isheldon

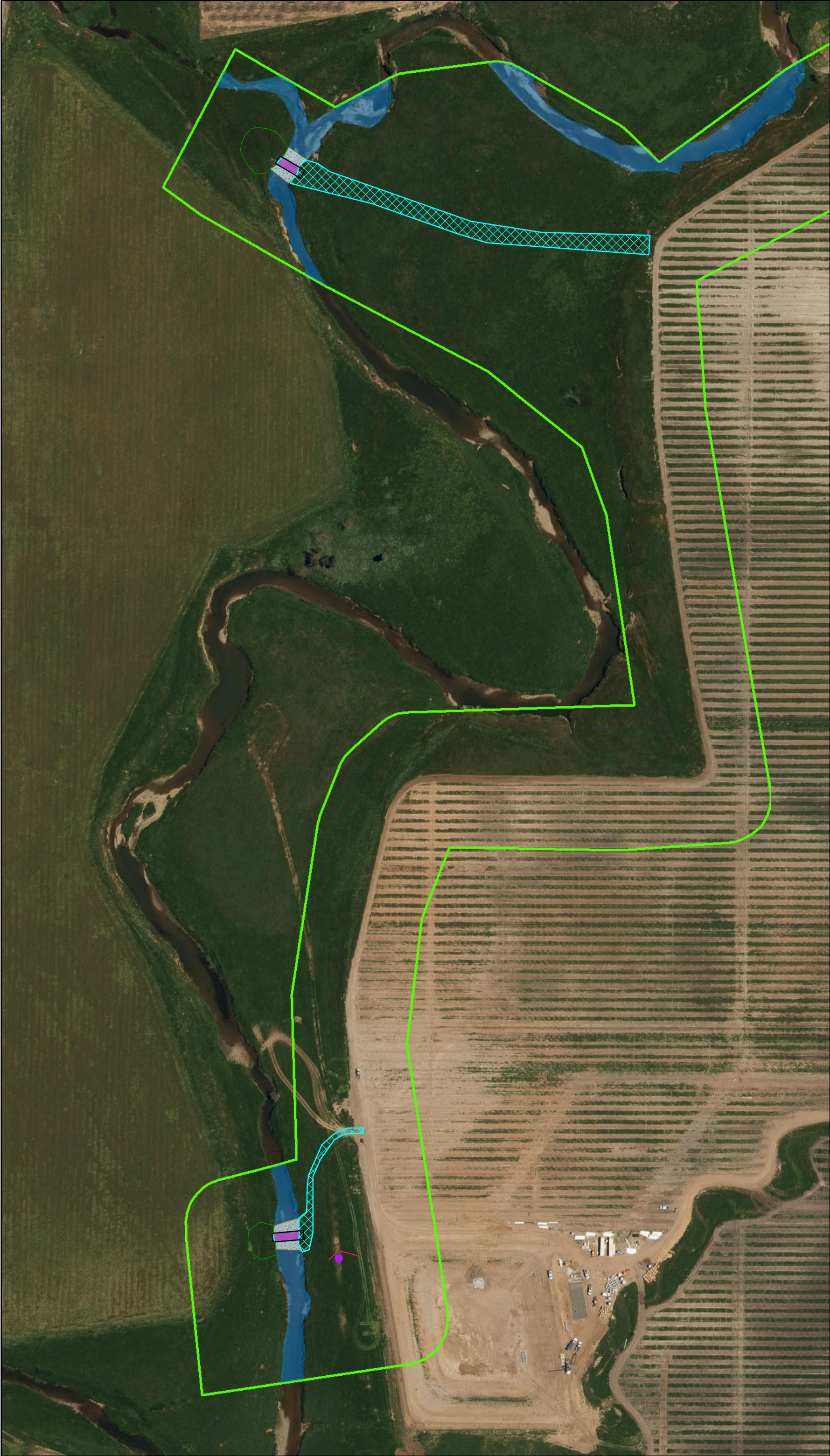


Grassland Impacts
Permanent (0.87 acres)
Temporary (0.60 acres)

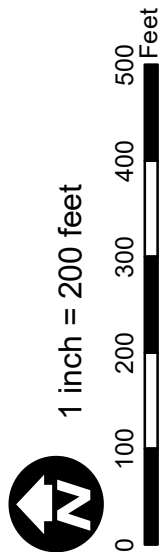
Water Impacts
Permanent (0.08 acres)
Temporary (0.16 acres)

Low Water Crossing
Jurisdictional Waters (2.88 acres)
BSA (54.7 acres)
ESA Fencing
Wetland

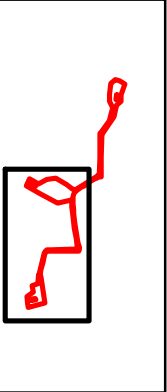




Source: ESRI Maps Online; Dokken Engineering 8/20/2019; Created By: Isheldon



Grassland Impacts		Water Impacts		BSA (54.7 acres)	
	Permanent (0.87 acres)		Permanent (0.08 acres)		
	Temporary (0.60 acres)		Temporary (0.16 acres)		Jurisdictional Waters (2.88 acres)
					Wetland





Source: ESRI Maps Online; Dokken Engineering 8/20/2019; Created By: Isheldon



1 inch = 200 feet



Grassland Impacts

- Permanent (0.87 acres)
- Temporary (0.60 acres)

Water Impacts

- Permanent (0.08 acres)
- Temporary (0.16 acres)

Low Water Crossing

- Jurisdictional Waters (2.88 acres)

BSA (54.7 acres)

- ESA Fencing
- Wetland

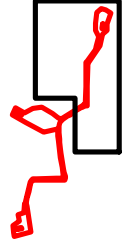


Figure 5
Project Impacts
Page 3 of 3

- BIO-1** Every individual working on the Project must attend a biological awareness training session delivered by a qualified biologist. This training program shall include information regarding sensitive habitats, special-status species and the importance of avoiding impacts to these species and their habitat.
- BIO-2** Prior to the start of construction activities, the Project limits in proximity to Shirley-Hoods Creek and the wetland will be marked with high visibility Environmentally Sensitive Area (ESA) fencing or staking to ensure construction will not further encroach into waters or any other biologically sensitive resources detected during pre-construction surveys.
- BIO-3** BMPs will be incorporated into Project design and Project management to minimize impacts on the environment including erosion and the release of pollutants (e.g. oils, fuels):
- Exposed soils and material stockpiles would be stabilized, through watering or other measures, to prevent the movement of dust at the Project site caused by wind and construction activities such as traffic and grading activities;
 - All construction roadway areas would be properly protected to prevent excess erosion, sedimentation, and water pollution;
 - All vehicle and equipment fueling/maintenance would be conducted outside of any surface waters;
 - Equipment used in and around jurisdictional waters must be in good working order and free of dripping or leaking contaminants;
 - Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering jurisdictional waters;
 - All erosion control measures and storm water control measures would be properly maintained until the site has returned to a pre-construction state;
 - All disturbed areas would be restored to pre-construction contours and revegetated, either through hydroseeding or other means, with native or approved non-invasive exotic species; and,
 - All construction materials would be hauled off-site after completion of construction.
- BIO-4** Upon completion of construction activities, any barriers to surface water flow must be removed in a manner that would allow flow to resume with the least disturbance to the substrate.

4.2 Special-Status Plant Species

Prior to field surveys, a list of regional special-status plant species with potential to occur within the Project vicinity was compiled from database searches (Appendix A and C). The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species and comparing the habitat requirements to available habitat within the BSA.

Natural habitats within the BSA are categorized as disturbed grassland, Shirley-Hoods Creek and one patch of wetland habitat. A CNPS and CNDDDB database search was conducted on all species located within a 10-mile radius of the BSA. After a careful comparison between habitat requirements and the habitat available within the BSA, no special-status plants were determined to have potential to occur.

4.2.1 Special-Status Plant Survey Results

No special-status plant species were detected during the April 18, 2019 biological surveys and habitat assessment. It has been determined that no special-status plant species have the potential of being present within the Project area BSA.

4.2.2 Impacts to Special-Status Plant Species

During the April 18, 2019 biological survey and habitat assessment, no special-status plant species were observed within the BSA; therefore, the proposed Project is not anticipated to impact special-status plant species.

4.2.3 Special-Status Plant Species Avoidance and Minimization Efforts/Compensatory Mitigation

Although no special-status plant species were detected during the biological survey, the incorporation of the following avoidance and minimization measures will further minimize and avoid potential impacts to native plant species and the existing plant communities within the BSA.

BIO-5 Prior to arrival at the Project site and prior to leaving the Project site, construction equipment that may contain invasive plants and/or seeds will be cleaned to reduce the spreading of noxious weeds.

BIO-6 Should a special-status plant species be observed within or immediately adjacent to the Project area, Environmentally Sensitive Area (ESA) fencing (orange construction barrier fencing) will be installed around special-status plant populations.

4.3 Special-Status Wildlife Species

Prior to field surveys, a list of regional special-status wildlife species with potential to occur within the Project vicinity was compiled from database searches (Appendices A, B, C and D). The potential for each species to occur within the BSA was determined by analyzing the habitat requirements of each species and comparing the habitat requirements to available habitat within the BSA.

The wildlife species listed in Table 1 are considered to be of special concern based on (1) Federal, State, or local laws regulating their development; (2) limited distributions; and/or (3) the presence of habitat required by the special-status wildlife species occurring on site. After a careful comparison between habitat requirements and the habitat available within the BSA, one special-status species, the American badger (*Taxidea taxus*), is presumed present within the BSA based on the fact that one individual was observed during the biological survey conducted on April 18, 2019.

4.3.1 Discussion of American Badger

The American badger is a CDFW species of special concern inhabiting most of the U.S. and is most commonly found in northern coastal areas within shrub, forest and herbaceous habitat with friable soils. Badgers live in burrows dug in relatively dry, often sandy, soil, usually in areas with sparse overstory cover. The diet consists of fossorial rodents and occasionally reptiles, insects and birds. Badgers mate in the summer and early fall and typically produce an average litter of 2-3 offspring (Ahlborn 2019). The species is uncommon in California and is most affected by traps and poisons used for predator control.

4.3.2 American Badger Survey Results

During the biological surveys conducted on April 18, 2019, one American badger was observed entering a burrow in the western portion of the Project area, near the Orchard crossing. There are a series of burrows along an embankment on the north side of Shirley-Hoods Creek, as well as a few scattered burrows throughout the BSA. Additionally, the disturbed grassland habitat provides suitable upland habitat for the species. Although, there are no CNDDDB documented occurrences within a 10-mile radius of the Project area, the species is presumed present due to the sighting of the individual during the biological survey.

4.3.3 Project Impacts to American Badger

Due to the fact the species was detected during biological surveys adjacent the Orchard crossing Project location and several borrows were found near the three proposed Project locations, the species is presumed to have potential to be present throughout the BSA. Construction activities are anticipated to have temporary and permanently impacts to upland habitat for the species. Approximately, 0.60 acres of grassland habitat is anticipated to be temporarily impacted from construction access and equipment staging. Temporary effects that result from construction access areas outside of permanent effects will be re-contoured to preconstruction conditions and re-vegetated after construction. Approximately, 1.7 acres are anticipated to be permanently impacted from the proposed Project. Permanent impacts will be the result from bridge abutments and from the creation of the access roads to the proposed crossings. The proposed Project will avoid impacts to the American badger habitat and individuals to the greatest extent practicable by implementing measure **BIO-1** and species-specific measures **BIO-8** through **BIO-10**.

4.3.4 Avoidance and Minimization Efforts/Compensatory Mitigation for Special-Status Wildlife Species

The proposed Project will avoid impacts to the American badger habitat and individuals to the greatest extent practicable by implementing avoidance and minimization measures. With the inclusion of measures **BIO-1** and in addition to the following species-specific avoidance and minimization measure, will further minimize and avoid potential impacts to the America badger.

BIO-7 No less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities, a qualified biologist will conduct a survey to determine if American badger den sites are present at the site. If dens are found, they will be monitored for badger activity. If the qualified biologist determines that dens may

be active, the entrances of the dens will be blocked with soil, sticks, and debris for three to five days to discourage the use of these dens prior to Project disturbance activities. The den entrances will be blocked to an incrementally greater degree over the 3 to 5-day period. After the qualified biologist determines that badgers have stopped using active dens, the dens will be hand-excavated with a shovel to prevent re-use during construction. No disturbance of active dens will take place when cubs may be present and dependent on parental care, as determined by a qualified biologist.

BIO-8 Equipment and other vehicles within the Project area shall not exceed 10 miles per hour to allow wildlife enough time to escape construction related activities.

BIO-9 All food-related trash must be disposed into closed containers and must be removed from the Project area daily. Construction personnel must not feed or otherwise attract wildlife to the Project area.

5. Conclusion and Regulatory Determination

5.1 Federal Endangered Species Act Consultation Summary

All Federally protected plants or wildlife species have been presumed absent from the BSA; therefore, Section 7 consultation for Federally protected species is not required.

5.2 Essential Fish Habitat Consultation Summary

No Essential Fish Habitat is present within the Project limits; therefore, consultation for Essential Fish Habitat is not required.

5.3 California Endangered Species Act Consultation Summary

No threatened or endangered State listed species have the potential to occur within the BSA; therefore, no further action is required and consultation with CDFW, under CESA, is not required.

5.4 Wetlands and Other Waters Coordination Summary

The Project is anticipated to have temporary and permanent impacts to one jurisdictional water feature present within the BSA, Shirley-Hoods Creek. Temporary impacts to Shirley-Hoods Creek are anticipated to be approximately 0.16 acre. Temporary impacts include access for construction equipment and dewatering within Shirley-Hoods Creek. Permanent impacts to Shirley-Hoods Creek will include approximately 0.08 acre to accommodate the installation of the culverts and rip-rap. Appropriate mitigation for impacts to Shirley-Hoods Creek will be determined during the permitting phase of the Project. The District will obtain appropriate permits for this Project including Clean Water Act Section 401 Water Quality Certification from the RWQCB and a Streambed Alteration Agreement under Section 1602 from the California Department of Fish and Wildlife (CDFW). As the Project will be constructing farm roads over the Shirley-Hoods Creek the proposed Project is exempt from the Section 404 of the Clean Water Act program; therefore, no permit from the USACE is required.

5.5 Invasive Species

In February 1999, EO 13112 was signed, requiring Federal agencies to work on preventing and controlling the introduction and spread of invasive species. Protective measure **BIO-6** will be incorporated into the Project plans to ensure that invasive species are not introduced or spread.

5.6 Other Wildlife Species

General Wildlife

To minimize and avoid potential effects to local wildlife, the following conservation measures have been incorporated into the Project design:

BIO-10 The contractor must not apply rodenticide or herbicide within the BSA during construction.

Migratory Birds

Native birds are protected by the MBTA and CFG Code Section 3513. To minimize potential impacts to migratory birds, the following avoidance and minimization measure will be incorporated throughout Project construction.

BIO-11 If vegetation removal is to take place during the nesting season (February 1–August 31), a pre-construction nesting bird survey must be conducted within 7 days prior to the start of construction.

A minimum 100-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300-foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the nesting area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in coordination with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.

6. References

- Ahlborn G. 2019. California Habitat Wildlife Relationship System). American badger (*Taxidea taxus*) (accessed: April 29, 2019).
- California Invasive Plant Council (Cal-IPC). 2019 Available at: <<http://www.cal-ipc.org/paf/>> (accessed: April 17, 2019).
- Calflora. 2019. Plants of California. Available at: <<http://www.calflora.org/>> (accessed: April 24, 2019).
- CNDDDB (California Natural Diversity Database). 2019. Available at: <<http://www.dfg.ca.gov/biogeodata/cnddb/>> (accessed: April 17, 2019).
- CNPS (California Native Plant Society). 2019. Inventory of Rare and Endangered Plants. Available at: <<http://cnps.site.aplus.net/cgi-bin/inv/inventory.cgi/BrowseAZ?name=quad>> (accessed: April 17, 2019).
- Jepson Herbarium. 2019. University of California, Berkeley. Available at: <<http://ucjeps.berkeley.edu/eflora/geography.html>> (accessed: April 25, 2019).
- NETR (Nationwide Environmental Title Research). 2019. Historic Aerials. Available at: <<https://www.historicaerials.com/>> (accessed: April 24, 2019).
- NMFS National Marine Fisheries Service). 2019. Species List. Available at: <https://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html> (accessed: April 17, 2019).
- US Climate Data. 2019. Stockton Weather Averages. Available at: <<http://www.usclimatedata.com>> (accessed: April 22, 2019).

Appendix A: USFWS Species List



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:

April 17, 2019

Consultation Code: 08ESMF00-2019-SLI-1699

Event Code: 08ESMF00-2019-E-05420

Project Name: Whittles 3 Bridges

Subject: List of threatened and endangered species that may occur in your proposed project location, and/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, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) 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 Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

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 Tracking Number 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

Consultation Code: 08ESMF00-2019-SLI-1699

Event Code: 08ESMF00-2019-E-05420

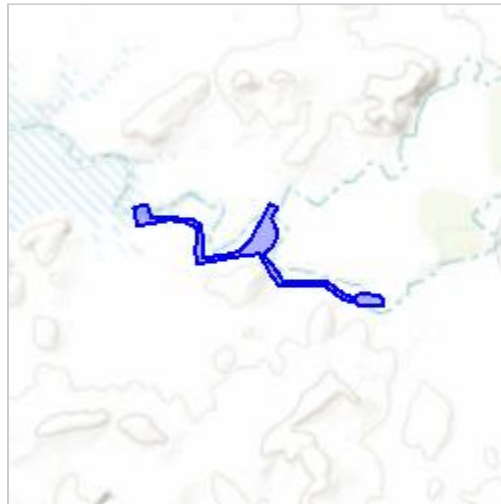
Project Name: Whittles 3 Bridges

Project Type: TRANSPORTATION

Project Description: Bridge repair

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/37.917239697881406N120.8733244954176W>



Counties: Stanislaus, CA

Endangered Species Act Species

There is a total of 10 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 Fisheries¹, 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.

Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle <i>Desmocerus californicus dimorphus</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp <i>Lepidurus packardii</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Colusa Grass <i>Neostapfia colusana</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5690	Threatened
Greene's Tuctoria <i>Tuctoria greenei</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1573	Endangered

Critical habitats

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

Appendix B: CNDDDB Species List



Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Farmington (3712088) OR Bachelor Valley (3712087) OR Valley Springs SW (3812018) OR Jenny Lind (3812017) OR Peters (3712181) OR Copperopolis (3712086))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	PMJUN011L1	None	None	G2T1	S1	1B.2
Blennosperma vernal pool andrenid bee <i>Andrena blennospermatis</i>	IIHYM35030	None	None	G2	S2	
burrowing owl <i>Athene cunicularia</i>	ABNSB10010	None	None	G4	S3	SSC
California linderiella <i>Linderiella occidentalis</i>	ICBRA06010	None	None	G2G3	S2S3	
California tiger salamander <i>Ambystoma californiense</i>	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Chinese Camp brodiaea <i>Brodiaea pallida</i>	PMLIL0C0C0	Threatened	Endangered	G1	S1	1B.1
Colusa grass <i>Neostapfia colusana</i>	PMPOA4C010	Threatened	Endangered	G1	S1	1B.1
Delta button-celery <i>Eryngium racemosum</i>	PDAPI0Z0S0	None	Endangered	G1	S1	1B.1
forked hare-leaf <i>Lagophylla dichotoma</i>	PDAST5J070	None	None	G2	S2	1B.1
giant gartersnake <i>Thamnophis gigas</i>	ARADB36150	Threatened	Threatened	G2	S2	
Greene's tuctoria <i>Tuctoria greenei</i>	PMPOA6N010	Endangered	Rare	G1	S1	1B.1
hardhead <i>Mylopharodon conocephalus</i>	AFCJB25010	None	None	G3	S3	SSC
midvalley fairy shrimp <i>Branchinecta mesoavallensis</i>	ICBRA03150	None	None	G2	S2S3	
North American porcupine <i>Erethizon dorsatum</i>	AMAFJ01010	None	None	G5	S3	
Northern Hardpan Vernal Pool <i>Northern Hardpan Vernal Pool</i>	CTT44110CA	None	None	G3	S3.1	
pallid bat <i>Antrozous pallidus</i>	AMACC10010	None	None	G5	S3	SSC
pincushion navarretia <i>Navarretia myersii</i> ssp. <i>myersii</i>	PDPLM0C0X1	None	None	G2T2	S2	1B.1
steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i> pop. 11	AFCHA0209K	Threatened	None	G5T2Q	S2	
Swainson's hawk <i>Buteo swainsoni</i>	ABNKC19070	None	Threatened	G5	S3	



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
tongue-leaf copper moss <i>Scopelophila cataractae</i>	NBMUS6U010	None	None	G3G4	S1	2B.2
tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
Tuolumne button-celery <i>Eryngium pinnatisectum</i>	PDAP10Z0P0	None	None	G2	S2	1B.2
valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	IICOL48011	Threatened	None	G3T2	S2	
vernal pool fairy shrimp <i>Branchinecta lynchi</i>	ICBRA03030	Threatened	None	G3	S3	
vernal pool tadpole shrimp <i>Lepidurus packardii</i>	ICBRA10010	Endangered	None	G4	S3S4	
western spadefoot <i>Spea hammondi</i>	AAABF02020	None	None	G3	S3	SSC

Record Count: 26

Appendix C: CNPS Species List

Plant List

13 matches found. Click on scientific name for details

Search Criteria

Found in Quads 3712086, 3712181, 3812017, 3812018 3712087 and 3712088;

[Modify Search Criteria](#) [Export to Excel](#) [Modify Columns](#) [Modify Sort](#) [Display Photos](#)

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Brodiaea pallida	Chinese Camp brodiaea	Themidaceae	perennial bulbiferous herb	May-Jun	1B.1	S1	G1
Brodiaea rosea ssp. vallicola	valley brodiaea	Themidaceae	perennial bulbiferous herb	Apr-May(Jun)	4.2	S3	G5T3
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Delphinium hansenii ssp. ewanianum	Ewan's larkspur	Ranunculaceae	perennial herb	Mar-May	4.2	S3	G4T3
Eryngium pinnatisectum	Tuolumne button-celery	Apiaceae	annual / perennial herb	May-Aug	1B.2	S2	G2
Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2	S1	G2T1
Lagophylla dichotoma	forked hare-leaf	Asteraceae	annual herb	Apr-May	1B.1	S2	G2
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	1B.1	S2	G2T2
Navarretia paradoxiclara	Patterson's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	1B.3	S2	G2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Scopelophila cataractae	tongue-leaf copper-moss	Pottiaceae	moss		2B.2	S1	G3G4
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	1B.1	S1	G1

Suggested Citation

California Native Plant Society, Rare Plant Program. 2019. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 17 April 2019].

Appendix D: NMFS Species List

From: [Hanna Sheldon](#)
To: nmfswcrca.specieslist@noaa.gov
Subject: NMFS Species List- Whittles 3 Bridges
Date: Monday, April 22, 2019 3:33:11 PM

Quad Name **Farmington**

Quad Number **37120-H8**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) -

SRWR Chinook Salmon ESU (E) -

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 -

Quad Name **Bachelor Valley**

Quad Number **37120-H7**

ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
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 -

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 -

Hanna Sheldon

Environmental Planner/Biologist

DOKKEN ENGINEERING

110 Blue Ravine Road, Suite 200, Folsom CA 95630

Phone: (916) 858-0642 – Fax: (916) 858-0643

Appendix E: NRCS Soil Report



United States
Department of
Agriculture

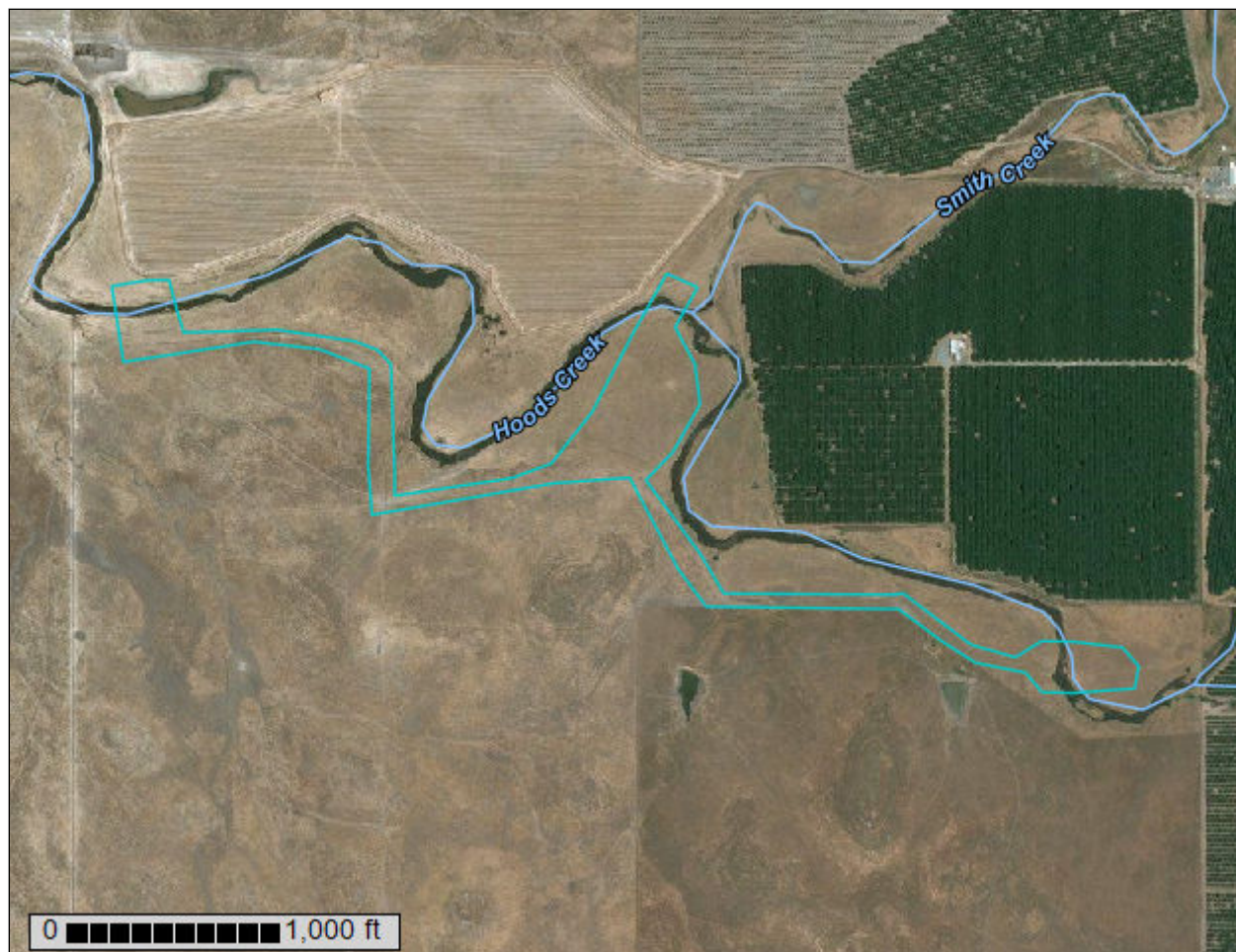
NRCS

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 **Stanislaus County, California, Northern Part**

Whittles 3 Bridges



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.

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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

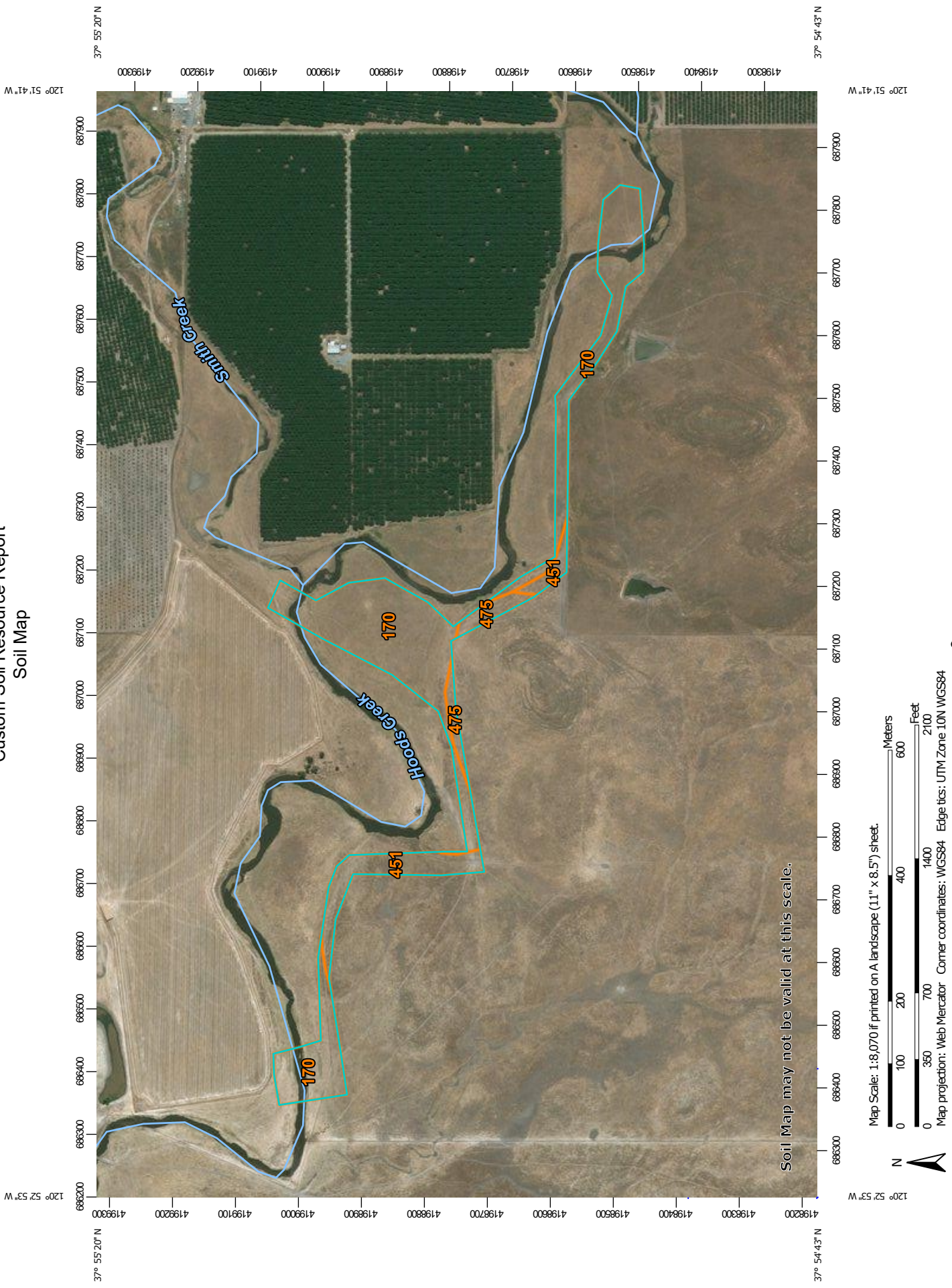
Custom Soil Resource Report

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 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 1:24,000.

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: Stanislaus County, California, Northern Part
Survey Area Data: Version 10, Sep 14, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 16, 2015—Mar 11, 2017

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
170	Hicksville loam, 0 to 2 percent slopes, occasionally flooded	16.7	78.5%
451	Pentz-Peters association, 2 to 15 percent slopes	3.3	15.5%
475	Pentz-Peters association, 2 to 50 percent slopes	1.3	6.0%
Totals for Area of Interest		21.2	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.

Stanislaus County, California, Northern Part

170—Hicksville loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: 1j3ck
Elevation: 130 to 230 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 230 to 260 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hicksville, loam, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hicksville, Loam

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 10 inches: loam
Bt - 10 to 45 inches: gravelly sandy clay loam
2Bt - 45 to 60 inches: stratified sandy loam, stratified clay loam
2Bt - 45 to 60 inches:

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Archerdale, clay loam

Percent of map unit: 6 percent
Landform: Stream terraces

Hydric soil rating: No

Peters, clay

Percent of map unit: 5 percent

Landform: Hillslopes

Landform position (two-dimensional): Footslope, toeslope

Microfeatures of landform position: Mounds, swales

Chuloak, sandy loam

Percent of map unit: 3 percent

Landform: Alluvial fans

Hydric soil rating: No

Nord, loam

Percent of map unit: 1 percent

Landform: Fan skirts

Hydric soil rating: No

451—Pentz-Peters association, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2x8l9

Elevation: 180 to 340 feet

Mean annual precipitation: 16 to 18 inches

Mean annual air temperature: 61 to 63 degrees F

Frost-free period: 325 to 340 days

Farmland classification: Not prime farmland

Map Unit Composition

Pentz, silt loam, and similar soils: 63 percent

Peters, silty clay loam, and similar soils: 25 percent

Minor components: 12 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pentz, Silt Loam

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Colluvium and/or residuum derived from water-reworked basic tuff

Typical profile

A - 0 to 6 inches: silt loam

Bw - 6 to 10 inches: silt loam

Bt - 10 to 12 inches: silt loam

Cr - 12 to 22 inches: bedrock

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Thermic Low Rolling Hills 14-20 PZ (R018XI163CA)
Hydric soil rating: No

Description of Peters, Silty Clay Loam

Setting

Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Colluvium and/or residuum derived from water-reworked basic tuff

Typical profile

A1 - 0 to 2 inches: silty clay loam
A2 - 2 to 6 inches: silty clay
A3 - 6 to 14 inches: silty clay
Cr1 - 14 to 15 inches: bedrock
Cr2 - 15 to 25 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
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: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D

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Ecological site: Clayey Dissected Swales 14-23 PZ (R018XI164CA)

Hydric soil rating: No

Minor Components

Redding, gravelly loam

Percent of map unit: 5 percent

Landform: Fan remnants

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Crest

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: Thermic Low Rolling Hills 14-20 PZ (R018XI163CA)

Hydric soil rating: No

Miltonhills

Percent of map unit: 5 percent

Landform: Eroded fan remnant sideslopes

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Convex

Ecological site: Low Elevation Foothills 18-25 PZ (F018XI200CA)

Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent

Landform: Hills

Hydric soil rating: No

Archerdale, clay loam

Percent of map unit: 1 percent

Landform: Stream terraces on drainageways

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: Miscellaneous - Cannot Be Correlated (R018XI999CA)

Hydric soil rating: No

475—Pentz-Peters association, 2 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2x8lb

Elevation: 180 to 380 feet

Mean annual precipitation: 16 to 18 inches

Mean annual air temperature: 63 degrees F

Frost-free period: 325 to 340 days

Farmland classification: Not prime farmland

Map Unit Composition

Pentz, silt loam, and similar soils: 62 percent

Peters, silty clay loam, and similar soils: 25 percent

Minor components: 13 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pentz, Silt Loam

Setting

Landform: Hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Colluvium and/or residuum derived from water-reworked basic tuff

Typical profile

A - 0 to 6 inches: silt loam

Bw - 6 to 10 inches: silt loam

Bt - 10 to 12 inches: silt loam

Cr - 12 to 22 inches: bedrock

Properties and qualities

Slope: 15 to 50 percent

Depth to restrictive feature: 10 to 20 inches to paralithic bedrock

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): 7e

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: D

Ecological site: Thermic Low Rolling Hills 14-20 PZ (R018XI163CA)

Hydric soil rating: No

Description of Peters, Silty Clay Loam

Setting

Landform: Hills

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Colluvium and/or residuum derived from water-reworked basic tuff

Typical profile

A1 - 0 to 2 inches: silty clay loam

Custom Soil Resource Report

A2 - 2 to 6 inches: silty clay
A3 - 6 to 14 inches: silty clay
Cr1 - 14 to 15 inches: bedrock
Cr2 - 15 to 25 inches: bedrock

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock; 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
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: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): 7e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Clayey Dissected Swales 14-23 PZ (R018XI164CA)
Hydric soil rating: No

Minor Components

Miltonhills

Percent of map unit: 5 percent
Landform: Eroded fan remnant sideslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Ecological site: Low Elevation Foothills 18-25 PZ (F018XI200CA)
Hydric soil rating: No

Redding, gravelly loam

Percent of map unit: 5 percent
Landform: Fan remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Thermic Low Rolling Hills 14-20 PZ (R018XI163CA)
Hydric soil rating: No

Archerdale, clay loam

Percent of map unit: 2 percent
Landform: Stream terraces on drainageways
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Miscellaneous - Cannot Be Correlated (R018XI999CA)
Hydric soil rating: No

Custom Soil Resource Report

Rock outcrop

Percent of map unit: 1 percent

Landform: Hills

Hydric soil rating: No

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Appendix F: Species Observed List

List of plant species observed within the BSA

Common Name (<i>Genus species</i>)	Native (N) / Non-native (X)	Cal IPC Rating
California poppy (<i>Eschscholzia californica</i>)	N	N/A
Common fiddleneck (<i>Amsinckia intermedia</i>)	N	N/A
Common dandelion (<i>Taraxacum officinale</i>)	X	N/A
Curly dock (<i>Rumex crispus</i>)	X (Invasive)	Limited
English plantain (<i>Plantago lanceolata</i>)	X (Invasive)	Limited
Foxtail barley (<i>Hordeum murinum</i>)	X (Invasive)	High
Himalayan blackberry (<i>Rubus armeniacus</i>)	X (Invasive)	High
Italian ryegrass (<i>Festuca perennis</i>)	X (Invasive)	Moderate
Ithuriel's spear (<i>Triteleia laxa</i>)	N	N/A
Pale spikerush (<i>Eleocharis macrostachya</i>)	N	N/A
Ripgut brome (<i>Bromus diandrus</i>)	X (Invasive)	Moderate
Soft chess brome (<i>Bromus hordeaceus</i>)	X (Invasive)	Limited
Sow thistle (<i>Sonchus asper</i> ssp. <i>asper</i>)	X	N/A
Spring vetch (<i>Vicia sativa</i>)	X	N/A
Wild geranium (<i>Geranium dissectum</i>)	X (Invasive)	Limited
Wild oat (<i>Avena fatua</i>)	X (Invasive)	Moderate
Wood fern (<i>Dryopteris arguta</i>)	N	N/A

List of wildlife species observed within the BSA

Common Name (<i>Genus species</i>)	Native (N) / Non-Native (X)
Avian Species	
American Crow (<i>Corvus brachyrhynchos</i>)	N
American kestrel (<i>Falco sparverius</i>)	N
American robin (<i>Turdus migratorius</i>)	N
Anna's hummingbird (<i>Calypte anna</i>)	N
Black phoebe (<i>Sayornis nigricans</i>)	N
Brewer's blackbird (<i>Euphagus cyanocephalus</i>)	N
Bullock's oriole (<i>Icterus bullocki</i>)	N
European starling (<i>Sturnus vulgaris</i>)	X
Fox sparrow (<i>Passerella iliaca</i>)	N
great blue heron (<i>Ardea herodias</i>)	N
Great Egret (<i>Ardea alba</i>)	N
House finch (<i>Haemorhous mexicanus</i>)	N
Mallard (<i>Anas platyrhynchos</i>)	N
Mourning dove (<i>Zenaida macroura</i>)	N

Northern Harrier (<i>Circus hudsonius</i>)	N
Red-tailed hawk (<i>Buteo lineatus</i>)	N
Red-winged black bird (<i>Agelaius phoeniceus</i>)	N
Turkey Vulture (<i>Cathartes aura</i>)	N
Western kingbird (<i>Tyrannus verticalis</i>)	N
Western meadowlark (<i>Sturnella neglecta</i>)	N
White-throated swift (<i>Aeronautes saxatalis</i>)	N
Mammal Species	
Domestic Cow (<i>Bos taurus</i>)	X
Cat (<i>Felis catus</i>)	N
American Badger (<i>Taxidea taxus</i>)	N

Appendix G: Representative Photographs



Photo-1: Representative of the disturbed grassland habitat present within the BSA, facing north; taken April 2019.



Photo-2: Representative of Shirley-Hoods Creek in the western portion of the Project area, where Orchard crossing will be located, facing west; taken April 2019.



Photo-3: Representative of the wetland located in the western portion of the Project area, facing east; taken April 2019.



Photo-4: Representative of the area for the Smith Creek crossing, facing northwest; taken April 2019.



Photo-5: Representative of the eastern portion of the Project area, where the Main crossing is proposed, facing east; taken April 2019.



Photo-6: Representative of the almond orchards adjacent to the Project area, facing southeast; taken April 2019.

Appendix H: OHWM Delineation Datasheets

Project: Whittles 3 BridgesDate: April 18, 2019Location: Stanislaus County, near FarmingtonInvestigator(s): Hanna Sheldon and Courtney Owens**Project Description:**

The project is located in a rural part of Stanislaus County. The purpose of the project is to build 3 bridges over Hoods Creek. The area is surrounded by almond and walnut orchards.

Describe the river or stream's condition (disturbances, in-stream structures, etc.):

The stream seems to be ephemeral and eventually merges with Rock Creek approximately 1.5 miles from the project area. Most of Hoods Creek, within the project area, is shallow (1-4 feet) but does include some pools of water up to 6 feet deep.

Off-site Information

Remotely sensed image(s) acquired? ☒ Yes ☐ No [If yes, attach image(s) to datasheet(s) and indicate approx. locations of transects, OHWM, and any other features of interest on the image(s); describe below] Description:

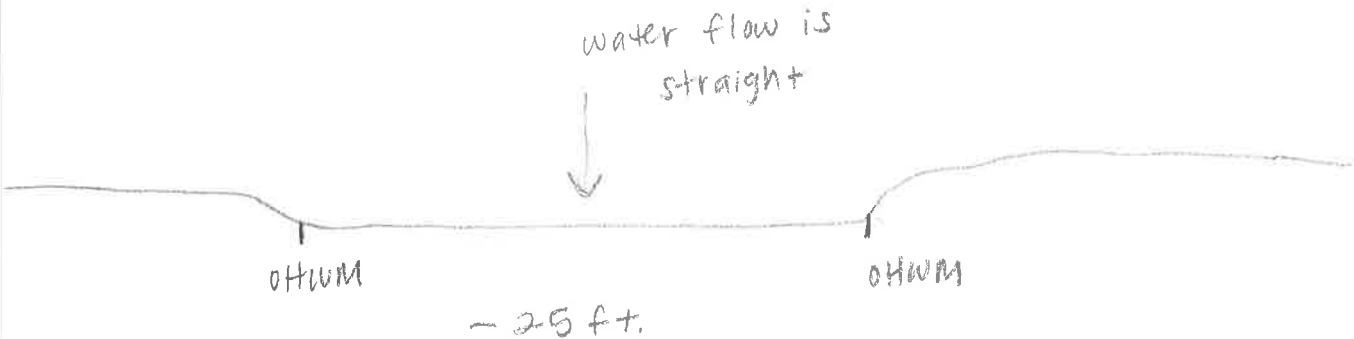
Hydrologic/hydraulic information acquired? ☐ Yes ☒ No [If yes, attach information to datasheet(s) and describe below.] Description:

List and describe any other supporting information received/acquired:

No wetlands in the project vicinity according to the National Wetland Inventory.

Instructions: Complete one cover sheet and one or more datasheets for each project site. Each datasheet should capture the dominant characteristics of the OHWM along some length of a given stream. Complete enough datasheets to adequately document up- and/or downstream variability in OHWM indicators, stream conditions, etc. Transect locations can be marked on a recent aerial image or their GPS coordinates noted on the datasheet.

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp ($> 60^\circ$) | ☐ Moderate ($30-60^\circ$) | ☒ Gentle ($< 30^\circ$) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	80%	15%	5%	0	0	N
Below OHWM	0	10%	15%	75%	0	N

Notes/Description: the water feature mostly contains cobbles and the sediment texture drastically changes above the OHWM.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

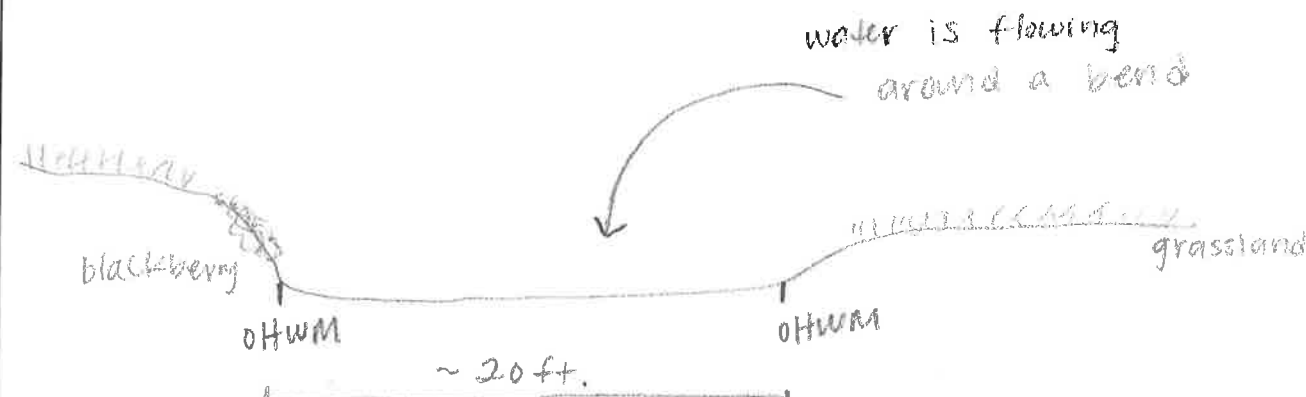
	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	<1%	0	98%	<1%
Below OHWM	0	0	<1%	99%

Notes/Description: The dominant vegetation are invasive grasses and the stream lacks emergent vegetation.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- water is flowing west
- there are shallow riffles present in the stream
- the water depth ranges from 1-2 feet deep
- no emergent vegetation

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☐ Sharp ($> 60^\circ$) | ☒ Moderate ($30-60^\circ$) | ☐ Gentle ($< 30^\circ$) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	45%	15%	40%	0	N
Below OHWM	0	45%	0	55%	0	N

Notes/Description: The cobbles were found mostly in the shallow portions and the deeper areas contained mostly sand.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

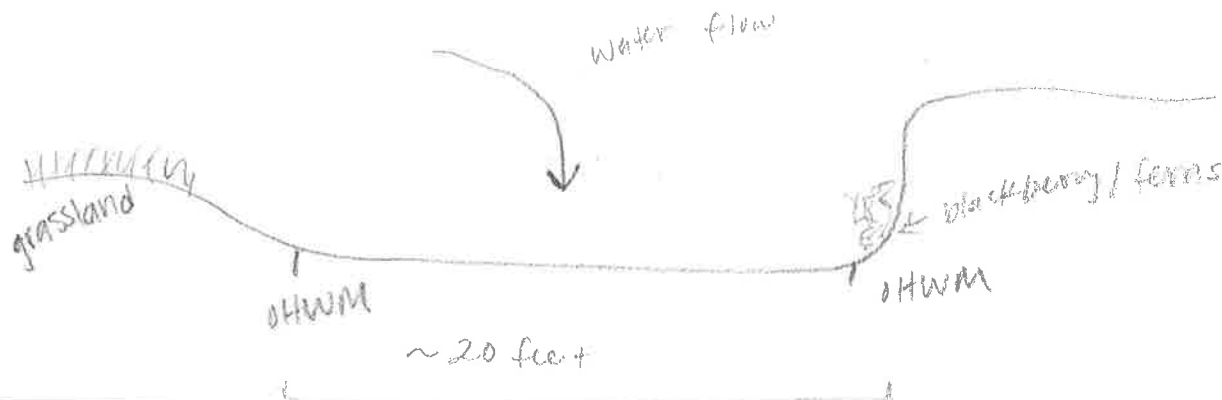
	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	41%	3%	95%	1%
Below OHWM	0	0	2%	98%

Notes/Description: There was some emergent vegetation forming in the center of the channel on a small island of cobbles and gravel.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- water is flowing around a bend, the water deepens and pools directly after the bend
- there are shallow riffles present
- the water depth ranges from 1-6 feet deep

Transect (cross-section) drawing: (choose a location that is representative of the dominant stream characteristics over some distance; label the OHWM and other features of interest along the transect; include an estimate of transect length)



Break in Slope at OHWM: ☒ Sharp ($> 60^\circ$) | ☐ Moderate ($30-60^\circ$) | ☐ Gentle ($< 30^\circ$) | ☐ None

Notes/Description:

Sediment Texture: Estimate percentages to describe the general sediment texture above and below the OHWM

	Clay/Silt <0.05mm	Sand 0.05 – 2mm	Gravel 2mm – 1cm	Cobbles 1 – 10cm	Boulders >10cm	Developed Soil Horizons (Y/N)
Above OHWM	0	85%	15%	0	0	N
Below OHWM	0	40%	20%	40%	0	N

Notes/Description: The stream contains a mix of sand and cobbles. On one side of the stream there is a sharp break in slope created by a huge rock wall.

Vegetation: Estimate absolute percent cover to describe general vegetation characteristics above and below the OHWM

	Tree (%)	Shrub (%)	Herb (%)	Bare (%)
Above OHWM	21	3%	96%	0
Below OHWM	0	0	2%	98%

Notes/Description: There is some emergent vegetation and some blackberry that hangs into one edge of the channel. Area is mostly dominated by non-native grasses.

Other Evidence: List/describe any additional field evidence and/or lines of reasoning used to support your delineation

- the water was very shallow, 1-3 feet deep
- slow moving water, flowing north

Appendix B – CULTURAL RESOURCES TECHNICAL REPORT

Whittles Crossing Project Stanislaus County, California



Cultural Resources Inventory Report

Stockton East Water District

Stanislaus County, California

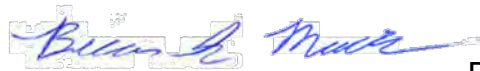
August 2019



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**Cultural Resources Inventory Report
for the
Whittles Crossing Project
Stanislaus County, California**

Prepared by:



Date: 8/19/19

Brian S. Marks, Ph.D., RPA
Dokken Engineering
110 Blue Ravine Rd., Ste. 200
Folsom, California 95630

Prepared for:

Stockton East Water District
6767 E Main Street
Stockton, California 95215

Archaeological and other cultural resources can be damaged or destroyed through uncontrolled public disclosure of information regarding their location. This document contains sensitive information regarding the nature and location of archaeological sites which should not be disclosed to unauthorized persons.

Information regarding the location, character, or ownership of a historic resource is exempt from the Freedom of Information Act pursuant to 16 U.S.C 470w-3 (National Historic Preservation Act) and 16 U.S.C. §470hh (Archaeological Resources Protection Act). In addition, access to such information is restricted by law, pursuant to Section 6254.10 of the California State Government Code.

MANAGEMENT SUMMARY

The Stockton East Irrigation District (District), proposes to construct crossings at three (3) locations over Shirley-Hoods Creek as part of the Whittles Crossing Project (Project) located in northern Stanislaus County, California (**Figures 1-2**). The Project will construct three crossings over the creek as well as create roadways to two of the crossings. The purpose of the project is to provide private agricultural access over the creek to adjacent agricultural lands.

The proposed project is subject to compliance with the California Environmental Quality Act (CEQA); the District is the project proponent and, therefore, the CEQA lead agency. The project is the construction of three farm crossings, which are considered exempt from Section 404 of the Clean Water Act. Therefore, no permit from the United States Army Corps of Engineers (USACE) Section 404 group for impacts to jurisdictional waters is required.

This document was prepared to assist the District in addressing potential impacts to historical resources and unique archaeological resources by the proposed undertaking. Efforts to identify potential historical resources in the Project Area Limits (PAL) are detailed in this report and include background research, a search of site records and survey reports on file at the Central California Information Center (CCIC), and a pedestrian ground surface inventory. The CCIC identified no previously recorded cultural resources within the PAL, but four prehistoric resources immediately adjacent to the PAL as well as four additional prehistoric cultural resources within 1 mile of the PAL. These eight prehistoric resources were recorded in the late 1940s and early 1950s and consist of campsites and resource procurement sites for the Native Americans. While none of these previously recorded resources would be impacted by the proposed project, it does suggest that the PAL has a high probability for containing additional cultural resources.

An archaeological pedestrian ground surface inventory survey was conducted by Dokken Engineering Archaeologist Brian S. Marks, Ph.D. on April 18, 2019 for the purpose of identifying and recording archaeological resources. Subsurface testing by Dr. Marks and archaeologist Michelle Campbell on May 8, 2019 revealed prehistoric flake debitage at two of the crossings. While material was found at the two eastern crossings (Main crossing), the two flakes at each crossing constitute a pair of isolated finds. It is recommended that cultural resources monitoring during ground disturbing activity be conducted to avoid potential adverse effects on historic properties.

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1.0 INTRODUCTION

Dokken Engineering was retained by the Stockton East Irrigation District (District) to conduct a cultural resources inventory for the Whittles Crossings Project (Project) located in an unincorporated area of Stanislaus County (**Figure 1 and 2**).

The District proposes to construct crossings at three (3) locations over Shirley-Hoods Creek for local agricultural uses. The three (3) Project areas are located within unincorporated Stanislaus County, California. The sites are located approximately 1.5 miles northwest of the unincorporated town of Eugene and approximately 7 miles east of the unincorporated town of Farmington (Figure 1. Project Vicinity). The Project site is only accessible through gated, private farm roads that are located off of Dunton Road (Figure 2. Project Location). Specifically, the Project has three (3) proposed crossings, Orchard crossing, located in Section 21, Smith Creek crossing, located in Section 22, and Main crossing, located in Section 27, all which lie within Township 1 North, Range 10 East of the Mount Diablo Base Meridian in the United States Geological Survey (USGS) Farmington, California and Bachelor Valley, California 7.5-minute topographic maps.

Each of the three (3) Project locations are anticipated to include the construction of three (3) crossings. All work will occur outside of the Ordinary High-Water Mark (OHWM), near the top of bank on either side of the Shirley-Hoods Creek at the Main, Smith Creek, and Orchard crossing locations. The crossings will be constructed using precast 8' span by 6' rise box culverts. The Main crossing will be 65 feet long, the Smith Creek crossing will be 70 feet long and the Orchard crossing will be 89' feet long. All crossings will be up to 24-feet wide. Each crossing will arrive on site as multiple precast box culvert section, each approximately 6 feet long. The full crossing width and length will be accomplished by securing multiple sections of precast box culverts together and adjacent to each other. The stream bed will be excavated approximately 4 feet below existing channel invert. A compacted 2-foot depth foundation of aggregate base rock will be installed upon which the culvert sections will be placed. The culverts will be backfilled to depth of 18-24 inches with the excavated streambed material. 6-inch concrete curbs will be installed on the top surface, along the upstream and downstream edges of the culverts. Concrete wing walls approximately 8 feet tall by 8 feet wide will be constructed at the approaches to retain the side slopes of the approach roads. Rock slope protection will be placed around each abutment to protect against erosion. Compacted road base will be added in the approach areas leading in and out of the crossings.

There is a current access road to the Main crossing that continues on to the vicinities of the Smith Creek and Orchard crossings. New access roads will also be constructed through regularly grazed grassland to allow for connection between the existing access road and two (2) of the proposed crossings, Smith Creek and Orchard crossings.

Existing water services provided by the District will remain active during Project construction. No road closures are anticipated to occur during construction and access to adjacent residences will be maintained. Temporary construction easements will be needed on a limited basis to accommodate the construction of the proposed crossings. No permanent land acquisition is anticipated to occur. Construction is anticipated to last one (1) month per location, for a total of three (3) months to complete all proposed construction activities.

The Project is locally funded; therefore, the District is the lead agency under the California Environmental Quality Act (CEQA). Shirley-Hoods Creek is a jurisdictional water of the U.S.; therefore, the District will obtain the appropriate permits for this Project. Regulatory permits anticipated for the proposed Project include; a Clean Water Act Section 401 Water Quality

Certification from the Regional Water Quality Control Board (RWQCB) and a Streambed Alteration Agreement under Section 1602 from the California Department of Fish and Wildlife (CDFW). As the Project will be constructing farm roads over the Shirley-Hoods Creek, the Project is exempt from the Section 404 of the Clean Water Act program; therefore, no permit from the United States Army Corps of Engineers (USACE) is required.

1.1 Description of the Project Area Limits

The PAL includes all ground-disturbing activities and staging areas required for the construction of the crossings and access roads for the Project as well as the installation of rip-rap upstream and downstream of the crossing abutments on Shirley-Hoods Creek. The horizontal PAL is 16.1 acres and includes staging areas, vehicle access along existing farm roads, vegetation clearing around the construction areas, the creation of roads to the crossings, and crossings (**Figure 3**). Temporary Construction Easements may include adjacent farmlands and farm roads for staging equipment and project site access. The vertical extent of the PAL is 8 feet below ground surface (bgs).

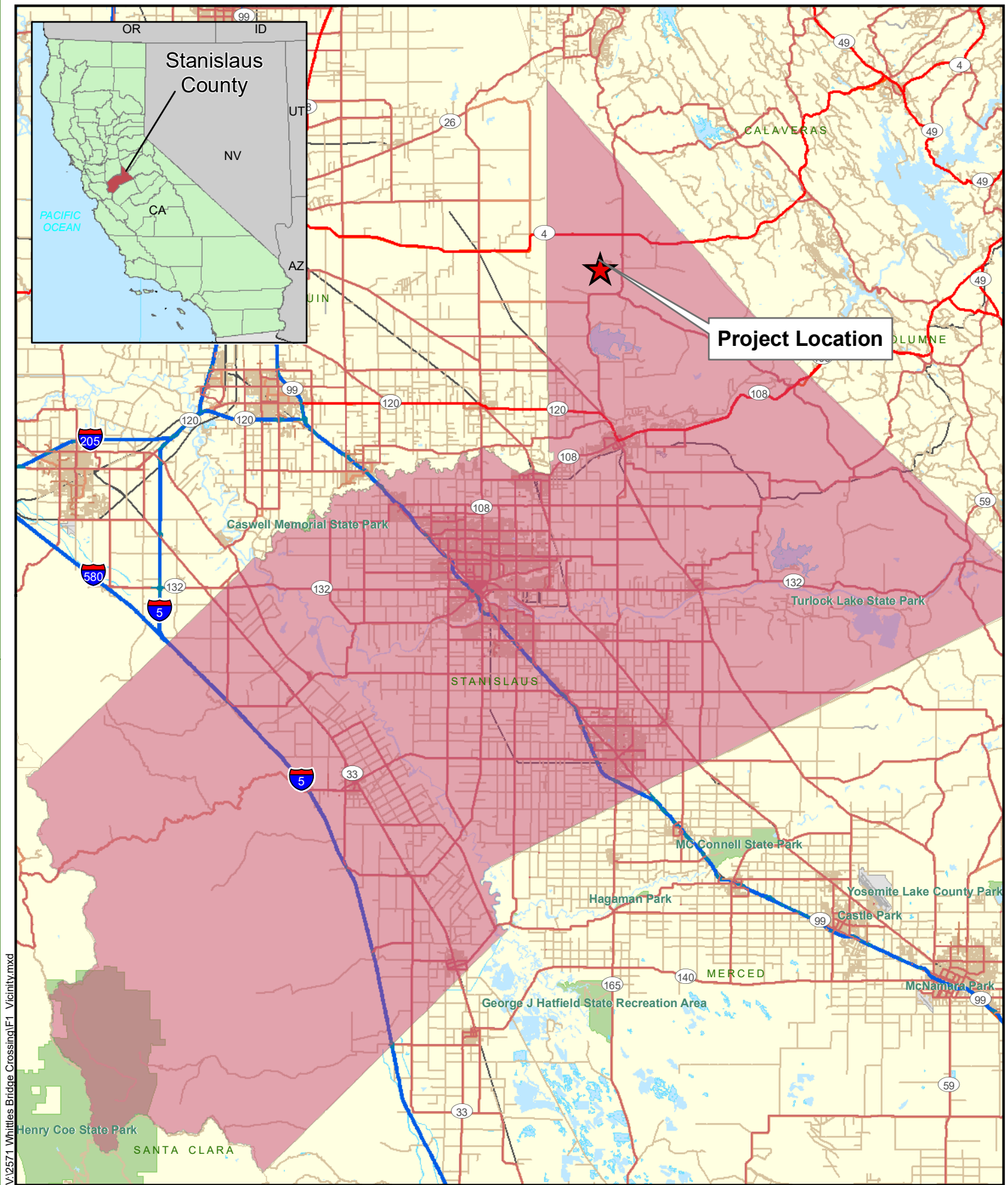
1.2 Regulatory Context

State Regulatory Context

The CEQA established statutory requirements for establishing the significance of historical resources in PRC Section 21084.1. The CEQA Guidelines (Section 15064.5[c]) also require consideration of potential project impacts to "unique" archaeological sites that do not qualify as historical resources. The statutory requirements for unique archaeological sites that do not qualify as historical resources are established in PRC Section 21083.2. These two PRC sections operate independently to ensure that significant potential impacts on historical and archaeological resources are considered as part of a project's environmental analysis. Historical resources, as defined in Section 15064.5 as defined in the CEQA regulations, include 1) cultural resources included in or eligible for inclusion in the California Register of Historical Resources (California Register); 2) cultural resources included in a local register of historical resources; 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in one of several historic themes important to California history and development. Under the CEQA, a project may have a significant effect on the environment if the project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of a historical resource that convey its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g). PRC Section 5024 also requires state agencies to identify and protect state-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the SHPO before altering, transferring, relocation, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

The CEQA and its Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

Figure 1. Project Vicinity



V:\2571 Whittles Bridge Crossing\F1_Vicinity.mxd

Source: ESRI 2008; Dokken Engineering 6/5/2019; Created By: brianm

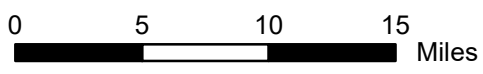
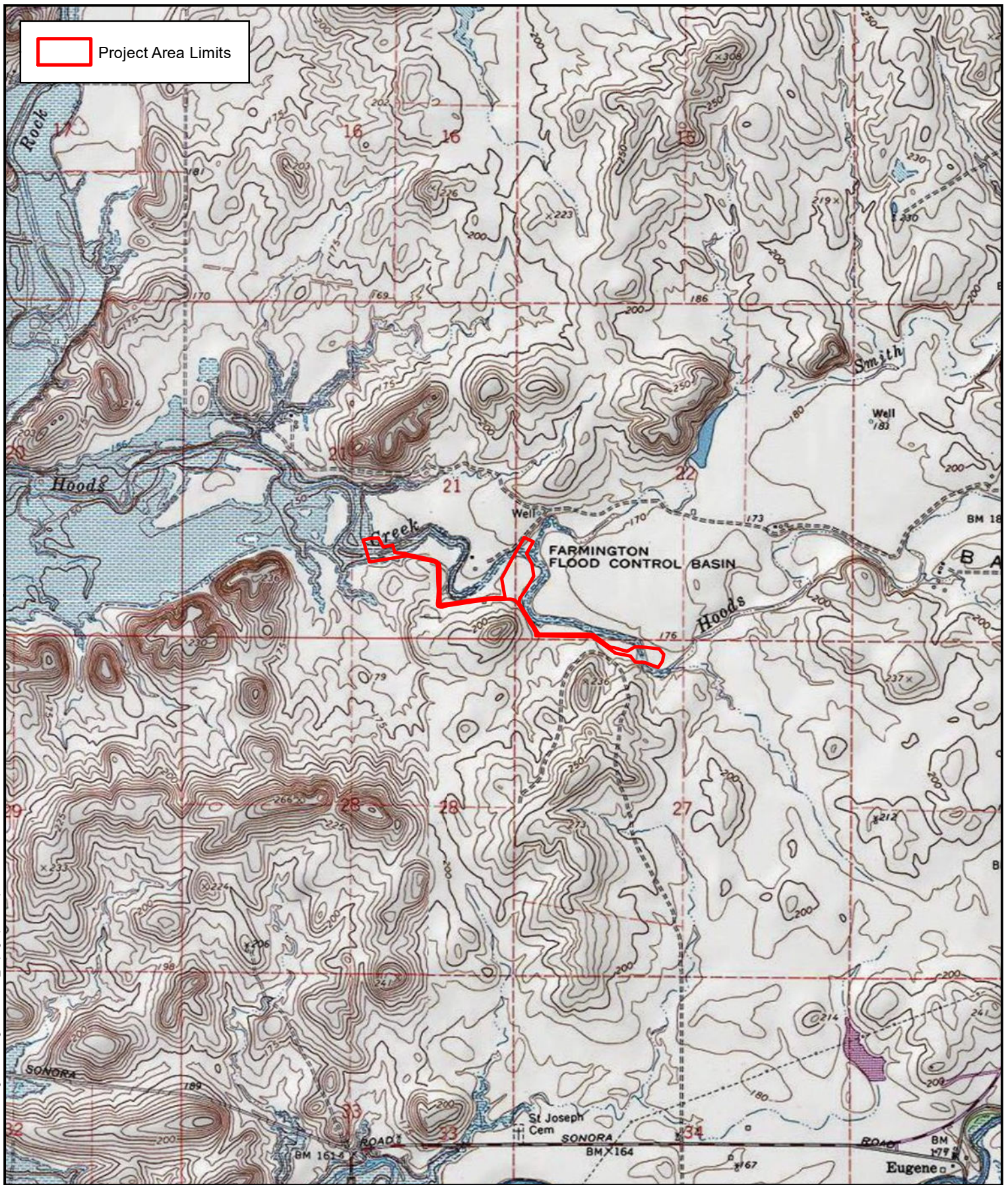
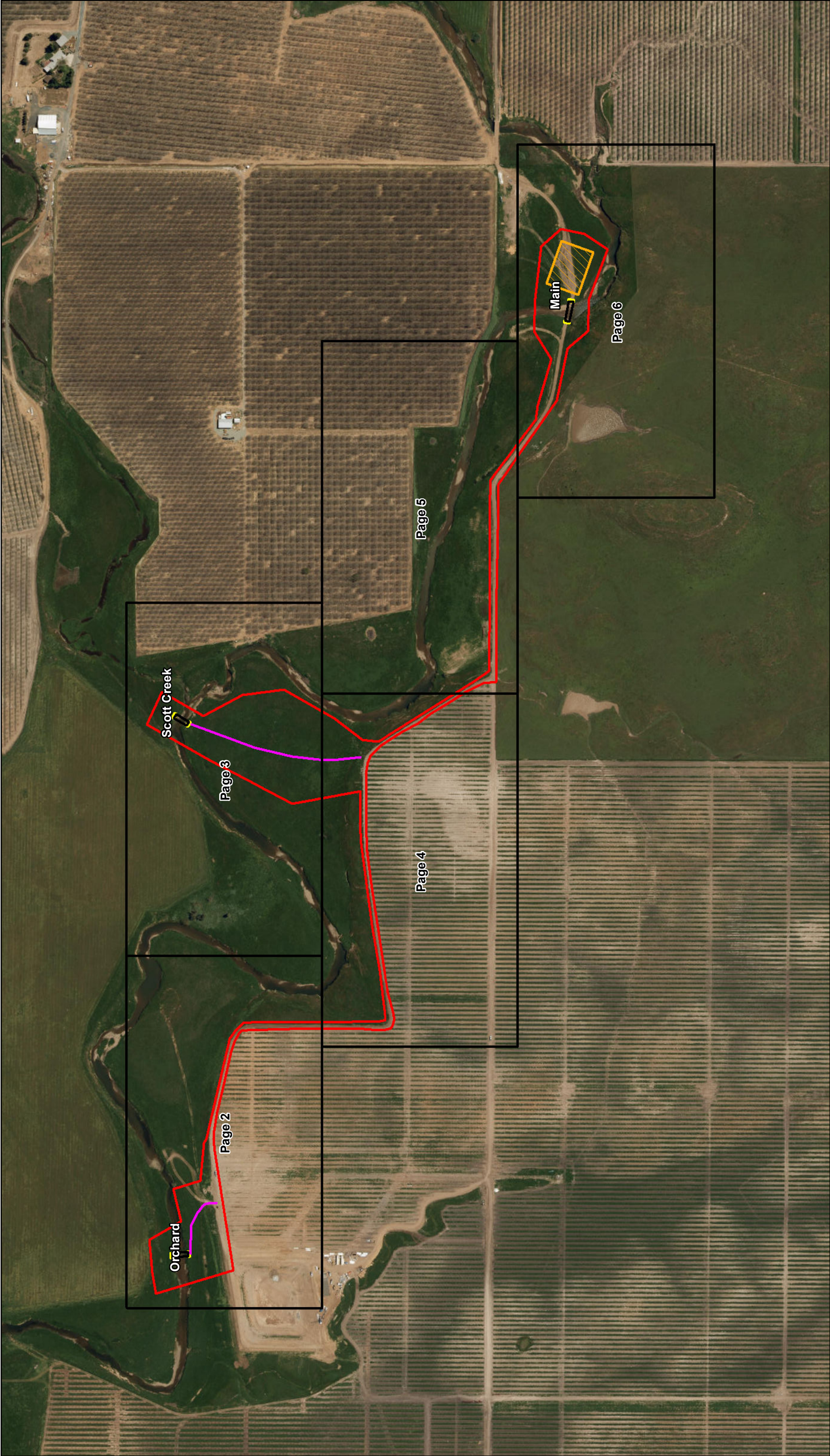


FIGURE 1
Project Vicinity

Whittles Bridges Project
Stanislaus County, California



Source: USA Topo Maps Online; Dokken Engineering 6/5/2019; Created By: brianm



Source: ESRI Maps Online; Dokken Engineering 8/19/2019; Created By: briann

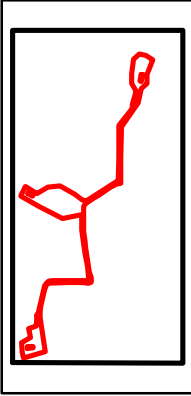
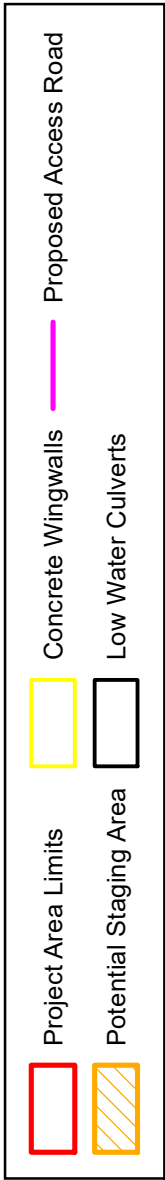
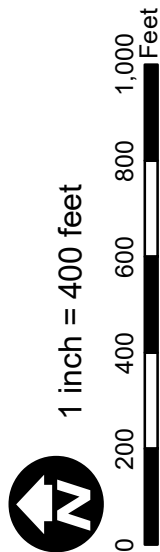
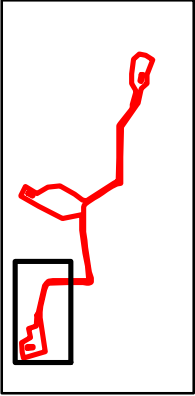
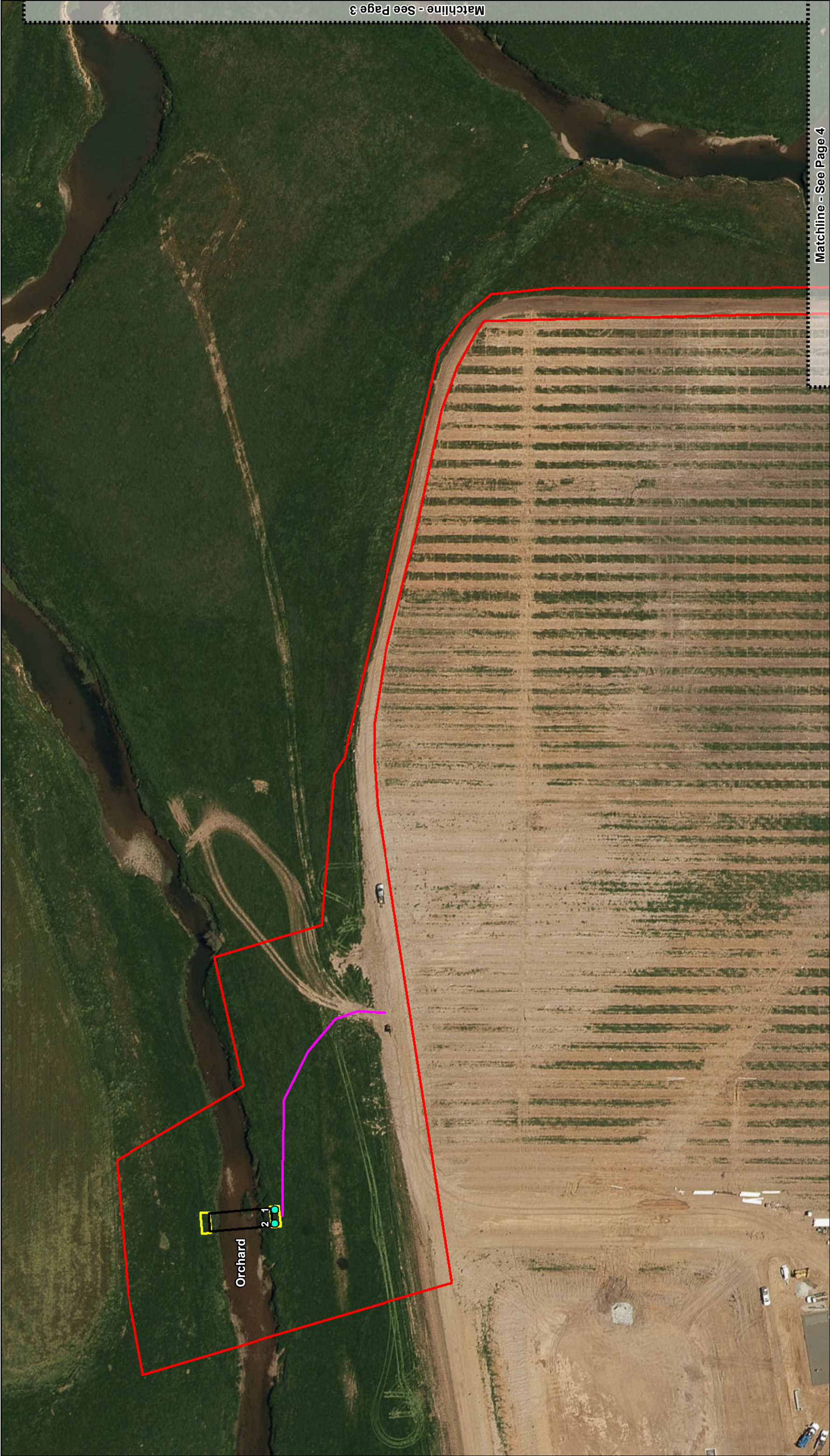


Figure 3
Project Area Limits
Page 1 of 6

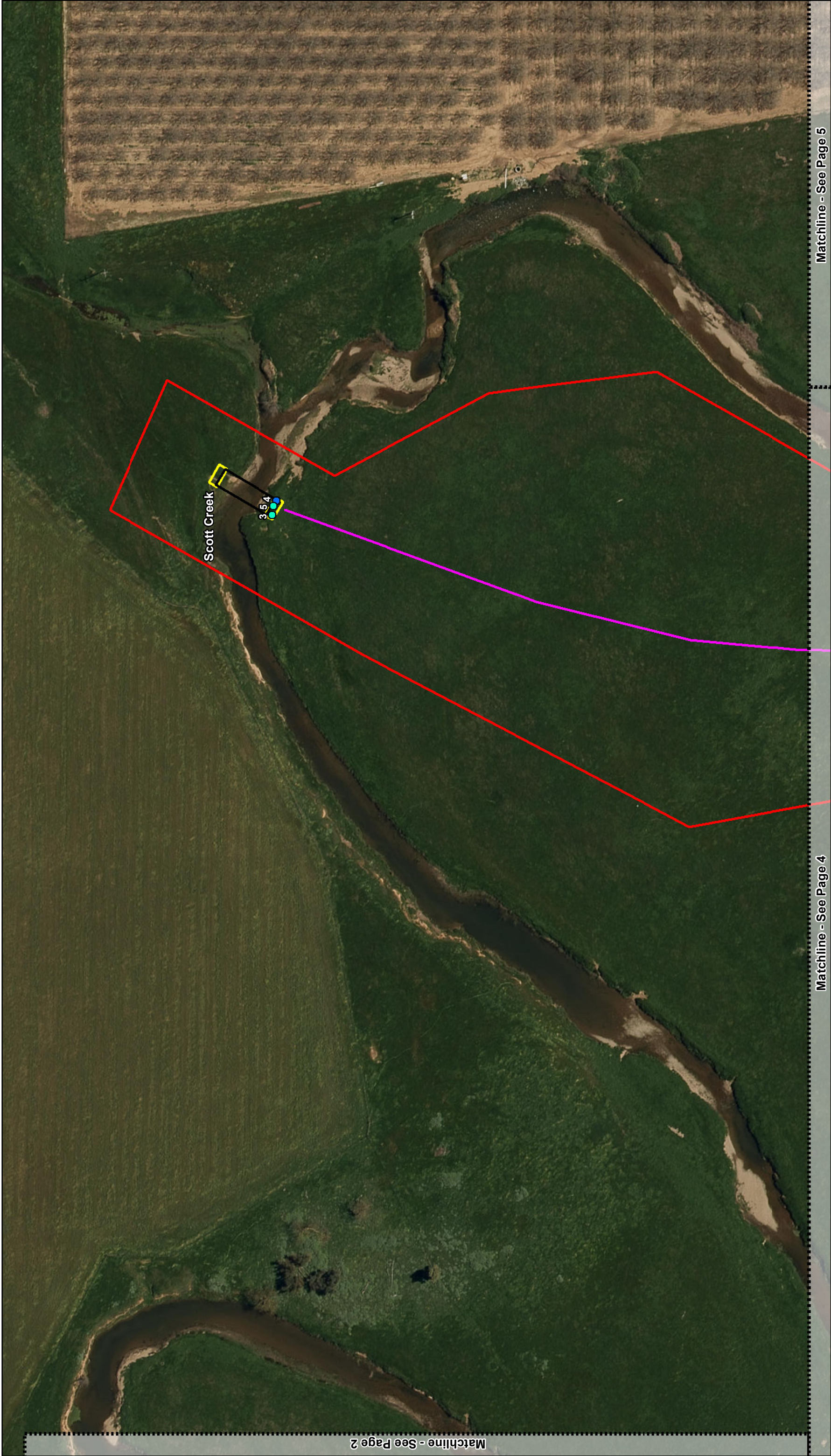


	Project Area Limits		Concrete Wingwalls		Proposed Access Road		Positive Test Pit
	Potential Staging Area		Low Water Culverts		Negative Test Pit		Surface Find

1 inch = 100 feet

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Feet

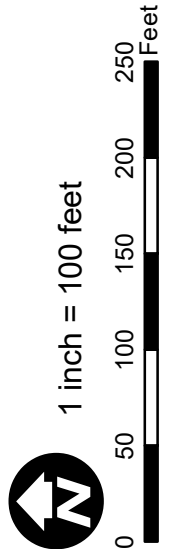


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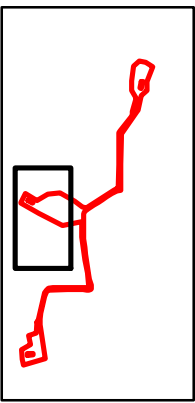
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Source: ESRI Maps Online; Dokken Engineering 8/19/2019; Created By: briannm



- | | | | | | | | |
|--|------------------------|--|--------------------|--|----------------------|--|-------------------|
| | Project Area Limits | | Concrete Wingwalls | | Proposed Access Road | | Positive Test Pit |
| | Potential Staging Area | | Low Water Culverts | | Negative Test Pit | | Surface Find |



Matchline - See Page 2

Matchline - See Page 3



Source: ESRI Maps Online; Dokken Engineering 8/19/2019; Created By: briann

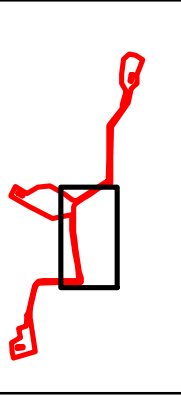
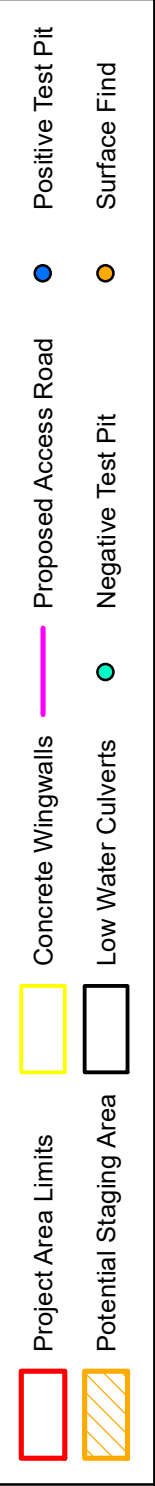
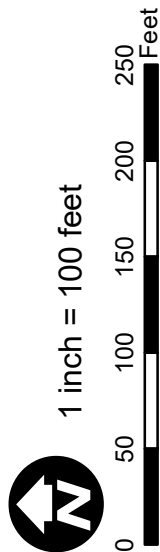


Figure 3
Project Area Limits
Page 4 of 6

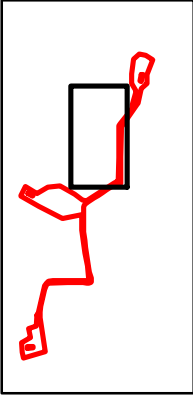
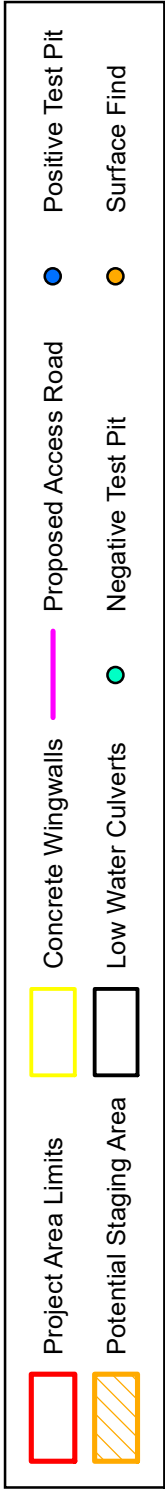
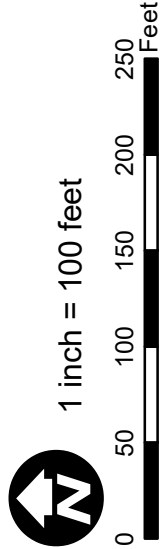


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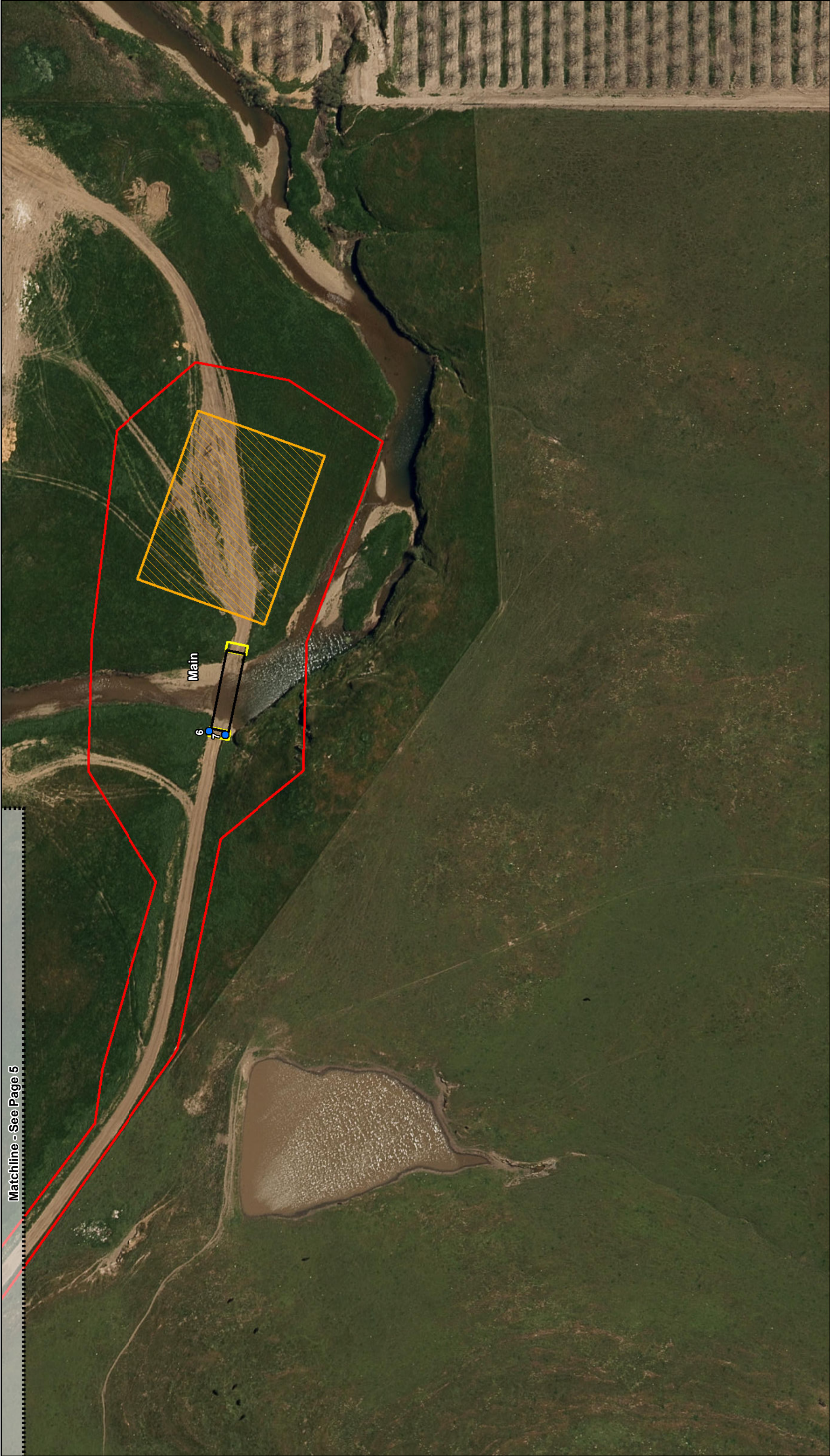
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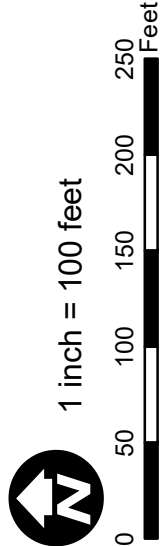
Source: ESRI Maps Online; Dokken Engineering 8/19/2019; Created By: briannm







Matchline - See Page 5



Source: ESRI Maps Online; Dokken Engineering 8/19/2019; Created By: briannm



	Project Area Limits		Concrete Wingwalls		Proposed Access Road		Positive Test Pit
	Potential Staging Area				Low Water Culverts		Negative Test Pit
							Surface Find

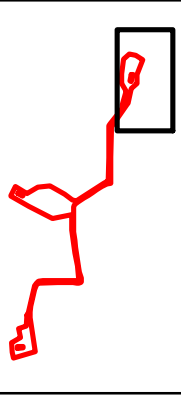


Figure 3
Project Area Limits
Page 6 of 6

Assembly Bill 52

Effective July 1, 2015, the CEQA was revised to include early consultation with California Native American tribes and consideration of Tribal Cultural Resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to TCRs. The CEQA now establishes that a “project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment” (PRC § 21084.2).

The District contacted the following tribes via email on March 29, 2019 for AB52 consultation:

- *Antonio Ruiz Jr. Cultural Resources Officer, Wilton Rancheria*
- *Michael Mirelez, Cultural resources Coordinator, Toretz Martinez Desert Cahuilla Indians*
- *Mike DeSpain, THPO/Consultation/CMT Assistance, Buena Vista Rancheria.*

Ralph Hatch, Executive Director for the Wilton Rancheria replied on April 1, 2019, requesting a copy of the CRIR and GIS shapefiles for the project. GIS shapefiles were provided on April 2, 2019, and Mr. Hatch was informed that a copy of this CRIR will be provided once the report is complete.

2.0 NATURAL AND CULTURAL CONTEXT

Brief sketches of applicable natural environment, prehistoric record, ethnographic information, and historic-era information are included for context of the PAL and surrounding area in order to determine the types of cultural resources which may be present within the PAL.

2.1 Natural Environment Setting

2.1.2 Geology, Soils, and Waterways

The project PAL is situated within the Great Valley (Central Valley) geomorphic range with the transition into the Sierra Nevada geomorphic range approximately 6 miles east (Norris and Webb 1976). Specifically, the PAL is within the Dissected Uplands sub region of the San Joaquin Valley (Sacramento Valley Air Basin 2005). The proposed project is situated over Shirley-Hoods Creek within the Bachelor Valley. One of the crossings will be located just west of where Smith Creek meets Shirley-Hoods Creek (Smith Creek crossing location). Adjacent lands are primarily agricultural with sparse residential houses present. Much of the surrounding area has been converted from grazing land to orchards with the most recent change occurring in 2016 along the southern edge of the PAL. The topography ranges between 150 and 175 feet above mean sea level (amsl) and consists of alluvium deposited by past streams in the vicinity around Shirley-Hoods and Smith Creek surrounded by Oligocene Mehrten Formation (23-33.9 million years old) (Wagner et al. 1991).

The underlying geologic deposits are responsible for the moderately well drained fine-loamy alluvium derived from igneous metamorphic and sedimentary rock. The entire PAL is made up of Hicksville loam, 0 to 2 percent slopes that is occasionally flooded (National Resources Conservation Services [NRCS] 2019). These soils are typically found within flood plains and alluvial fans and consist of very deep, moderately well drained soils. These soils contained an original vegetation of annual grasses, forbs, and scattered oak and are currently used primarily for intensive row, field, and orchard crops (NRCS 2019).

Shirley-Hoods Creek and Smith Creek are the primary water sources in the PAL. The creeks flow west where they meet up with Rock Creek, which meets up with Littlejohns Creek at Farmington Dam, 3 miles west of the PAL, and eventually into the San Joaquin River

2.1.3 Flora and Fauna

Flora

Historically, the regional vegetation near the PAL was dominated by grassland, upland, and riparian vegetation, associated primarily with the San Joaquin Valley. In modern times, the project vicinity is dominated by agricultural fields.

Disturbed annual grassland habitat is found throughout the PAL. Annual grassland habitat is defined as an herbaceous habitat that is a highly disturbed community dominated by non-native naturalized grasses and exhibits low levels of diversity. Grassland communities within the PAL are regularly disturbed by livestock grazing. The dominant grasses found within the AEP are foxtail barley (*Hordeum murinum*), ripgut brome (*Bromus diandrus*), wild oat (*Avena fatua*) and soft chess brome (*Bromus hordeaceus*).

Fauna

Typical fauna in the PAL include both prey and predatory species. Mammals include gophers, squirrels, badgers, jack rabbits, and coyotes. Birds include herons, blackbirds, crows, swallows, mallards, killdeers, sparrows, vultures, and hawks.

2.2 Cultural Setting

2.2.1 Prehistoric Context

Prehistoric sequences for the San Joaquin Valley have not been fully developed. Instead, sequences generated for the Sacramento Valley are used with the acknowledgement that a wide range of local and regional traditions are not incorporated. More recently a simple classification, originally developed by Fredrickson's adaptation of the Willey and Phillips period and stage integrative scheme has been refined to include further divisions based on radiocarbon determinations of sites within the San Joaquin Valley. Developed by Rosenthal et al (2007), the prehistoric sequences are divided into the following: Paleo-Indian (11,500-8550 cal B.C.), Lower Archaic (8550-5550 cal B.C.), Middle Archaic (5550-550 cal B.C.), Upper Archaic (550 cal B.C. to cal A.D. 1100), and Emergent (cal A.D. 1100 to Historic).

Paleo-Indian (11,500-8550 cal B.C.)

Not much is known from this era, as few sites can actually be confirmed. Currently, the southern basin of the Central Valley is believed to have very early occupation as indicated by the basally thinned and fluted projectile points found at a handful of sites. These types of projectile points are found in other parts in North America and have been dated to the interval between 11,550 and 9550 cal B.C (Rosenthal et al. 2007). It is also believed that early occupation could have occurred at the Witt site (KIN-32) which contained hundreds of early concave base points along a remnant shoreline of Tulare Lake. Additional early sites discoveries are needed to better define this era.

Lower Archaic (8550-5550 cal B.C.)

This period is defined by only a few isolated finds and one site – KER-116, associated with deeply buried soil on the ancient shoreline of Buena Vista Lake. Artifacts include stemmed points, chipped stone crescents, concave base points, wide stemmed points, and bi-pointed “humpies” (most likely used in light-duty woodworking tasks), all discovered within the Tulare Lake basin (Rosenthal et al. 2007; Sampson N.D.). Other points found within the Tulare Basin include Lake Mojave, Silver Lake, and Pinto points similar to those found in the Great Basin. Ker-116 produced few finds but included stone crescents, stemmed projectile point fragment, a carved stone atlatl spur, human skull fragments, and evidence of freshwater fish, waterfowl, freshwater mussels, and artiodactyl exploitation. As neither milling tools nor seeds were recovered, plant use remains unknown during this period in the valley. However, numerous milling tools (handstones, millingslabs, cobble-core tools) have been recovered from sites in the Sierra Nevada and Coast Range foothills which indicate that adjacent populations were indeed exploiting plants as an important resource (Rosenthal et al. 2007). The relationship between the valley cultures and the foothill cultures continues to remain unknown until more archaeological sites are found. As with the Paleo-Indian period, no burial preferences are known and no evidence of housing has yet to be encountered.

Middle Archaic (5550-550 cal B.C.)

During this period, the wetter, cooler climate of the Pleistocene/Holocene transition is replaced by warmer and drier conditions. Desiccation of Tulare Lake occurs, but new wetland habitat forms in the Central Valley as rising sea levels create the Sacramento-San Joaquin Delta. Unlike the two previous periods, much more is known about the cultures during the Middle Archaic and there

appear to be two distinct cultural traditions based on settlement-subsistence adaptations – the foothill traditions and the valley traditions (Rosenthal et al. 2007).

The Foothill Tradition deposits are characterized by expedient cobble-based pounding, chopping, scraping, and mulling tools. Evidence from CAL-789, CAL-629/630 and FRE-61 has revealed that acorn and pine nuts were the main plant food exploited. Projectile points include notched, stemmed, thick-leaf, and narrow concave base darts. Assemblages seem to only include flake and/or groundstone utilitarian tools used in food procurement and processing. No bone or shell tools or ornamentation have been identified. Earth ovens and hearths are common and several burials capped by cairns of unmodified rock and/or milling equipment have been encountered (Rosenthal et al. 2007).

Evidence of the Valley Tradition is scarcer due to the geomorphic changes that occurred through the valley during the Pleistocene – Holocene transition. Few isolated artifacts and four sites comprise the total body of evidence for the culture during the early Middle Archaic. The later portions of the Middle Archaic have significantly more associated sites and showcase diverse material culture. Assemblages point to an adaptive pattern of extended inhabitation along major watercourse corridors. Material culture include mortar and pestles, gorge hooks, composite bone hooks, spears (fishing), notched pebble net sinkers, leaf-shaped points, martis corner-notched point, contracting-stemmed points, basketry, basketry awls, pottery and baked clay objects, stone plummets, bird bone tubes, shell and obsidian beads, and other personal ornamentation (Rosenthal et al. 2007). Faunal assemblages reveal exploitation of diverse ecosystems which include marshes, riparian forests, and grasslands. Lastly, there are numerous burials recovered from this period. The Windmill Pattern is very prevalent and consists of westerly oriented, ventrally and dorsally extended burials. Included with the burials are extensive grave offerings. While certainly the most prominent example of burials, flexed burials are not uncommon (Rosenthal et al. 2007).

Upper Archaic (550 cal B.C. to cal A.D. 1100)

This period corresponds with the abrupt return to cooler, wetter climate conditions seen in the late Holocene. Tulare Lake filled as did many other lakes that were desiccated during the Middle Archaic. Cultural diversity is even greater during this time period than before and is marked by burial postures, artifact styles and other material culture (Rosenthal et al. 2007). Different geographic areas witnessed slightly different material cultures or resource dependence, but in general, this time period experienced new tool technology and settlement preferences. New bone tools and implements are present and reliance on manufactured goods such as beads obsidian bifacial rough-outs, and ceremonial blades are evident. Many sites show a preference for seasonal food resources that could be collected and stored in bulk, such as acorns, salmon, shellfish, rabbits, and deer (Rosenthal et al. 2007). Settlements are marked by large mounded villages with fire-cracked rock, shallow hearths, rock-lined earth ovens, and house floors. While evidence of somewhat large settlements is present, more seasonal habitation also occurs. Flexed burials become more common as this preference slowly phased out the Windmill Pattern (Rosenthal et al. 2007).

Emergent (cal A.D. 1100 to Historic)

Several patterns have been identified during the Emergent period, including the Augustine Pattern in the lower Sacramento Valley and the Sweetwater and Shasta Complexes in the northern Sacramento Valley. No such formal pattern has been established for the San Joaquin Valley as of yet. In general though, archaic material culture assemblages are replaced by those used during contact with Europeans (Rosenthal et al. 2007). Settlements become much larger and are located at places along watercourses where fish weirs had been constructed (Rosenthal et al. 2007).

Material culture appears to be defined by two broad phases: the Lower Emergent and the Upper Emergent. The Lower is defined by the appearance of banjo-type *Haliotis* ornaments as well as elaborately incised bird bone whistles and tubes, flanged soapstone pipes, and rectangular *Olivella* sequin beads (Rosenthal et. al 2007). The Upper is defined by small corner-notched and desert series points, *Olivella* lipped and clam disk beads and bead drills, magnesite cylinders, and hopper mortars. Village sites roughly corresponding to later known ethnographic settlements is also prevalent (Rosenthal et al. 2007).

Diverse material culture is abundant throughout the Emergent period and includes new types of tools and technologies such as the bow and arrow. Other tools include harpoons, fish hooks, netting, basketry, pottery (Cosumnes brownware), baked clay balls, human and animal baked clay effigies, serrated points, Panoche side-notched point, cottonwood points, Gunther-barbed points, and Desert side-notched points (Rosenthal et. al 2007). Plant exploitation is still very prevalent with countless mortars and pestles found in assemblages. Burial preferences continue to diversify during the Emergent period and contain various postures. Most contain grave offerings consisting of both utilitarian and decorative items, with some being ritually “killed” before burial (Rosenthal et al. 2007).

2.2.2 Ethnography

The project lies in a region thought to be held by branches of the Yokutsan and Utian Families of the Penutian Stock (Shipley 1978). Conventional wisdom dictates that the project area lies within an area held by both the Northern Valley Yokuts (Wallace 1978). The Northern Valley Yokuts traditionally occupied an area stretching from the Calaveras River in the north to Fresno in the south, with the San Joaquin River forming the core of their territory. To the north and east were the neighboring Eastern Miwoks while the Costanoans occupied territory to the west. Although at least some territory competition occurred, trade was prevalent.

Due to the preferred settlements near the San Joaquin and its tributaries, the Yokuts took advantage of the wide variety of fish species which included white sturgeon, river perch, western suckers, Sacramento pike, and of course king salmon. This variety allowed the Yokuts to have access to fish year-round. Water fowl and perhaps some big game were most likely hunted, but to a much lesser extent than the more easily accessible fish. Like elsewhere in the region, acorn harvesting played a large role in subsistence gathering. A single valley oak can yield 300-500 pounds or more a year of acorns. In addition to gathering and processing acorns, tule roots were also gathered and ground into meal (Wallace 1978).

Settlement was relatively sedentary with low mounds along the water courses particularly favored for occupation. The low mounds allowed the settlements to remain close to the rivers and streams, yet out of the annual flood plains. Major settlements were thought to have populations of roughly 200-250 people (Cook 1955). Dwellings consisted of small, oval structures, usually constructed from woven tule stalks. Archaeological excavation has revealed that the dwellings most likely had hard-pack floors ranging from 25-40 feet in diameter and sunk approximately one to two feet below the ground surface. Very little historic documentation or archaeological remains shed light on additional structures that must have been present. It is thought that earth-covered sweathouses and ceremonial lodges most certainly were located in each major settlement. Exact size, shape, and number of these structures are still unknown (Wallace 1978).

Stone tools were preferred for processing plant foods and included the mortar and pestle. Hand and milling stones seemed to have been used with less frequency. The majority of stone tools consisted of arrow points, knives, and scrapers manufactured from pieces of chert, jasper and

chalcedony found in the area. Obsidian was an imported resource and is not as ubiquitous. The Yokuts also utilized tules to weave an assortment of baskets and fashion rafts (Wallace 1978).

Trade occurred with neighboring tribes such as the Miwok and Costanoans. The Yokuts supplied dog pups in exchange for baskets and bows and arrows with the Miwok. The Costanoans provided mussels and abalone shells (Wallace 1978).

2.2.3 Historic Context

Lieutenant Gabriel Moraga left the Mission San Jose September 21, 1806 and was the first European to enter the San Joaquin Valley to explore the Californian interior in search of suitable locations for missions. During his exploration, Moraga named the Stanislaus River, which was later used to designate the county.

In 1827, Euro-American trappers, including Jedediah Strong Smith, began to enter the region to hunt the fur-bearing animals that inhabited the Central Valley. Settlement of the valley was aided by the issuing of land grants by governors that gave settlers large sections of land to use for farming and raising cattle. Prior to the Gold Rush, the San Joaquin Valley was devoted to grazing and hunting, as immense herds of cattle and some horses roamed the valley (Hoover, et. al, 1990; p.517).

With the discovery of gold in 1848, the San Joaquin Valley was developed to become an agricultural resource and produce the food needed to support the miners. Some miners turned to farming in the fertile swamp lands in the San Joaquin Valley. Stanislaus County was formed 1854 out of portions of Tuolumne County.

The town of Farmington, in San Joaquin County, is approximately 7 miles west of the PAL and was a successful town as a farming community during the gold rush. The name of the town was purposeful to differentiate the town from the surrounding mining communities (Hoover, et al, 1990).

The PAL was predominately used for cattle grazing until the recent installation of almond trees in 2016.

3.0 BURIED ARCHAEOLOGICAL RESOURCE POTENTIAL

The PAL is located over Shirley-Hoods Creek which is a naturally perineal stream which attracted human activity. The records search results indicated that there were eight prehistoric cultural resources that have been previously recorded within a 1-mile radius of the PAL, four of which were documented immediately adjacent to the PAL. Alluvial deposits are present in the PAL and surrounding area from past streams in the vicinity that date to the Quaternary to Holocene (approximately 11,500 B.P.) (Wagner et al. 1991). The proximity of water sources, underlying geologic deposits, and nearby previously recorded cultural resources suggest that the archaeological site potential within the project vicinity is *high*. Due to the depositional nature of the environment, the buried cultural deposit potential for the project vicinity would also be considered *high*.

Some portions of the eroding banks of the stream channel, as well as the surrounding agricultural fields offered an excellent opportunity to visually inspect the recently exposed subsurface soils for indications of buried cultural resources during the April 18, 2019 archaeological pedestrian field inventory survey (see field photographs in **Appendix A**). As the area was used for cattle grazing, there was little modification of the landscape. While no modified material, soil discoloration, human remains, or other indicator of past human activity was observed, the surface visibility was limited due to high grasses. The lack of surface visibility necessitated additional subsurface testing, which was conducted on May 8, 2019 and resulted in several prehistoric flakes being recovered. Therefore; the buried archaeological site potential within the PAL is considered *high*.

4.0 INVENTORY METHODS AND RESULTS

In order to determine the necessary level of historic property identification efforts for the proposed undertaking and to better understand the types of cultural resources likely to be encountered in the PAL during subsequent survey, a variety of resources were consulted. Sources included a records search at the Central California Information Center (CCIC), literature, aerial imagery, and historical map review, and consultation with the Native American Heritage Commission (NAHC).

4.1 Records Search

A records search (File No. 11046N) of the PAL and a 1-mile study area buffer was requested from the CCIC on April 17, 2019. The search examined the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), the Directory of Properties in the Historic Property Data File, the *California Historic Landmarks* (1996), the *California Inventory of Historic Resources* (1976), and the *California Points of Historical Interest* listing (May 1992 and updates). Additional research efforts conducted outside the CCIC included a review of historic USGS topographic maps, and other pertinent historic data specific to Stanislaus County. The CCIC records search results are located in **Appendix B** of this document.

4.1.1 Previous Survey Coverage

The CCIC identified two previous cultural resource investigations conducted in the PAL, depicted in **Table 1**, below. These previous surveys covered 100 percent of the PAL. Two previous cultural resource investigations were conducted within a 1-mile radius of the PAL. These investigations are detailed in **Table 1**, below.

Table 1. Previous Cultural Resource Studies within 1-Mile of the PAL

Author	Date	Title	CCIC #	In PAL?	Resources Recorded?
Archeo-Tec	1988	An Archaeological Surface Reconnaissance of the Farmington Canal Phase II Project, Stanislaus and San Joaquin Counties, California.	ST-00852	Yes	No
Treganza, A.E.	1956	Sites Selected for Excavation.	ST-00939	No	No
True, D.L and C. Slaymaker	1981	Archaeological Investigations for the Oakdale Irrigation District, Oakdale, California.	ST-01670	No	No
Riddell, D.	1948	Appraisal of the Archaeological Resources of Farmington Reservoir, Littlejohns Creek, [Calaveras], San Joaquin and Stanislaus Counties, California. River Basin Survey.	ST-08510	Yes	No

Source: CCIC (2019)

4.1.2 Previously Recorded Cultural Resources

No previously recorded cultural resources have been identified within the PAL. Eight previously recorded cultural resources have been reported to the CCIC within 1 mile of the PAL. These are detailed in **Table 2** below.

Table 2. Previously Recorded Cultural Resources within 1 Mile of the PAL.

Primary	Trinomial	Resource	Prehistoric or Historic	Distance from PAL
P-50-000093	CA-STA-000006	Resource Name - Sta-6	Prehistoric	0.95 miles northwest
P-50-000101	CA-STA-000014	Resource Name - Sta-14	Prehistoric	0.9 miles west
P-50-000102	CA-STA-000015	Resource Name - Sta-15	Prehistoric	0.4 miles west
P-50-000103	CA-STA-000016	Resource Name - Hoods Creek (farm)	Prehistoric	0.1 miles north
P-50-000189	CA-STA-000103	Resource Name - Stuart or Steward Ranch	Prehistoric	0.95 miles east
P-50-000190	CA-STA-000104	Resource Name - Stuart or Steward Ranch	Prehistoric	0.1 miles east
P-50-000191	CA-STA-000105	Resource Name - Stuart Ranch or Steward Ranch	Prehistoric	0.05 miles east
P-50-000192	CA-STA-000106	Resource Name - Stuart or Steward Ranch	Prehistoric	0.05 miles east

Source: CCIC (2019)

4.2 Other Sources Consulted

Bureau of Land Management, General Land Office Records

BLM, GLO records indicate the original land survey was conducted in 1855. The plat map (BLM, GLO 1855) for Township 1 North, Range 10 East maps the original land survey of the PAL and surrounding area. Sections 20 and 21 depict a creek running east west through the area (BLM, GLO 1855).

Historic Maps and Aerial Images Review

A historic map review indicated the natural, intermittent stream channels of Shirley-Hoods Creek (labeled Shirley-Hoods Creek on all topographic maps) was present in the PAL on 1916 *Bachelor Valley, California* USGS topographic maps. Milton Road is depicted with the modern alignment, as is a farm complex across Shirley-Hoods Creek from the PAL.

Aerial photographs as early as 1959 show agricultural activity to the north of the PAL, on the northern side of Shirley-Hoods Creek and the structures are visible until the 1993 aerial.

The NAHC was contacted with a request for a Sacred Lands File Search on April 16, 2019. Negative results were returned on May 6, 2019.

4.3 Field Inventory Methods

On April 18, 2019, Dokken Engineering archaeologist Brian S. Marks, Ph.D. conducted a ground surface inventory of the PAL. Five-meter wide pedestrian transects were used in the areas of the crossing work, and 15-meter transects in other areas, where appropriate, to inspect the ground surface. All cut banks, stream banks, burrow holes, and other exposed sub-surface areas were visually inspected for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits. In addition, the gravel bars within the Shirley-Hoods Creek were inspected as well.

Due to the area having high buried archaeological site sensitivity, subsurface testing was conducted by Dr. Marks and Michelle Campbell. Tests were approximately 30 cm in diameter and dug to at least 50 cm below ground surface. Material was screened through ¼" mesh and any cultural material observed was recovered. The material was then photograph and described in the notes and returned to the hole that was excavated. Tests were placed at each crossing location, on the south or west side of the crossing, depending on crossing orientation, within the proposed abutment location. Tests were not placed on the other side due to lack of access (Orchard and Smith Creek crossings) or tests would have impacted the existing roadway (Main crossing). Two tests were placed at the Orchard and Main crossings, and three tests were placed at the Smith Creek crossing.

Photographs documenting the PAL were taken throughout the inventory and are included in **Appendix A**.

4.4 Field Inventory Results

The pedestrian ground surface inventory survey did not identify any archaeological sites, features, or artifacts during the April 18, 2019 surface inventory. The ground surface throughout the PAL was covered with grasses that reduced surface visibility to approximately 20 percent or less. Areas where the grass had been removed or had died were thoroughly inspected and did offer over 80 percent surface visibility. Material suitable for stone tool manufacturing was observed; however, no definitive artifacts were located. Modern resources noted and not discussed in this document include nails, threaded bolts, fencing, and modern trash. During the subsurface testing on May 8, 2019, a large green stone flake was observed on the surface within the orchard area to the south of the Smith Creek crossing (**Figure 3, Page 4**). This flake was in a disturbed context and was located outside the PAL.

The subsurface testing revealed three positive shovel tests, one from the Smith Creek crossing location and two from the Main crossing location. The two tests at the Orchard crossing location were negative for cultural material. The tests at the Smith Creek crossing revealed one positive test and two negative tests. The positive test revealed one whiteware fragment from approximately 40cm below ground surface and two greenstone flakes from approximately 50cm below ground surface. The two tests at the Main crossing were dug on the banks of the existing low water crossing road, the northern test revealed one small fine grain basalt flake and the southern test revealed one larger green stone fragment that appears to exhibit unifacial flaking.

Table 3: Shovel Test Results

Test No.	Crossing	Location	Results
1	Orchard	Southeast corner	Negative
2	Orchard	Southwest corner	Negative
3	Smith Creek	Southwest corner	Negative
4	Smith Creek	Southeast corner	Two greenstone flakes, one whiteware fragment
5	Smith Creek	South central	Negative
6	Main	Northwest corner	One fine grain basalt flake
7	Main	Southwest corner	Green stone unifacial scraper fragment.

Photographs from the ground surface inventory are provided in **Appendix A**.

Pursuant to 36 CFR 800.4(c), as a federal undertaking has been initiated, National Register criteria must be applied to any resources identified within the PAL that has not yet been previously evaluated for National Register eligibility.

As no cultural resources were observed during the course of the survey, there are no historic properties documented within the PAL. However, based on the high buried site sensitivity, it is possible the Project could encounter buried cultural resources, which would then require evaluation. If those resources are found to be eligible for the NRHP, then the project could have an adverse effect on historic properties.

As outlined above, there were no cultural resources within the PAL. Listing or eligibility for inclusion in the National Register is the primary consideration in determining whether cultural resources (i.e. districts, sites, buildings, structures, and object) qualify as “historic properties”. As such, the identified cultural resources are not considered historic properties and a finding of no historic properties affected for the proposed project is recommended at this time. However, due to the high sensitivity for the PAL, the likelihood of encountering cultural resources that could qualify as a “historic property” is high. This would result in the project having an adverse effect on historic properties. Archaeological testing and/or monitoring within the areas of excavation by a qualified archaeologist is recommended to avoid potential impacts to cultural resources.

5.0 RECOMMENDATIONS AND CONCLUSIONS

The proposed project involves the construction of crossings at three locations over Shirley-Hoods Creek in unincorporated Stanislaus County.

In an effort to identify historic properties that might be affected by the undertaking, a review of records on file at the CCIC, archival research, and a ground surface inventory were conducted. As a result of these efforts, no cultural resources were identified within the PAL; however, the poor visibility and the documented cultural resources within the vicinity suggest the area has a high probability for containing buried cultural resources.

The buried archaeological site potential was addressed through visual inspection of portions of the Shirley-Hoods Creek and eroded banks, underlying geologic deposits and soils, and availability/access (historically and prehistorically) to natural resources. The records search results, the proximity of water sources, and underlying geologic deposits suggest that the archaeological site potential within the project vicinity is *high*. Due to the depositional nature of the environment, the buried cultural deposit potential for the project vicinity would also be considered *high*.

Construction monitoring is recommended for the proposed project. Additionally, if any cultural resources are identified during construction activities, a qualified archaeologist should be retained to assess the significance of the find. Further, if human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

6.0 BIBLIOGRAPHY

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**APPENDIX A:
FIELD INVENTORY PHOTOGRAPHS**

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Photograph 1. Orchard crossing location, from north bank of Shirley-Hoods Creek. Photo facing south.



Photograph 2. Access road location to Orchard crossing. Photo facing northwest



Photograph 3. Smith Creek crossing location from the north bank of Shirley-Hoods Creek, located west of the confluence with Smith Creek. Photo facing south.



Photograph 4. Access Road location to Smith Creek crossing. Photo facing north



Photograph 5. North bank of Shirley-Hoods Creek west of the Smith Creek crossing location. Photo facing northwest.



Photograph 6. Location of Main crossing from east bank of Shirley-Hoods Creek. Photo facing northwest.



Photograph 7: Two greenstone flakes and one whiteware fragment from a shovel test on the south bank of the Smith Creek crossing location.



Photograph 8: Fine grain basalt flake from west bank of Main crossing.



Photograph 9: Greenstone flake from west bank of Main crossing.



Photograph 10: Isolated greenstone flake found outside the PAL.

APPENDIX B:
CCIC RECORDS SEARCH RESULTS
(Not for Public Disclosure)

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April 16, 2019

Elizabeth Greathouse, Coordinator
Central California Information Center
One University Circle
Turlock, CA 95382

RE: Records Search Request for the Three Whittles Bridge Crossings Project Stanislaus County, California

Dear Ms. Greathouse

Attached please find the following documents regarding the Record Search Request for the Three Whittles Bridge Crossings Project in Stanislaus County, California. The attachments include the Confidential Record Search Request Form, a project vicinity map, and the USGS 7.5' Topographic Map for the Farmington and Bachelor Valley Quadrangles. Our Access and Use Agreement is No. 65.

An email with a link to download shapefiles will be included in the email with this request.

Please prepare a records search and additional information for the project area including the one-one (1) mile radius study area delineated on the attached topographic map.

The bill and the results can be submitted to me at the address below. Please reference project number **2571-Whittles Bridges** on the invoice.

Please do not exceed \$900. If the record search will exceed \$900, please contact me to discuss additional options.

If you have any questions or concerns, please contact me at 916-858-0642 or bmarks@dokkenengineering.com. Thank you in advance for your time and assistance.

Sincerely,

Brian S. Marks, Ph.D.
Archaeologist

Enclosure
file: 230/cultural/background

CHRIS Data Request Form

ACCESS AND USE AGREEMENT NO.: _____ **IC FILE NO.:** _____

To: _____ Information Center

Print Name: _____ Date: _____

Affiliation: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: _____ Fax: _____ Email: _____

Billing Address (if different than above): _____

Project Name / Reference: _____

Project Street Address: _____

County: _____

Township/Range/UTMs: _____

USGS 7.5' Quad(s): _____

PRIORITY RESPONSE (Additional Fee): yes / no

TOTAL FEE NOT TO EXCEED: \$ _____

Special Instructions:

Information Center Use Only

Date of CHRIS Data Provided for this Request: _____

Confidential Data Included in Response: yes / no

Notes: _____

CHRIS Data Request Form

Include the following information (mark as necessary) for the records search area(s) shown on the attached map(s) or included in the associated shapefiles. Shapefiles are the current CHRIS standard format for digital spatial data products.

NOTE: All digital data products are subject to availability - check with the appropriate Information Center.

1. **Map Type Desired:** Digital map products will be provided only if they are available at the time of this request. *Regardless of what is requested, only hard copy hand-drawn maps will be provided for any part of the requested search area for which digital map products are not available at the time of this request.*
There is an additional charge for shapefiles, whether they are provided with or without Custom GIS Maps.

Mark one map choice only

Custom GIS Maps

Shapefiles

Custom GIS Maps **and** ShapefilesHard Copy Hand-Drawn Maps **only**

Any selection below left unmarked will be considered a "no."

2a.	Within project area	Within _____ radius
ARCHAEOLOGICAL Resource Locations⁺	yes / no	yes / no
NON-ARCHAEOLOGICAL Resource Locations	yes / no	yes / no
Report Locations⁺	yes / no	yes / no
Resource Database Printout* (list)	yes / no	yes / no
Resource Database Printout* (detail)	yes / no	yes / no
Resource Digital Database Records (spreadsheet)*	yes / no	yes / no
Report Database Printout* (list)	yes / no	yes / no
Report Database Printout* (detail)	yes / no	yes / no
Report Digital Database Records (spreadsheet)*	yes / no	yes / no
ARCHAEOLOGICAL Resource Record copies**	yes / no	yes / no
PDF / Hard Copy		
NON-ARCHAEOLOGICAL Resource Record copies*	yes / no	yes / no
PDF / Hard Copy		
Report copies**:	yes / no	yes / no
PDF / Hard Copy		
	Only directory listing	Associated documentation
OHP Historic Properties Directory**		
within project area	yes / no	yes / no
within _____ mi radius	yes / no	yes / no
OHP Archaeological Determinations of Eligibility*		
within project area	yes / no	yes / no
within _____ mi radius	yes / no	yes / no
California Inventory of Historical Resources (1976):		
within project area	yes / no	yes / no
within _____ mi radius	yes / no	yes / no

+ In order to receive archaeological information, requestor must meet qualifications as specified in Section III of the current version of the California Historical Resources Information System Information Center Rules of Operation Manual and be identified as an Authorized User under an active CHRIS Access and Use Agreement.

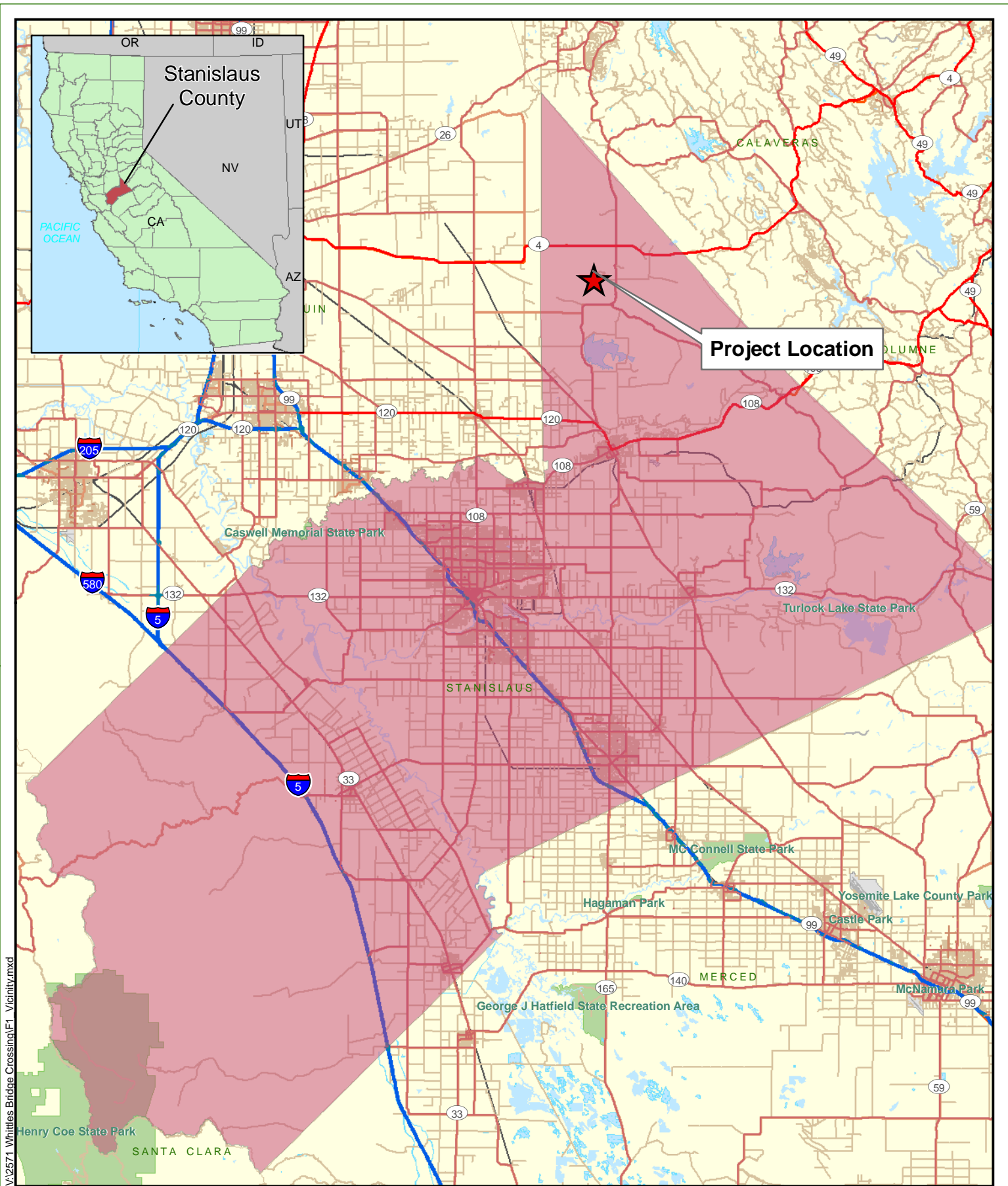
* These documents may be supplied as PDF files, if available

** Includes, but is not limited to, information regarding National Register of Historic Places, California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and historic building surveys.

CHRIS Data Request Form

2b. Listed below are sources of additional information that may be available at the Information Center. Indicate if a review and documentation of any of the following types of information is requested.

Caltrans Bridge Survey	yes / no
Ethnographic Information	yes / no
Historical Literature	yes / no
Historical Maps	yes / no
Local Inventories	yes / no
GLO and/or Rancho Plat Maps	yes / no
Shipwreck Inventory	yes / no
Soil Survey Maps	yes / no



V:\2571 Whittles Bridge Crossing\F1_Vicinity.mxd

Source: ESRI 2008; Dokken Engineering 4/16/2019; Created By: briannm

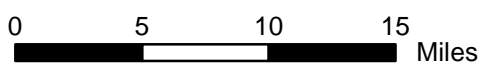
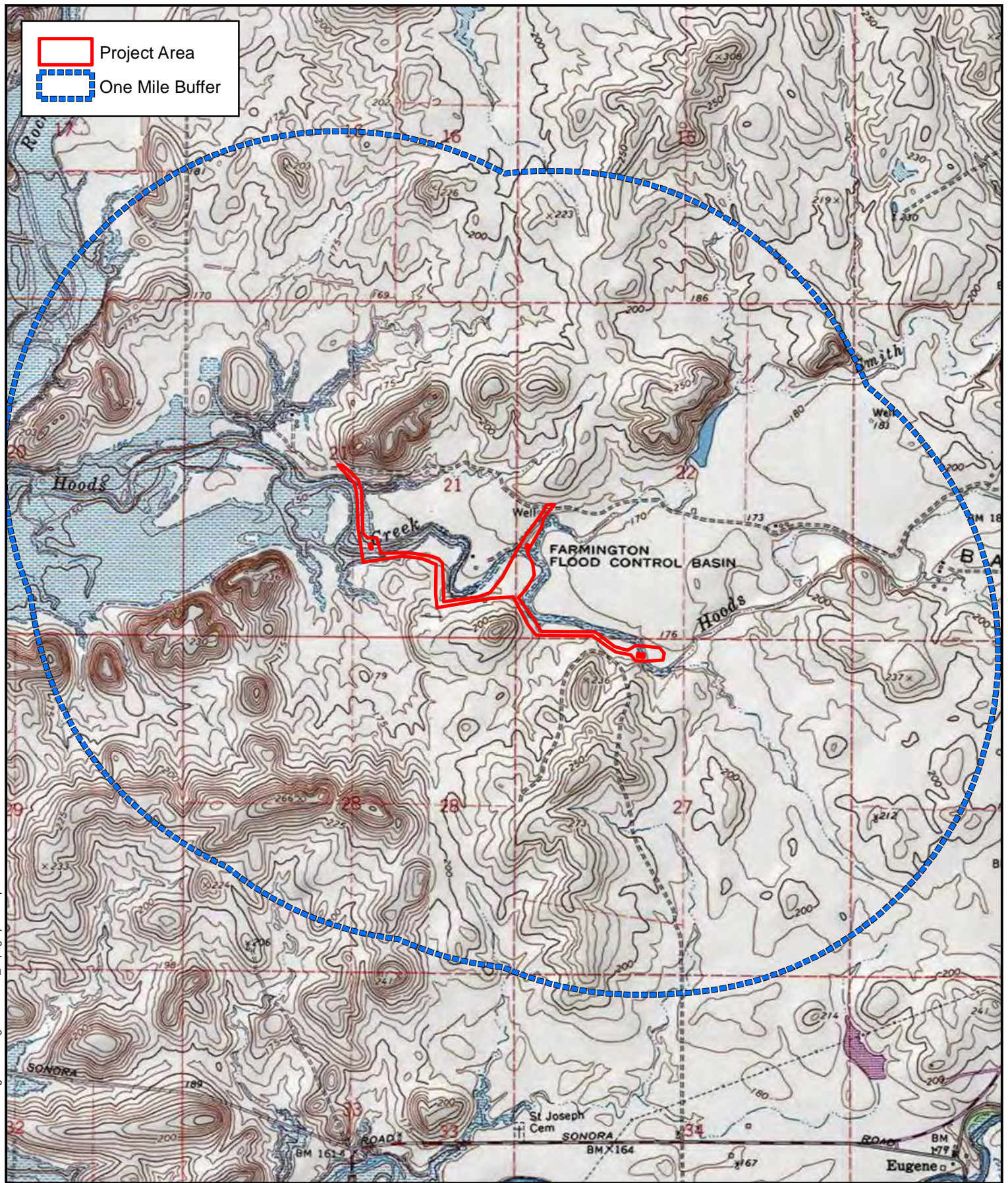


FIGURE 1
Project Vicinity
 Some Project Number
 Whittles Three Bridge Crossings
 Stanislaus County, California



Source: USA Topo Maps Online; Dokken Engineering 4/16/2019; Created By: brianm



0 0.5 1 Miles

FIGURE 2 Record Search

USGS 7.5-minute Quads: Farmington (1968 PR 1987)
and Bachelor Valley (1968 PR 1987)

Whittles Three Bridge Crossings
Stanislaus County, California



CENTRAL CALIFORNIA INFORMATION CENTER

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

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

Date: 4/17/2019

Records Search File No.: 11046N

Access Agreement: #65

Project: Whittle Bridge Crossings

Brian S. Marks
Dokken Engineering
110 Blue Ravine Road, Suite 200
Folsom, CA 95630

bmarks@dokkenengineering.com

Dear Mr. Marks:

The Central California Information Center received your record search request for the project area referenced above, located on the Bachelor Valley and Farmington 7.5' quadrangles in Stanislaus County. The following reflects the results of the records search for the project study area and radius:

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

Summary Data:

Resources within project area:	None formally reported to the Information Center.
Resources within 1 mi radius:	8: P-50-000093, 101, 102, 103, 189, 190, 191, 192
Reports within project area:	2: ST-00852, 8510
Reports within 1 mi radius:	2: ST-00939, 1670

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

<u>Report Copies:</u>	<input type="checkbox"/> enclosed <input checked="" type="checkbox"/> not requested <input type="checkbox"/> nothing listed
<u>OHP Historic Properties Directory:</u>	<input type="checkbox"/> enclosed <input type="checkbox"/> not requested <input checked="" type="checkbox"/> nothing listed
<u>Archaeological Determinations of Eligibility:</u>	<input type="checkbox"/> enclosed <input type="checkbox"/> not requested <input checked="" type="checkbox"/> nothing listed
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<u>GLO and/or Rancho Plat Maps:</u>	<input type="checkbox"/> enclosed <input checked="" type="checkbox"/> not requested <input type="checkbox"/> nothing listed
<u>Shipwreck Inventory:</u>	<input checked="" type="checkbox"/> not available at CCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp
<u>Soil Survey Maps:</u>	<input checked="" type="checkbox"/> not available at CCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

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

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

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

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

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

Note: Billing will be transmitted separately via email by our Financial Services office *(\$229.05), payable within 60 days of receipt of the invoice.

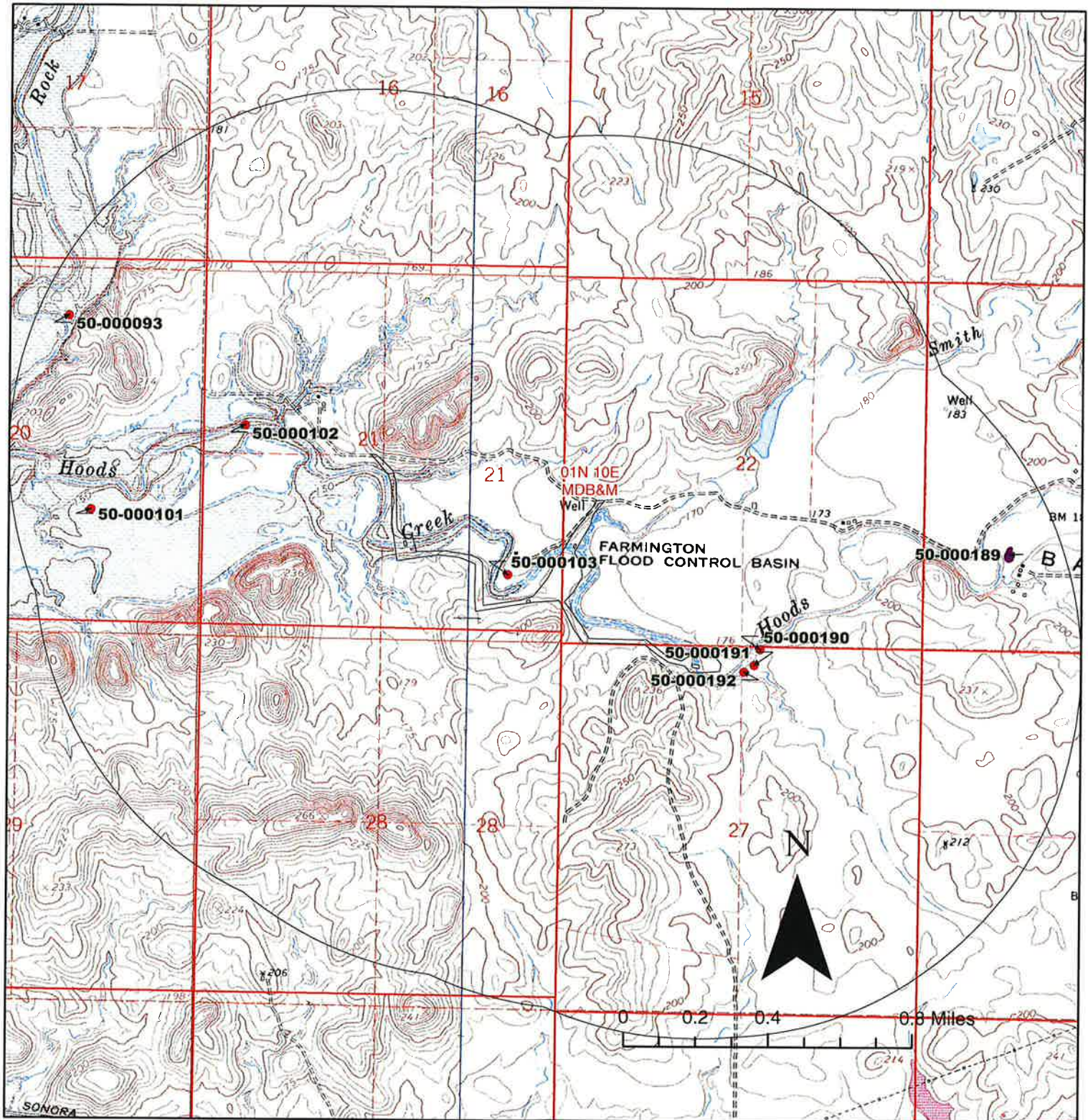
Sincerely,

A handwritten signature in cursive script, appearing to read "E. A. Greathouse".

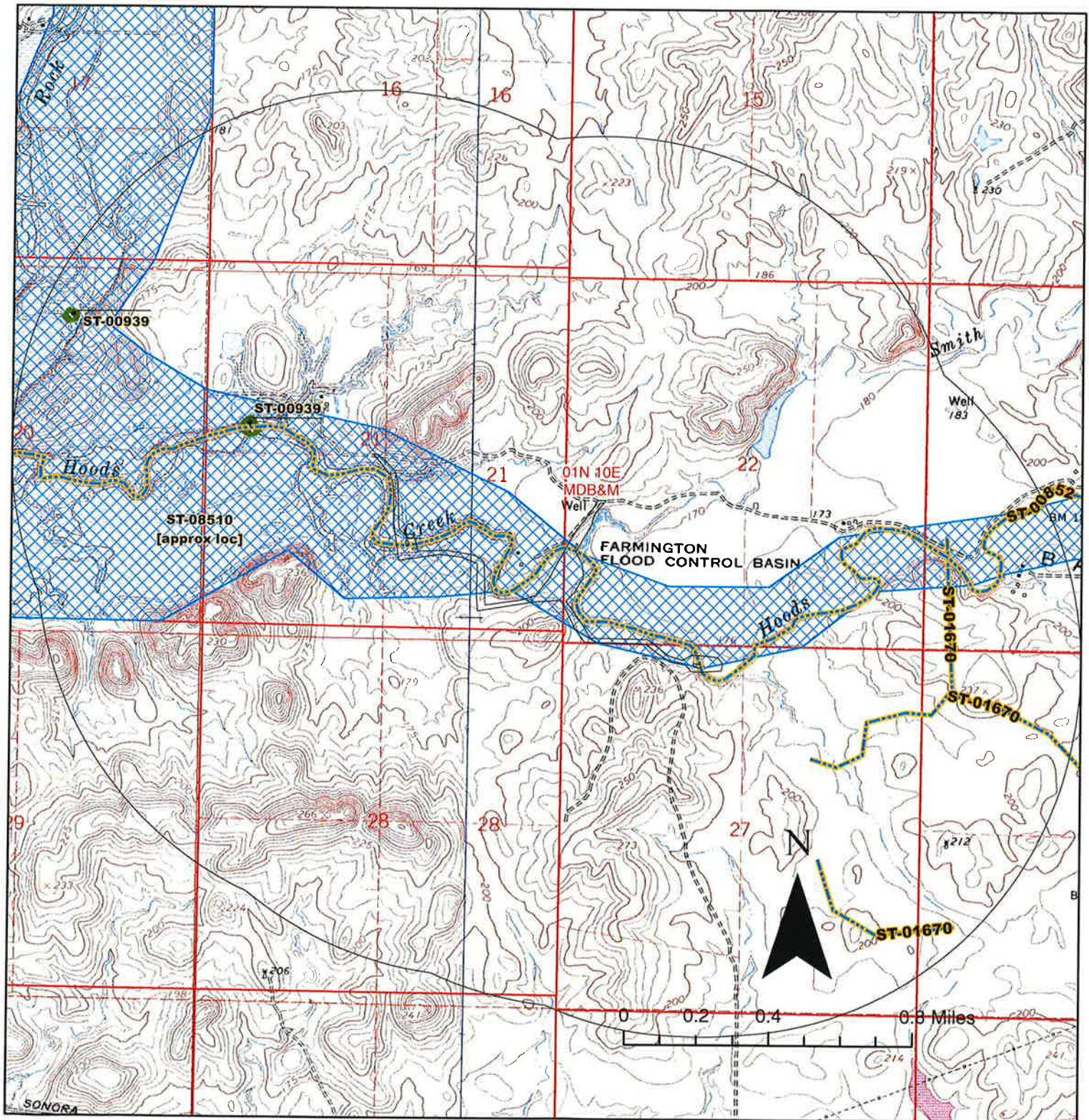
E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

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

Bachelor Valley and Farmington 7.5' Quadrangles



CCaIC #11046N Reports Whittle Bridge Crossings Bachelor Valley and Farmington 7.5' Quadrangles



Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
ST-00852	NADB-R - 1361516	1988	Archeo-Tec	An Archaeological Surface Reconnaissance of the Farmington Canal Phase II Project, Stanislaus and San Joaquin Counties, California.	Archeo-Tec, for EIP Associates	50-000006, 50-000333
ST-00939	NADB-R - 1361779	1956	Treganza, A. E.	Sites Selected for Excavation.	UC Berkeley	50-000089, 50-000092, 50-000093, 50-000097, 50-000102, 50-000106, 50-000108, 50-000143, 50-000144
ST-01670	NADB-R - 1361778	1981	True, D. L. and C. Slaymaker	Archaeological Investigations for the Oakdale Irrigation District, Oakdale, California.	D.L. True and Charles Slaymaker, Archaeological Consultants; for Jorgensen-Tolladay, Engineers	
ST-08510		1948	Riddell, D.	Appraisal of the Archaeological Resources of Farmington Reservoir, Littlejohns Creek, [Calaveras], San Joaquin and Stanislaus Counties, California. River Basin Survey.	University of California Berkeley, Archaeological Research Facility for Smithsonian Institution, Washington/NPS	50-000088, 50-000089, 50-000090, 50-000091, 50-000092, 50-000093, 50-000094, 50-000095, 50-000096, 50-000097, 50-000098, 50-000099, 50-000100, 50-000101, 50-000102, 50-000103, 50-000104, 50-000105, 50-000106, 50-000107, 50-000108, 50-000109, 50-000130, 50-000131, 50-000132, 50-000133, 50-000134, 50-000135, 50-000136, 50-000137, 50-000138, 50-000139, 50-000140, 50-000141, 50-000142, 50-000143, 50-000144, 50-000145, 50-000146, 50-000147, 50-000148, 50-000149, 50-000150, 50-000151, 50-000152, 50-000153, 50-000154, 50-000155, 50-000156, 50-000157, 50-000158, 50-000159, 50-000160, 50-000161, 50-000162, 50-000163, 50-000164, 50-000165, 50-000166, 50-000167, 50-000168, 50-000169, 50-000170, 50-000171, 50-000172, 50-000173, 50-000174, 50-000175, 50-000176, 50-000177, 50-000178, 50-000179, 50-000180, 50-000181, 50-000182, 50-000186, 50-000187, 50-000188, 50-000189, 50-000190, 50-000191, 50-000192, 50-000193, 50-000194, 50-000195, 50-000196, 50-000197, 50-000198, 50-000199, 50-000200, 50-000201, 50-000202, 50-000205

Resource List

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-50-000093	CA-STA-000006	Resource Name - Sta-6	Object, Site	Prehistoric	AP02; AP15	1948 (A. Mohr, UC Berkeley)	ST-00939, ST-08510
P-50-000101	CA-STA-000014	Resource Name - Sta-14	Object, Site	Prehistoric	AP02; AP15	1942 (F. Riddell, UC Berkeley)	ST-08510
P-50-000102	CA-STA-000015	Resource Name - Sta-15	Object, Site	Prehistoric	AP02; AP04	1948 (A. Mohr, UC Berkeley)	ST-00939, ST-08510
P-50-000103	CA-STA-000016	Resource Name - Hoods Creek (farm)	Object	Prehistoric	AP02; AP04	1948 (Fredrickson, UC Berkeley)	ST-08510
P-50-000189	CA-STA-000103	Resource Name - Stuart or Steward Ranch	Object, Site	Prehistoric	AP02; AP12; AP15	1951 (Freed or possibly Fredrickson?, UC Berkeley)	ST-08510
P-50-000190	CA-STA-000104	Resource Name - Stuart or Steward Ranch	Site	Prehistoric	AP12; AP15	1951 (Freed or possibly Fredrickson, UC Berkeley)	ST-08510
P-50-000191	CA-STA-000105	Resource Name - Stuart Ranch or Steward Ranch	Object, Site	Prehistoric	AP02; AP12; AP15	1951 (Freed or possibly Fredrickson?, UC Berkeley)	ST-08510
P-50-000192	CA-STA-000106	Resource Name - Stuart or Steward Ranch	Object, Site	Prehistoric	AP02; AP12; AP15	1951 (Davis, UC Berkeley)	ST-08510

ARCHAEOLOGICAL SITE SURVEY RECORD

Farmington 7.5'

1. Site Sta-6 2. Map Trigo 3. County Stanislaus
4. Twp. 1N Range 10E NW $\frac{1}{4}$ of NE $\frac{1}{4}$ of Sec. 20
5. Location Against low cliff on east side of Rock Creek Valley
2000' NE of Sta-5 6. On contour elevation 145'
7. Previous designations for site None
8. Owner _____ 9. Address _____
10. Previous owners, dates _____
11. Present tenant _____
12. Attitude toward excavation _____
13. Description of site Consolidated occupation deposit, through which
Rock Creek has cut channel. Top is level with rest of valley floor
14. Area 350'x100' 15. Depth 60" or more 16. Height 0'
17. Vegetation Grass 18. Nearest water Rock Creek-at site
19. Soil of site Consolidated mound deposit 20. Surrounding soil type Variable
21. Previous excavation None
22. Cultivation None 23. Erosion Much gully erosion
24. Buildings, roads, etc. Farm road SW of site
25. Possibility of destruction Inundation
26. House pits None
27. Other features Fire hearth at 18". bone at 18"
28. Burials No evidence
29. Artifacts Planes, flake scrapers, chopper.
30. Remarks No obsidian, neg. reaction to HCL. Site makes vertical
contact line with bedded cliff deposits.
31. Published references _____
32. UCMA Accession No. _____ 33. Sketch map _____
34. Date 10/10/48 35. Recorded by A. Mohr 36. Photos 1x9, 10
Mohr-Kodachrome