DRAFT INITIAL STUDY

PROPOSED MITIGATED NEGATIVE DECLARATION

FOR THE PROPOSED

ORD FERRY BRIDGE REPLACEMENT AT LITTLE CHICO CREEK

FEDERAL PROJECT: BRLS-5912 (103)

APRIL 2019

LEAD AGENCY:

COUNTY OF BUTTE

DEPARTMENT OF PUBLIC WORKS

7 COUNTY CENTER DRIVE OROVILLE, CA 95965

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PREPARED BY:

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TABLE OF CONTENTS

1 INTRODUCTION 1
- 1.1 REGULATORY GUIDANCE 1
- 1.2 PURPOSE OF THE INITIAL STUDY 1

2 GENERAL INFORMATION 2
- 2.1 PROJECT DESCRIPTION 2

3 EVALUATION OF ENVIRONMENTAL IMPACTS 9
- 3.1 EVALUATION OF ENVIRONMENTAL IMPACTS 9
- 3.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED 9

4 ENVIRONMENTAL IMPACTS 10
- 4.1 AESTHETICS 10
- 4.2 AGRICULTURAL AND FORESTRY RESOURCES 11
- 4.3 AIR QUALITY 17
- 4.4 BIOLOGICAL RESOURCES 25
- 4.5 CULTURAL RESOURCES 57
- 4.6 GEOLOGY AND SOILS 60
- 4.7 GREENHOUSE GAS EMISSIONS 62
- 4.8 HAZARDS AND HAZARDOUS MATERIALS 65
- 4.9 HYDROLOGY AND WATER QUALITY 68
- 4.10 LAND USE AND PLANNING 73
- 4.11 MINERAL RESOURCES 74
- 4.12 NOISE 75
- 4.13 POPULATION AND HOUSING 77
- 4.14 PUBLIC SERVICES 78
- 4.15 RECREATION 80
- 4.16 TRAFFIC AND TRANSPORTATION 81
- 4.17 UTILITIES AND SERVICE SYSTEMS 83
- 4.18 TRIBAL CULTURAL RESOURCES 85
- 4.19 MANDATORY FINDINGS OF SIGNIFICANCE 86

5 DETERMINATION 89

6 PREPARERS, TECHNICAL STUDIES AND REFERENCES 90
- 6.1 REPORT PREPARATION 90
- 6.2 REFERENCES: 90

LIST OF TABLES

Table 1: Attainment Status for Criteria Pollutants 19
Table 2: Screening Criteria for Criteria Air Pollutants 19
Table 3: Special Status Species with Known or Moderate to High Potential Occurrences 27
Table 4: GGS Mitigation Requirements 42
Table 5: Stormwater Pollution Prevention Best Management Practices 69
Table 6: Maximum Decibels Generated at 50 Feet 76

LIST OF FIGURES

Figure 1: Regional Location 6
Figure 2: Site Location 7
Figure 3: Farmland Conversion Map 12
Figure 4: Williamson Act Map 13

APPENDICES

APPENDIX A .... MITIGATION MONITORING AND REPORTING PROGRAM

ATTACHMENTS

ATTACHMENT A .... PROPOSED BRIDGE DESIGN
ATTACHMENT B .... NATURAL ENVIRONMENT STUDY
ATTACHMENT C .... BIOLOGICAL OPINION – NMFS
ATTACHMENT D .... BIOLOGICAL OPINION – USFWS
ATTACHMENT E .... DRAFT WETLAND DELINEATION
ATTACHMENT F .... ARCHAEOLOGICAL SURVEY AND HISTORIC PROPERTIES SURVEY REPORT

ACRONYMS AND ABBREVIATIONS

AGENCIES, BOARDS, COMMISSIONS, DISTRICTS:

BCAQMD	Butte County Air Quality Management District
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CNPS	California Native Plant Society
(CV)RWQCB	(Central Valley) Regional Water Quality Control Board
DOT	(US) Department of Transportation
CDFW	(California) Department of Fish and Wildlife
DTSC	(California) Department of Toxic Substances Control
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

APPROVALS, AGREEMENTS, PERMITS:

CASWP	Construction Activity Storm Water Permit
ITP	Incidental Take Permit
SAA	Streambed Alteration Agreement
SWPPP	Storm Water Pollution Prevention Plan

GUIDELINES, POLICIES, PROGRAMS, REGULATIONS:

BMP(s)	Best Management Practice(s)
BPM	Best Practices Manual
CBC	California Building Code
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
ESA	Endangered Species Act
NHPA	National Historic Preservation Act
NPDES	National Pollution Discharge Elimination System
PRC	Public Resources Code
SMM	Standard Mitigation Measures
SWMP	Storm Water Management Program

UBC .... Uniform Building Code

MISCELLANEOUS:

BSA .... Biological Survey Area
CIDH .... Cast In Drilled Hole
CNDDB .... California Natural Diversity Database
CSC .... California Species of Special Concern
CV .... Central Valley
CY .... Cubic Yards
dB .... Decibel(s)
ESU .... Evolutionary Significant Unit
FIRM .... Flood Insurance Rate Map
LOS .... Level(s) of Service
mgd .... Million Gallons per Day
MM .... Mitigation Measure
MS4 .... Municipal Separate Storm Sewer System
$PM_{10 / 2.5}$ .... Particulate Matter less than 10 / 2.5 Microns
RSP .... Rock Slope Protection
SR2S: .... Safe Routes to School (State)
SRTS: .... Safe Routes to School (Federal)
SR# .... State Route # (70, 162, et. al)
§ .... Section

1 INTRODUCTION

1.1 REGULATORY GUIDANCE

This document is an initial study with supporting environmental studies, which provide justification for a Mitigated Negative Declaration pursuant to the California Environmental Quality Act (CEQA). The Proposed Mitigated Negative Declaration has been prepared in accordance with the CEQA, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines 14 California Code Regulations Section 15000 et seq.

An initial study is conducted by a lead agency to determine if a project may have a significant effect on the environment. In accordance with the CEQA Guidelines Section 15063, an Environmental Impact Report (EIR) must be prepared if an initial study indicates that the proposed project under review may have a potentially significant impact on the environment. A Negative Declaration may be prepared instead, if the lead agency prepares a written statement describing the reasons why the proposed project would not have a significant effect on the environment, and therefore, why it does not require the preparation of an EIR (CEQA Guidelines Section 15371). According to CEQA Guidelines Section 15070, a Negative Declaration shall be prepared for a project subject to CEQA when either:

a) *The initial study shows there is no substantial evidence, in light of the whole record before the agency, that the proposed project may have a significant effect on the environment, or*
b) *The initial study identifies potentially significant effects, but:*
   (1) *Revisions in the project plans or proposals made by or agreed to by the applicant before the proposed negative declaration is released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur and;*
   (2) *There is no substantial evidence, in light of the whole record before the agency, that the proposed project as revised may have a significant effect on the environment.*

1.2 PURPOSE OF THE INITIAL STUDY

This initial study has been prepared consistent with CEQA Guidelines Section 15063, to determine if the Ord Ferry Bridge Replacement at Little Chico Creek project, as proposed, may have a significant effect upon the environment. Based upon the findings contained within this report, the Initial Study will be used in support of the preparation of a MITIGATED NEGATIVE DECLARATION.

2 GENERAL INFORMATION

2.1 PROJECT DESCRIPTION

Lead Agency: Butte County Department of Public Works
7 County Center Drive, Oroville, CA 95965
Telephone: (530) 538-7681, Fax: (530) 538-7171
Attention: Dennis Schmidt, Director of Public Works

Project Location: The proposed project is located in Section 36, Township 21N, Range 1W Ord Ferry 7.5' USGS Quadrangle, Butte County, CA.

The Ord Ferry Bridge Replacement at Little Chico Creek (Bridge No. 12C-0242) is located in Butte County, California on the Ord Ferry Road approximately 6.7 miles west of the town of Durham. (See Figure 1, Regional Location and Figure 2, Site Location Map).

For a detailed description of the project and location of proposed actions, refer to the "Project Description" section below.

Project Sponsor: County of Butte

Adjacent Zoning: Various, including Agriculture- 80, Resource Conservation

Adjacent Land Use: Agriculture

Setting:

The Ord Ferry Road Bridge over Little Chico Creek was constructed in 1949. The two-lane bridge is approximately 620 feet long and is composed of continuous steel stringers staggered over 33 short spans of less than 19 feet long carrying a reinforced concrete deck with a concrete curb and metal beam guard railing. The existing bridge has a sufficiency rating of 15.8 (at the time of writing this document) and is designated as Structurally Deficient by Caltrans which makes it eligible for replacement utilizing 88.53% Highway Bridge Program (HBP) funds and 11.47% will be provided by local match program administered by Caltrans. The bridge is far too narrow (20 feet of clear width) for the Projected Average Daily Traffic (ADT) of 3,437 vehicles per day, as measured by the Butte County Association of Governments (BCAG) in 2013/2014.

Proposed Project:

The Ord Ferry Road at Little Chico Creek bridge replacement project (Bridge No. 12C-0242) is located in Butte County, California on Ord Ferry Road approximately 3.5 miles southeast of the town of Dayton. Ord Ferry Road is a major thoroughfare between Butte and Glenn Counties. Traffic is primarily local agricultural though there is some interregional traffic between the City of Chico and points south. Federal transportation funding will account for 88.53% of the funds for this project and 11.47% will be provided by local match as administered by the California Department of Transportation (Caltrans). Caltrans will be the lead agency for NEPA compliance through delegation from FHWA and Butte County, the owner of the project, will be the lead agency for CEQA compliance.

The existing 620'± long bridge is composed of continuous steel stringers staggered over thirty-three short spans less than 19'± long each and carrying traffic on a reinforced concrete deck with concrete curb and metal beam guard railing. The substructure supports are several different element types varying in age and condition including reinforced concrete pier walls, reinforced concrete columns and cast-in-steel shell column extensions. It appears that the current bridge was constructed by connecting and supplementing two separate shorter length bridges for spans 1-5 and spans 19 through 33. Original abutments and bents were retained and incorporated, intermediate abutments were converted into Piers 6 and 19, and additional supports added to connect the bridges for span 6 through 18.

As-built plans date the current superstructure to 1949 when new steel stringers, continuous over two spans and staggered at every other bent, were placed over existing steel bent beams. A center reinforced concrete column support was added to each bent to supplement the older steel jacketed concrete columns. Foundation types for all the substructure elements is unknown but appears likely to be some form of spread footing. It is also noteworthy that there are several exposed, older driven timber piles within the creek throughout the length of the existing bridge. This timber piles could have been from an even older bridge or possibly remaining from previous construction activities.

The Caltrans Structure Inventory and Appraisal Report classifies the bridge is Structurally Deficient with a Sufficiency Rating of 15.8 making it eligible for replacement with federal transportation funds administered by Caltrans. This bridge has the lowest Sufficiency Rating of any bridge in Butte County (at the time of writing this document) and has been programmed for replacement.

The horizontal alignment of Ord Ferry Road at the project location is relatively straight and traverses through the riparian area of Little Chico Creek. The existing roadway and bridge is

20’ wide which is far too narrow for the 3,437 ADT that was measured by the Butte County Association of Governments (BCAG) in 2013/2014 west of Aguas Frias Road. The existing bridge has a long history of traffic issues between oncoming vehicles. Local farmers as well as Public Works staff have identified incidents where oncoming vehicles have collided with farm implements, with large semi-trucks, and with other oncoming traffic. Farm implements routinely take up 16’ of the 20’ width on this 600’ long bridge making it critical that oncoming traffic recognize and yield to avoid a collision.

The proposed new bridge will replace the existing structures on the current, existing alignment (See **Attachment A**). It will be approximately 640 feet long by approximately 43 feet wide and carry (2) twelve-foot traffic lanes and (2) eight foot shoulders. The cast-in-place reinforced concrete slab bridge is expected to be composed of seventeen spans arranged in two frames with an intermediate hinge. The intermediate supports are expected to be small diameter pile extensions founded on cast-in-steel-shell (CISS) piles. The CISS pile shafts will be driven utilizing a crane and pile hammer. Bridge abutments are anticipated to be reinforced concrete seat style abutments founded on driven piles; likely steel H-piles or small diameter steel pipe piles. Impact pile driving will be required for installation for these bridge abutment piles.

The bridge superstructure construction within the floodplain will utilize cast-in-place methodology with traditional concrete forms and temporary supports consisting of falsework beams, timber bents, and timber pads. Falsework construction will be relatively simple due to the short 40’ spans on the new bridge and with Little Chico Creek being relatively dry during the construction season. The Contractor will be required to submit detailed falsework plans and calculations for approval of the Engineer before constructing any portions of the falsework or temporary structures.

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 25 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high water elevation will be a portion of the new bridge supports and removal of the old bridge supports. A quantity estimate of both temporary fill materials required for construction and permanent features within Little Chico Creek is presented below. The superstructure of the new bridge will be positioned to allow 100 year flood flows to pass under the new bridge with a minimum of 2 feet of freeboard per the Central Valley Flood Protection Board criteria.

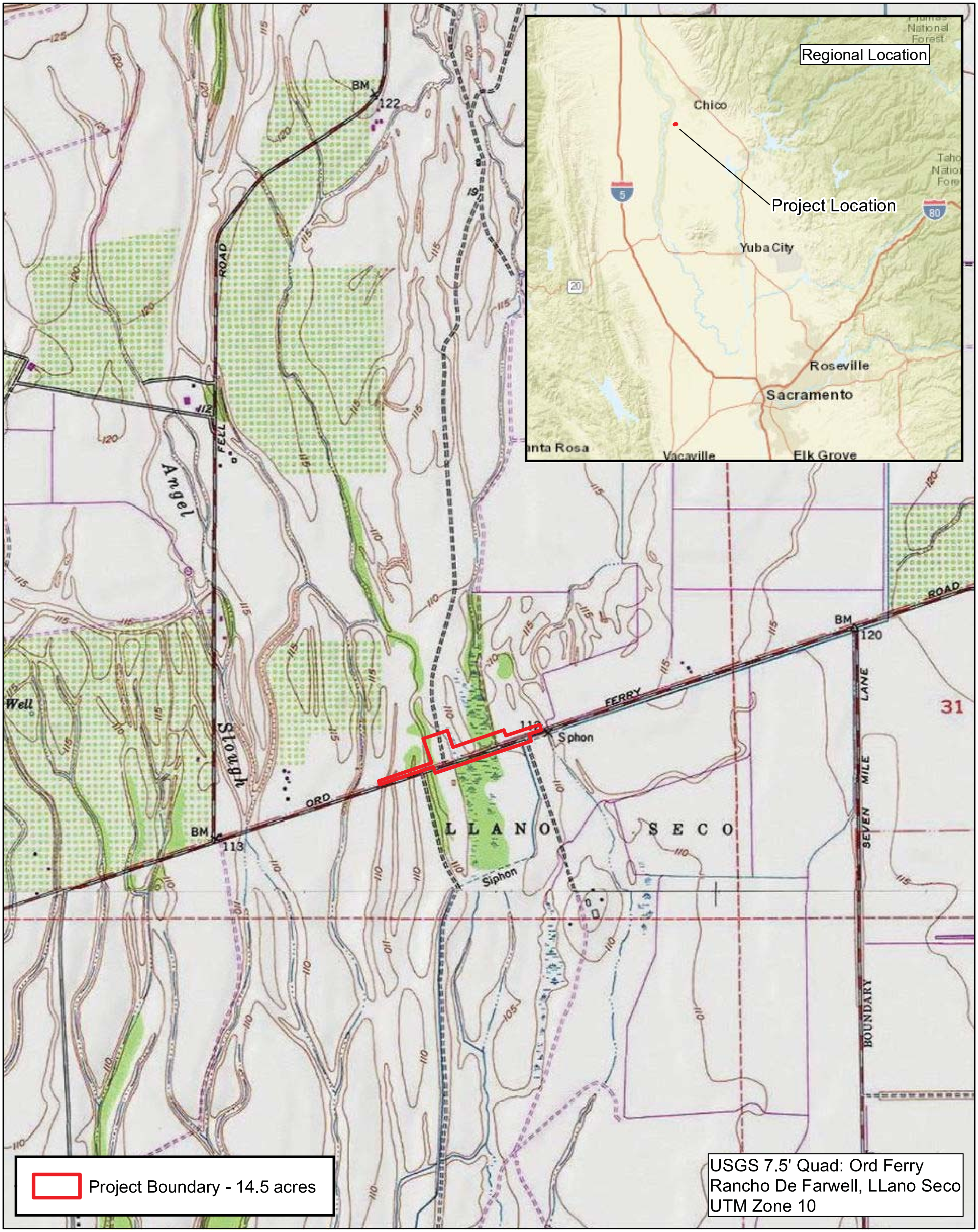
Permanent Materials placed within Little Chico Creek below Ordinary High Water Mark

New Bridge Columns:	30 CY
Existing Bridge Columns Removed:	26 CY
New Rock Slope Protection at Western Abutment:	30 CY
New Rock Slope Protection at Eastern Abutment:	110 CY

Ord Ferry Road will be widened to 25 feet for a length of approximately 400' feet on both sides of the bridge. At both ends of the bridge, the road surface (Asphalt Concrete pavement) will be tapered to match the existing cross section. The new approach roadway will conform to the existing Hogsback Drain Bridge located 400' southwest of the existing Ord Ferry bridge. Fill will need to be imported to provide for a smooth vertical transition from the new bridge deck level to the existing roadway grade. Existing electrical, telephone, and fiber optic utilities located on the west side of the Ord Ferry Road will need to be relocated as part of the project.

Staging of the bridge and roadway approach construction is required to keep the road open to traffic during construction operations. The first construction stage would reduce the existing bridge to a single 11' traffic lane and demolish a portion of the existing bridge. A portion of the new bridge would then be constructed with a lane approximately 13' wide provided for traffic to be moved onto the new bridge portion. The remainder of the existing bridge would be removed with the remainder of the new bridge constructed in its place. This staged bridge construction alternative would require two construction seasons and approximately 18 months of single lane traffic control utilizing a temporary traffic signal system. The Contractor will need to construct a temporary access road just northwest of the existing bridge to move equipment and materials within the project site. It is anticipated that oversized farm equipment wider than the staged bridge width will also use this temporary road to traverse the project site.

It is anticipated that excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, pile driving hammers, and pile driving equipment will be required to construct the new bridge. Construction is anticipated to be completed in two construction seasons with a suspension of operations during the winter rainy season.



NORTH 1:24,000
0 500 1,000 Feet
Data Sources: ESRI,Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Regional Location Map
Figure 1

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GE# 16-025 Map Date: 02/13/17 Revised: 12/06/17

NORTH
1:2,000
0 100 200 Feet
Data Sources: ESRI, USDA NAIP
Imagery: 07/13/2016, Butte County

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Site Location Map
Figure 2

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GE# 16-025 Map Date: 02/13/17 Revised: 12/06/17

ANTICIPATED PERMITS AND APPROVALS

Butte County Board of Supervisors

- Project Approval
- CEQA

Butte County Department of Public Works

- Grading Plan/Pollution Control Plan
- BMPs

Regional Water Quality Control Board

- §401 Water Quality Certification

CA Department of Fish and Wildlife (CDFW)

- §1602 Streambed Alteration Agreement
- §2081 Incidental Take Permit

California Department of Transportation

- NEPA CE

Natural Resources Conservation Service (NRCS)

- NRCS CPA-106 (Farmland Conversion Impact Rating For Corridor Type Projects)

United States Army Corps of Engineers (USACE)

- §404 Clean Water Act Permit
- §106 NHPA Determination
- §7 ESA Determination
- NEPA Finding

Central Valley Flood Protection Board

- Encroachment Permit

3 Evaluation of Environmental Impacts

3.1 Evaluation of Environmental Impacts

This section provides an evaluation of the potential environmental impacts of the project. There are 18 Environmental Factors evaluated in Section 4.0, in addition to the CEQA Mandatory Findings of Significance.

The Checklist Discussion/Analysis provides a detailed discussion of each of the environmental issue checklist questions. The level of significance for each topic is determined by considering the predicted magnitude of the impact. Four levels of impact significance are described in this initial study:

Potentially Significant: A new impact that may have a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected"

Less Than Significant with Mitigation: A new impact that is "potentially significant" as described below; the incorporation of mitigation measure(s) would reduce the project related impact to a less than significant level

Less Than Significant: A new impact would not result in a substantial and adverse change in the environment; this impact level does not require mitigation measures

No Impact: No project-related impact to the environment would occur with project development

3.2 Environmental Factors Potentially Affected

The environmental factors checked below could be potentially affected by this project; however, with the incorporation of mitigation measures, potentially significant impacts are reduced to less than significant level by the project" (CEQA Guidelines Section 15382).

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

4 ENVIRONMENTAL IMPACTS

4.1 AESTHETICS

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site/surroundings?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

Setting

The project is located within the northern Sacramento Valley. The proposed project is located approximately 6.7 miles west of the town of Durham, in unincorporated Butte County, California. An existing bridge currently exists at the site providing a means of crossing Little Chico Creek for traffic using Ord Ferry Road. The primary view from the bridge is the agricultural land and riparian vegetation that are adjacent to the bridge.

The area surrounding the project site consists of agricultural and resource conservation lands. Land that is immediately bordering the project site consists of riparian vegetation associated with Little Chico Creek. Habitat types consist of valley foothill riparian forests, annual grasslands, and riverine.

Discussion

a), b) and d) No Impact: There are no significant scenic vistas on which the proposed project could have an impact. The project site is not within a state scenic highway. The improvements with this project do not include the installation of lighting or reflective surfaces that could contribute to substantial sources of light or glare. No substantial long-term visual impact is anticipated, since no significant changes in the appearance of the existing roadway and bridge is proposed. The project would have no impact relative to these resources.

Mitigation Required: None

c) Less Than Significant Impact: The project would not create structures, dwellings or other facilities with substantial vertical presence. The proposed project involves the replacement of an existing bridge. The presence of a new replacement bridge on the same alignment and in the same location will not degrade the existing visual character of the site or its surroundings. The project would have a less than significant impact relative to these resources.

Mitigation Required: None

4.2 AGRICULTURAL AND FORESTRY RESOURCES

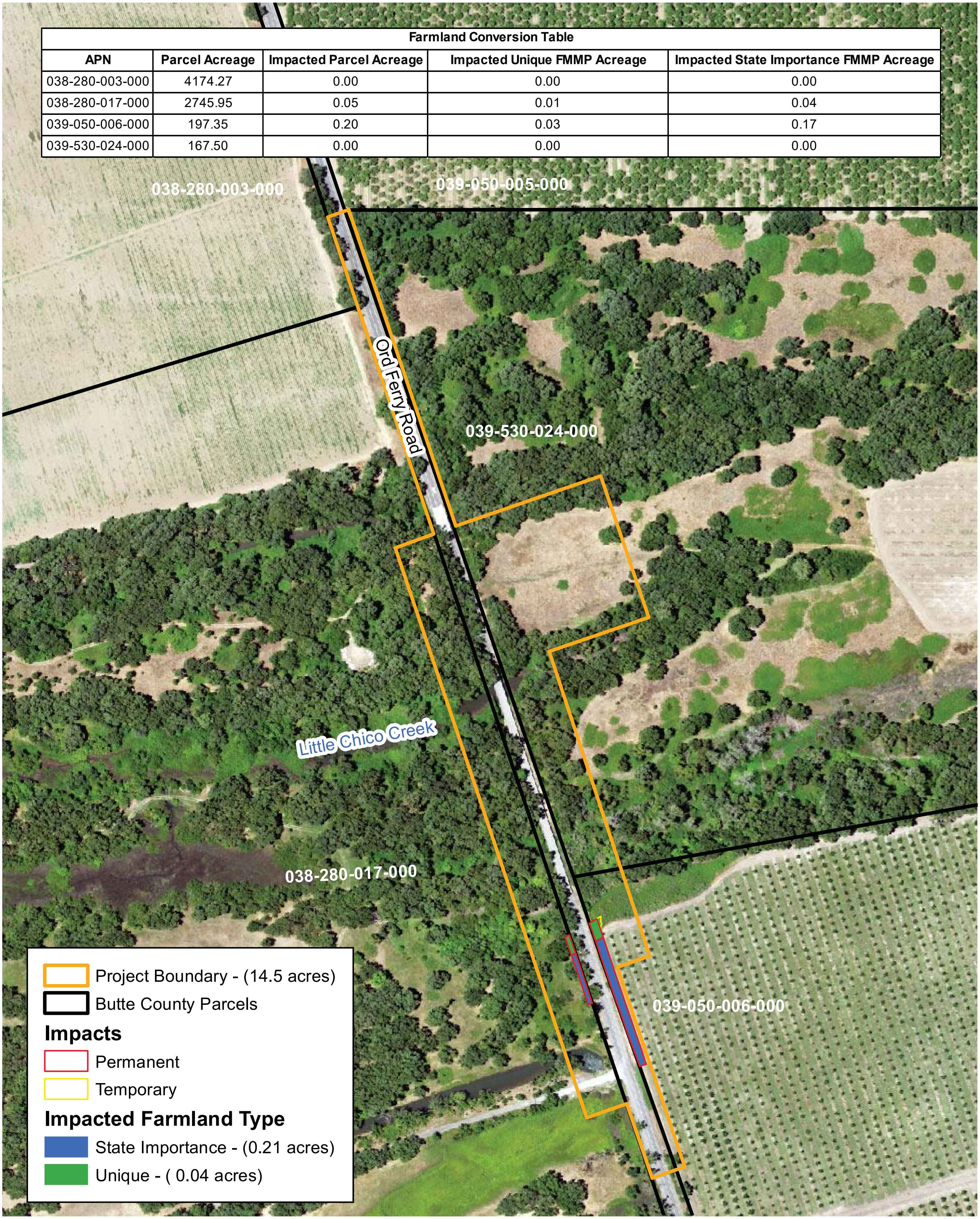
Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			**X**	
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			**X**	
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))?				**X**
d) Result in the loss of forestland or conversion of forestland to non-forest use?				**X**
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?		**X**		

Setting

The project is located in an agricultural area of County jurisdiction. There is farmland designated as Statewide Importance and Prime farmland in the project area as defined by the Farmland Mapping and Monitoring Program (FMMP). See Figure 3: Farmland Conversion Map. There are also parcels within the project area that have Williamson Act contracts. See Figure 4: Williamson Act Map.

It is anticipated that no Williamson Act contracts will be terminated, although parcels currently under contract may require minor revisions, due to the revisions to access for adjacent property owners, temporary construction easement and minor modifications to farmland resulting from minor right of way acquisitions. The remaining acreage from each parcel will continue to meet Butte County's criteria for eligibility as Williamson Act contract parcels. Government Code

Farmland Conversion Table				
APN	Parcel Acreage	Impacted Parcel Acreage	Impacted Unique FMMP Acreage	Impacted State Importance FMMP Acreage
038-280-003-000	4174.27	0.00	0.00	0.00
038-280-017-000	2745.95	0.05	0.01	0.04
039-050-006-000	197.35	0.20	0.03	0.17
039-530-024-000	167.50	0.00	0.00	0.00



Ord Ferry Road at Little Chico Creek Bridge Replacement Project

Farmland Conversion Map

Figure 3

Data Sources: ESRI, USDA NAIP Imagery: 07/13/2016, Butte County. FMMP

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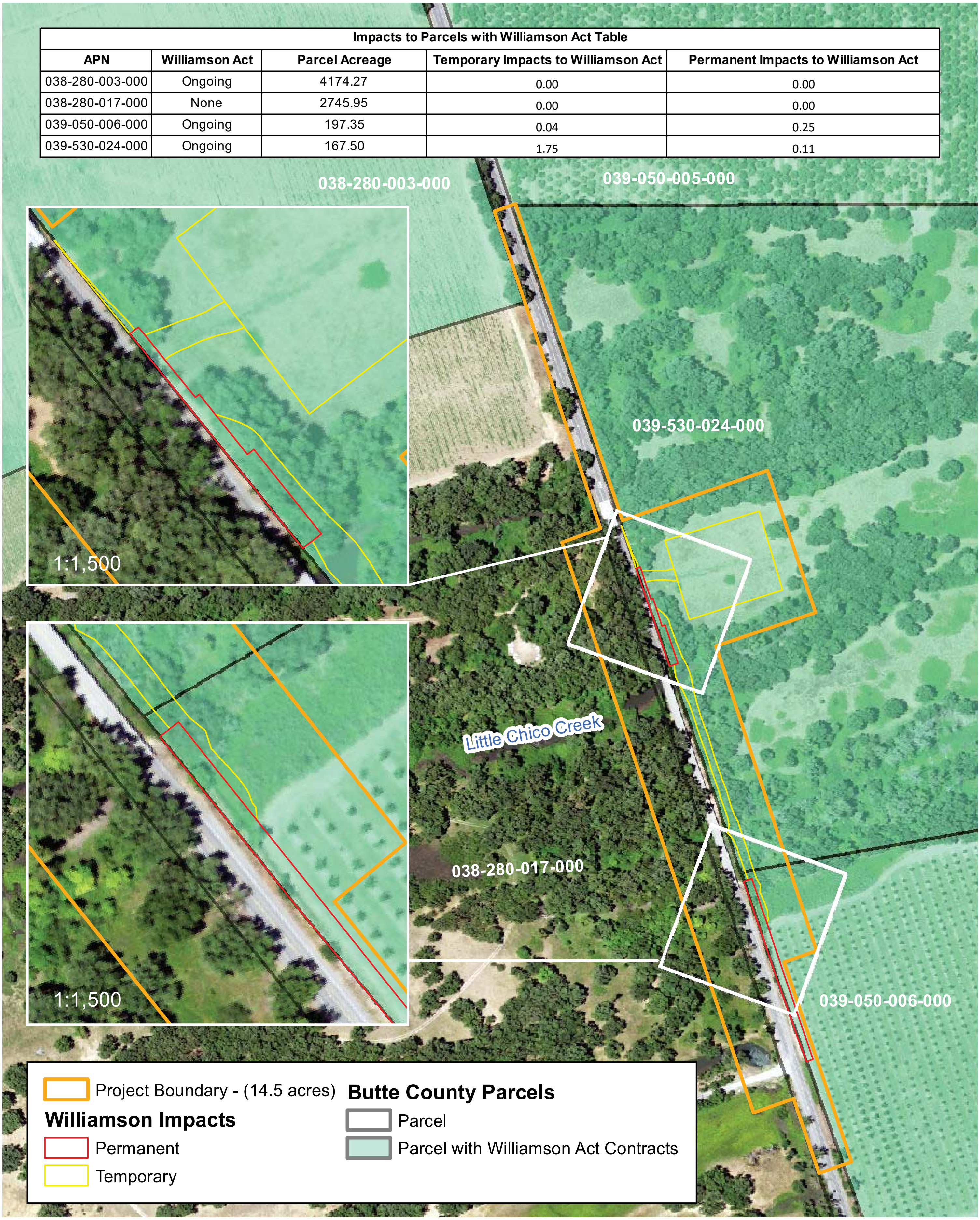
GE# 16-025 Map Date: 07/25/18

Impacts to Parcels with Williamson Act Table				
APN	Williamson Act	Parcel Acreage	Temporary Impacts to Williamson Act	Permanent Impacts to Williamson Act
038-280-003-000	Ongoing	4174.27	0.00	0.00
038-280-017-000	None	2745.95	0.00	0.00
039-050-006-000	Ongoing	197.35	0.04	0.25
039-530-024-000	Ongoing	167.50	1.75	0.11



NORTH

1:4,000

0 100 200 Feet

Data Sources: ESRI, USDA NAIP Imagery: 07/13/2016, Butte County

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Williamson Act Map
Figure 4

gallaway ENTERPRISES

GE# 16-025 Map Date: 07/25/18

§51295 states that when a project acquires or modifies only a portion of a parcel of land subject to a Williamson Act contract, the contract is deemed null and void only as to that portion of the contracted farmland taken. The remaining land continues to be subject to the contract unless it is adversely affected with property acquired by eminent domain or in lieu of eminent domain. Section 15206 of the California Environmental Act Guidelines identifies the cancellation of 100 acres or more of a Williamson Act contract by a project as a significant impact under the California Environmental Quality Act. Although the project bisects land that is in Williamson Act contracts, the project only affects 2.15 acres of Williamson Act contract land. As stated above, it is anticipated that no Williamson Act contracts will be terminated, although parcels currently under contract will require minor revisions due to the new right of way acquisitions resulting from fill slope intrusions onto adjoining properties.

When farmland is affected on State funded projects, Caltrans consults with the U.S. Department of Agriculture's Natural Resources Conservation Service. Caltrans uses the U.S. Department of Agriculture's Farmland Conversion Impact Rating Form NRCS-CPA-106 to determine impacts to farmland. The evaluation form is submitted to the U.S. Department of Agriculture's Natural Resources Conservation Service, which assigns a score for a site's relative value. The Natural Resources Conservation Service returns the evaluation form, and Caltrans completes a site assessment with the score assigned from the Natural Resources Conservation Service. A combined score under 160 indicates no further consideration for protection. Government Code Section 658.4 c (3) of the Farmland Protection Policy Act states that "sites receiving scores totaling 160 or more be given increasingly higher levels of consideration for protection." In compliance with Title 7 Code of Federal Regulation 658.4 (4) (ii), the County will implement Caltrans avoidance measures to minimize farmland impacts. The proposed project will permanently impact 0.21 acres of farmland of state importance and 0.04 acres of unique farmland. A Farmland Conversion Impact Rating Form was submitted to Caltrans to utilize and consult with the Natural Resource Conservation Service. Based on the minimal amount of impacts to farmlands, it is expected that the U.S. Department of Agriculture's Farmland Conversion Impact Rating will be well below the 160 point threshold.

<u>Discussion</u>

a) Less Than Significant: The proposed project will have both permanent and temporary impacts on farmland identified as Prime and Unique by the FMMP. The proposed project will permanently convert 0.21 acres and 0.04 acres of farmland of state importance and unique farmland respectively. The total amount of farmland designated in the County as statewide importance and unique is 21,699 acres and 22.04 acres, therefore the impacts and permanent conversion to statewide importance and unique farmland are 0.0009 percent and 0.0001 percent, respectively. Upon completion of the project, the land designated as statewide importance and unique that is affected by the temporary construction activities will be reverted to its original condition and use. Due to the minor amount of farmland conversion, this impact is considered to be less than significant.

Mitigation Required: None

b) Less Than Significant: The proposed project will have both permanent and temporary impacts on parcels that have Williamson Act contracts. Permanent (0.36 acres) and temporary (1.79 acres) easements will affect 2.15 acres of land with Williamson Act contracts. According to Butte County as of 2017, the total amount of land with Williamson Act contracts in the County is 210,155 acres; therefore, the permanent impacts and temporary conversion affecting Williamson Act contract land are 0.0002 percent and 0.0008 percent, respectively.

Cancellation of Williamson Act contracts is regulated under Government Code Sections 51290-51295. Under Section 51290, the Department of Conservation is authorized to tentatively cancel a contract to accommodate a public facility. Government Code Section 51292 outlines the specific requirements for partial cancellation of a Land Conservation Act (LCA) contract under two "consistency" findings that must be made by the Department of Conservation. The two consistency findings are:

1. The location is not based primarily on a consideration of the lower cost of acquiring land in an agricultural preserve.

2. If the land is agricultural land covered under a contract pursuant to this chapter for any public improvement, that there is no other land within or outside the preserve on which it is reasonably feasible to locate the public improvement.

The federal Farmland Protection Policy Act of 1981 applies to all federally funded projects that take right-of-way in farmland. Caltrans necessitates the analysis of impacts to farmlands through the assessment tool "*NRCS-CPA-106 - Farmland Conversion Impact Rating for Corridor Type Projects*". A Farmland Conversion Impact Rating Form was submitted to Caltrans to utilize and consult with the Natural Resource Conservation Service. Typical outcomes of this evaluation process include a range of actions including documentation that no further action is required or Caltrans completing a Corridor Assessment Criteria Evaluation and based on the points compare the relative valuation of the various project alternatives and make a final corridor selection that may allow for the minimization of conversion of agricultural lands to no agricultural lands. Due to the minor amount of Williamson Act land conversion this impact is considered to be less than significant.

Mitigation Required: None

c) – d) No Impact: The proposed project would not conflict with forestland or timberland zoning or uses. There would be no conversions of forestland or timberland as a result of the proposed project. Therefore, there would be no impact.

Mitigation Required: None

e) Less Than Significant With Mitigation: The construction activities have the potential to temporarily disrupt access to the adjacent properties. There is also the potential that temporary staging and access areas on lands identified as statewide importance, unique by the FMMP or with Williamson Act contracts, could modify the soil conditions at those locations.

Mitigation Measure 1 Preservation of Agricultural Access and Land

The following are recommended avoidance and mitigation measures that shall be implemented prior to the start of construction and continue throughout project activities.

1. The advance notification and coordination with local property owners/growers will be conducted to minimize short-term impacts related to construction activities. Before any work that could interfere with agricultural activities, the work will be coordinated with appropriate property owners/growers.

2. The extent of work within temporary construction easements on private land will be minimized to the extents necessary to provide access and construct infrastructure such as driveways and bridges on private land.

<u>Timing & Implementation</u>: The County shall provide advance notification and coordination with property owners/growers and confirm that soils amendments meet specifications prior to and post construction.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing coordination and inspection.

Mitigation Required: Mitigation Measure 1

4.3 AIR QUALITY

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?			**X**	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		**X**		
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 emissions that exceed quantitative thresholds for ozone precursors)?		**X**		
d) Expose sensitive receptors to substantial pollutant concentrations?		**X**		
e) Create objectionable odors affecting a substantial number of people?				**X**

Setting

Butte County is located within the Sacramento Valley Air Basin (SVAB), comprising the northern half of California's 400-mile long Great Central Valley. The SVAB encompasses approximately 14,994 square miles with a largely flat valley floor (excepting the Sutter Buttes) about 200 miles long and up to 150 miles wide, bordered on its east, north and west by the Sierra Nevada, Cascade and Coast mountain ranges, respectively.

The SVAB, containing 11 counties and some two million people, is divided into two air quality planning areas based on the amount of pollutant transport from one area to the other and the level of emissions within each. Butte County is within the Northern Sacramento Valley Air Basin (NSVAB), which is composed of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, and Yuba Counties.

Emissions from the urbanized portion of the basin (Sacramento, Yolo, Solano, and Placer Counties) dominate the emission inventory for the Sacramento Valley Air Basin, and on-road motor vehicles are the primary source of emissions in the Sacramento metropolitan area. While pollutant concentrations have generally declined over the years, additional emission reductions will be needed to attain the State and national ambient air quality standards in the SVAB.

Seasonal weather patterns have a significant effect upon regional and local air quality. The Sacramento Valley and Butte County have a Mediterranean climate, characterized by hot, dry summers and cool, wet winters. Winter weather is governed by cyclonic storms from the North Pacific, while summer weather is typically subject to a high pressure cell that deflects storms from the region.

In Butte County, winters are generally mild with daytime average temperatures in the low 50s °F and nighttime temperatures in the upper 30s°F. Temperatures range from an average January low of approximately 36°F to an average July high of approximately 96°F, although periodic lower and higher temperatures are common. Rainfall between October and May averages about 26 inches but varies considerably year to year. Heavy snowfall often occurs in the northeastern mountainous portion of the County. Periodic rainstorms contrast with occasional stagnant weather and thick ground or "tule" fog in the moister, flatter parts of the valley. Winter winds generally come from the south, although north winds also occur. Diminished air quality within Butte County largely results from local air pollution sources, transport of pollutants into the area from the south, the NSVAB topography, prevailing wind patterns, and certain inversion conditions that differ with the season. During the summer, sinking air forms a "lid" over the region, confining pollution within a shallow layer near the ground that leads to photochemical smog and visibility problems. During winter nights, air near the ground cools while the air above remains relatively warm, resulting in little air movement and localized pollution "hot spots" near emission sources. Carbon monoxide, nitrogen oxides, particulate matters and lead particulate concentrations tend to elevate during winter inversion conditions when little air movement may persist for weeks.

As a result, high levels of particulate matter (primarily fine particulates or PM2.5) and ground-level ozone are the pollutants of most concern to the NSVAB Districts. Ground-level ozone, the principal component of smog, forms when reactive organic gases (ROG) and nitrogen oxides (NOx) - together known as ozone precursor pollutants - react in strong sunlight. Ozone levels tend to be highest in Butte County during late spring through early fall, when sunlight is strong and constant, and emissions of the precursor pollutants are highest.

The SVAB is subject to federal, state, and local regulations. The Butte County Air Quality Management District (District) is responsible for attainment of the National and California Air Quality Standards in Butte County. The BCAQMD released the CEQA Air Quality Handbook: Guidelines for Assessing Air Quality Impacts for projects subject to CEQA Review (CEQA Handbook), which was approved October 23, 2014. The District web site (www.bcaqmd.org) provides the County's current attainment status, air quality trends, and rules and regulations that may be applicable to projects under consideration by lead agencies. Table 1 provides Butte County's attainment status as of September 2014:

Table 1: Attainment Status for Criteria Pollutants

Pollutant	State Designation	Federal Designation
1-hour ozone	Nonattainment	--
8-hour ozone	Nonattainment	Nonattainment
Carbon monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
24-Hour PM10	Nonattainment	Attainment
24-Hour PM2.5	No Standard	Nonattainment
Annual PM10	Attainment	No Standard
Annual PM2.5	Nonattainment	Attainment
Source: Butte County Air Quality Management District, 2014		

The CEQA Handbook establishes thresholds of significance for projects based on project size and/or projected emissions. Thresholds of significance are used to determine when a project may potentially have a significant effect on the environment; and therefore, when additional study/analysis is required. Table 2 provides the Air District's screening criteria to determine whether modeling for criteria air pollutants is necessary. The screening criteria were created using CalEEMod version 2013.2.2 for the given land use types, with default Butte County urban settings.

Table 2: Screening Criteria for Criteria Air Pollutants

Land Use Type	Model Emissions for Projects Greater Than
Single Family Unit Residential	30 units
Multifamily (low ride) Residential	75 units
Commercial	15,000 square feet
Educational	24,000 square feet
Industrial	59,000 square feet
Recreational	5,500 square feet
Retail	11,000 square feet

If a project is below (meets) the applicable screening criteria, it may be assumed to have a less than significant impact upon the environment under CEQA; if not, modelling should be done to further analyze a potential impact.

Discussion

a) Less Than Significant: A project is deemed inconsistent with air quality plans if it would result in population and/or employment growth that exceeds growth estimates included in the applicable air quality plan, which, in turn, would generate emission not accounted for in the applicable air quality plan emissions budget. Therefore, proposed projects need to be evaluated to determine whether they would generate population and employment growth and, if so, whether that growth would exceed the growth rates included in the relevant air plans.

The replacement of the existing bridge is not capacity increasing and will not result in population growth in the county. The project will not conflict with or obstruct the air quality plan and therefore would result in a less than significant impact related to this environmental factor.

Mitigation Required: None

b) Less Than Significant With Mitigation: The proposed project has the potential to impact air quality via fugitive dust (particulate/PM10) and construction exhaust emissions generated during construction activities at the project site. Construction-related emissions are typically generated throughout the course of project implementation and development, and would originate from construction equipment exhaust, employee vehicle exhaust, dust from grading the land, exposed soil eroded by wind, and ROGs from coating and asphalt paving. Construction related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content. Despite this variability in project site conditions, the BCAQMD has identified that there are a number of feasible control measures that can be reasonably implemented to reduce fugitive dust emissions from construction activities.

To promote effective and comprehensive control measures for fugitive dust, Mitigation Measure 2 listed below details best practices for dust suppression measures. This measure will ensure that the dust and emissions generated by construction activities would be less than Significant Impact with Mitigation.

The proposed project would not result in long-term increases in the emissions of criteria pollutants and does not meet any of the screening criteria in Table 2 that would necessitate Emission Modeling. However, the proposed construction activities would result in the generation of short-term, construction-related emissions. Exhaust emissions from construction equipment would contain ozone precursors, PM10, and PM2.5. Additional particulate matter emissions, in the form of fugitive dust, could be generated during grading, earth moving and other similar activities. These construction-related exhaust and particulate matter emissions would occur in a designated non-attainment area.

The proposed project would result in temporary increases in potential fugitive dust emissions, which would include PM10 and PM2.5 in a designated non-attainment area. Therefore, in accordance with the BCAQMD CEQA Handbook and Chapter 13 of the County Code, the following mitigation shall be implemented:

Mitigation Measure 2 Fugitive Dust Control

To comply with Chapter 13 of the County Code and BCAQMD Rules 200 and 205 (Air Quality Nuisances and Fugitive Dust), the Public Works Department shall require implementation of all applicable fugitive dust mitigation measures in project plans and specifications. As part of this requirement, the contractor shall submit a Pollution Control Plan to the Department of Public Works for approval. The approved plan shall include all applicable dust mitigation measures, including but not limited to the following:

1. Reduce the amount of the disturbed area where possible.
2. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
3. All dirt stockpile areas should be sprayed daily as needed, covered, or a District approved alternative method will be used.
4. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.
5. Exposed ground areas that will be reworked at dates greater than one month after initial grading should have soil binders or other appropriate measure to provide temporary dust, wind and soil stabilization benefits
6. All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.

7. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
8. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.
9. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.
10. Install stabilization aggregate where vehicles enter and exit construction access roads onto streets. Crushed aggregate should be placed at the original grade of the construction access road. Filter fabric should also be applied below the aggregate.
11. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.
12. Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

<u>Timing & Implementation:</u> Contractor shall prepare Pollution Control Plan. Public Works shall approve the Plan prior to notice to proceed. Plan shall be implemented during and post construction, as applicable.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections.

The proposed project would result in temporary increases in equipment exhaust emissions during construction activities, which would include PM10, PM2.5, and ozone precursors in a designated non-attainment area. Therefore, in accordance with the BCAQMD CEQA Handbook, the following mitigation shall be implemented:

Mitigation Measure 3 Exhaust Emissions

To reduce exhaust emissions from construction equipment, the contractor shall implement all applicable measures, including but not limited to, the following:

1. Maintain all construction equipment in proper tune according to manufacturer's specifications;
2. Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);

3. Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;
4. Use on-road heavy-duty trucks that meet the ARB's 2007 standard for on-road heavy-duty diesel engines or other current requirements at a minimum, and comply with the State On-Road Regulation;
5. Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance;
6. All on- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5 minute idling limit; Diesel idling within 1,000 feet of sensitive receptors is prohibited;
7. Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors; In addition, the contractor shall prepare a nitrogen oxide (NOx) reduction plan to be submitted to the Public Works Department for approval.
8. Electrify equipment when feasible;
9. Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and
10. Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.
    a. Acceptable options may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.
    b. NOx reduction plan shall include an inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory should include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment.

<u>Timing & Implementation:</u> Contractor shall prepare and Emissions Reduction Plan. Public Works shall approve Plan prior to notice to proceed. The Emissions Reduction Plan shall be implemented during and post construction, as applicable.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections.

Mitigation Required: Mitigation Measure 2 and 3

c) Less Than Significant With Mitigation: Based on the information provided in section b.), above, the proposed project would not result in the violation of any air quality standards or contribute substantially to an existing or projected air quality violation, except for potential fugitive dust emission during construction activities, with mitigation proposed.

Fugitive dust emissions generated during construction has the potential to contribute cumulatively to the region's non-attainment of PM10 and PM2.5 emissions. Implementation of Mitigation Measure 2 would reduce potential cumulative fugitive dust emission impacts to less than significant.

Mitigation Required: Mitigation Measure 2

d) Less Than Significant With Mitigation: Several homes are located within 1 mile of the project site. Construction activities would generate emissions of criteria pollutants, including suspended and inhalable particulate matter and equipment exhaust emissions. These emissions could expose nearby sensitive receptors to pollutants concentrations.

Implementation of Mitigation Measure 2 and 3 would reduce impacts of construction-related fugitive dust and exhaust emissions in relation to sensitive receptors to a level that is less than significant

Mitigation Required: Mitigation Measure 2 and 3

e) No Impact: Construction activities at the project site could include objectionable odors from tailpipe diesel emission and from new asphalt. Since odor impacts would be temporary and limited to the area adjacent to the construction operations, and because the project site is located in a low-density area of the county, odors would not affect a substantial number of people for an extended period of time.

Mitigation Required: None

4.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	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?		**X**		
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?		**X**		
c) Have a substantial adverse effect on 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?		**X**		
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?		**X**		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			**X**	
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?				**X**
g) A reduction in the numbers, a restriction in the range, or an impact to the critical habitat of any unique, rare, threatened, or endangered species of animals?		**X**		
h) A reduction in the diversity or numbers of animals onsite (including mammals, birds, reptiles, amphibians, fish or invertebrates)?		**X**		
i) A deterioration of existing fish or wildlife habitat for foraging, breeding, roosting, nesting, etc.?		**X**		
j) Introduction of barriers to movement of any resident or migratory fish or wildlife species		**X**		
k) Introduction of any factors (light, fencing, noise, human presence and/or domestic animals) which could hinder the normal activities of wildlife?			**X**	

Setting

The project area contains several habitat types consisting of valley/foothill riparian forest, annual grasslands, pasture, deciduous orchards, wetlands, and riverine. The following are descriptions of the extent and locations of each habitat type:

- Valley-foothill riparian forest occurs north and south of the Ord Ferry Road.
- Annual grasslands occur in fringes between other habitats and in small pockets, primarily north of Ord Ferry Road.
- Deciduous orchards occur on the north east side of the project site.
- Riverine habitats consist of Little Chico Creek.

Several special-status species are known to exist or have the potential to exist within or adjacent to the project site based on habitats at the project site. Special-status species are those that are subject to the jurisdiction of one or more of the following:

- Listed as threatened or endangered, or are proposed or candidates for listing under the California Endangered Species Act (CESA, 14 California code of Regulations 670.5) or the federal Endangered Species Act (ESA, 50 Code of Federal Regulations 17.12);
- Listed as a species of Special concern by CDFW or protected under the California Fish and Game Code (CFGC, Section 3503.5);
- Included on the CNPS List 1A, 1B, or 2;
- Protected by the Migratory Bird Treaty Act (MBTA); or
- Species that are otherwise protected under the policies or ordinances at the local or regional level as required by the California Environmental Quality Act (CEQA, Section 15380).

A complete list of all sensitive natural communities and special-status species with a potential for occurrence at the project site is presented in the Natural Environment Study (see **Attachment B**) prepared for this project. Several technical studies were conducted to evaluate the project site in terms of biological, botanical and wetlands, including a rare plant survey, a biological resources assessment, and a draft Delineation of Waters of the United States. Table 3 presents those special-status species that are known to occur or have a moderate to high potential for occurrence at the project site.

Table 3: Special Status Species with Known or Moderate to High Potential Occurrences

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
SENSITIVE NATURAL COMMUNITIES					
Great Valley valley oak riparian forest	N/A	SNC	Large corridors of riparian forest dominated by valley oaks	A	None. Valley oak riparian forest is present within the BSA; however, this CDFW designated SNC does not occur in the BSA.
PLANTS					
Brazilian watermeal	*Wolffia brasiliensis*	CNPS 2B.3	Assorted shallow freshwater marshes and swamps. Blooming Period (BP): Apr.-Dec.	A	None. Not observed during protocol-level surveys.
California beaked-rush	*Rhynchospora californica*	CNPS 1B.1	Freshwater mashes, swamps, bogs, fens, meadows, and seeps. BP: May-Jul.	A	None. Range above 147 feet elevation and not observed during protocol-level surveys.
California satintail	*Imperata brevifolia*	CNPS 2B.1	Scrub habitats, alkali meadows and seeps, and mesic riparian scrub. BP: Sep.-May.	A	None. Not observed during protocol-level surveys.
Silky cryptantha	*Cryptantha crinita*	CNPS 1B.2	Gravelly and cobbly streambeds. BP: Apr.-May.	A	None. Not observed during protocol-level surveys.
Slender-leaved pondweed	*Stuckenia filiformis ssp. alpina*	CNPS 2B.2	Assorted shallow freshwater marshes and swamps. BP: May-Jul.	A	None. Not observed during protocol-level surveys.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
Watershield	*Brasenia schreberi*	CNPS 2B.3	Freshwater marshes and swamps. BP: Jun.-Sep.	A	None. Not observed during protocol-level surveys.
Wooly rose mallow	*Hibiscus lasiocarpos var. occidentalis*	CNPS 1B.2	Freshwater marshes and swamps. Often in riprap on levees. BP: Jun.-Sep.	A	None. Not observed during protocol-level surveys.
INVERTEBRATES					
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	Blue elderberry shrubs in riparian zones.	A	None. There are no elderberry shrubs within the BSA
FISH					
Central Valley spring-run chinook salmon	*Oncorhynchus tshawytscha*	FT/ST	Sacramento River and its tributaries.	HP	**Moderate**. Non-natal spring-run Chinook salmon may use the portions of Little Chico Creek within the BSA as rearing habitat during the spring.
Central Valley steelhead	*Oncorhynchus mykiss*	FT	Sacramento and San Joaquin Rivers and their tributaries.	HP	**Known.** Steelhead use Little Chico Creek as a migration corridor and spawn in its upper reaches. Little Chico Creek is designated as critical habitat for steelhead.
Delta smelt	*Hypomesus transpacificus*	FT/ST	Endemic to the San Francisco Bay and Sacramento–San Joaquin Delta Estuary	HA	None. Delta smelt are not known to occur in Butte County; therefore, the project

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
			(Delta). Found only from the San Pablo Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties		will have no effect on Delta smelt (50 CFR Part 27, April 7, 2010). Therefore, the Project will have no effect on this species
Sacramento River winter-run Chinook	*Oncorhynchust shawytscha*	FE/SE	Sacramento River.	HA	None. Little Chico Creek is not within this Evolutionary Significant Unit (ESU) range; therefore, the Project will have no effect on this species.
Southern Distinct Population Segment (sDPS) of North American Green Sturgeon	*Acipenser medirostris*	FT	Spawning habitat in Sacramento, Klamath and Rogue Rivers.	HA	None. There is no suitable habitat within the BSA; therefore, the Project will have no effect on this species.
MAMMALS					
Pallid bat	*Antrozous pallidus*	SSC	Colonial species; roosts in small crevices in buildings, bridges, and hollow trees. Common in dry environments.	A	Low. There is poor habitat under the bridge within the BSA due to the height of the bridge and no bats observed during field surveys.
Western red bat	*Lasiurus blossevillii*	SSC	Solitary species; roosts in trees often	HP	**Moderate**. There is marginal habitat

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
			in riparian forests and occasionally oak woodlands		within the riparian forest present within the BSA.
REPTILES & AMPHIBIANS					
California red-legged frog	*Rana draytonii*	FT/ SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds.	A	None. There is no suitable breeding habitat within the BSA and CRLFs have been extirpated from the Central Valley since 1960 (USFWS 2002).
Giant garter snake	*Thamnophis gigas*	FT/ST	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and there associated uplands. (sea level - 400 ft elevation)	HP	**High**. There is suitable aquatic habitat for GGS present and CNDDB occurrences in close proximity to the BSA. May affect, and is likely to adversely affect.
Western pond turtle	*Emys marmorata*	SSC	Artificial ponds, pond margins vegetated by heavy riparian and shrub growth.	HP	**High**. The drainages present provide suitable aquatic habitat for pond turtles in the BSA
BIRDS					
Bald Eagle	*Haliaeetus leucocphealus*	FP	Coast, large lakes and river systems, with open forests with large trees and snags.	A	None. No nesting habitat within or adjacent to the BSA.
California	*Laterallus jamaicensis*	ST/FP	Densely vegetated tidal and freshwater	A	None. Not found on the valley floor,

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present/ Absent	Potential to Occur/Rationale
black rail	*coturniculus*		emergent wetlands		occupy fresh emergent wetland habitat in the foothills, delta and coast. No effect.
Swainson's Hawk	*Buteo swainsoni*	ST	Open grasslands, shrublands and agricultural fields, often near riparian forests.	HP	**High**. There is suitable nesting habitat and marginal foraging habitat present in the BSA.
Tri-colored blackbird	*Agelaius tricolor*	ST	Fresh emergent wetlands, blackberry brambles, agricultural fields and grasslands.	HP	**Moderate**. The fresh emergent wetland and blackberry patches provides marginal habitat within the BSA.
Western yellow billed cuckoo	*Coccyzus americanus occidentalis*	FT/SE	Open woodlands, riparian areas, orchards and moist, overgrown thickets	HP	**Moderate**. There is suitable nesting habitat, CNDDB occurrences within 5 miles of the BSA, and critical habitat within 1.5 miles. No effect.
Code Designations					
Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Candidate (SC), State Species of Special Concern (SSC); California Native Plant Society (CNPS); Sensitive Natural Community (SNC)					

Discussion

a) Less Than Significant With Mitigation: The following identifies the species that may be affected by the proposed project, their listing status, avoidance measures and mitigation measures:

CV Steelhead Critical Habitat

Little Chico Creek is designated as critical habitat for CV steelhead by NMFS (70 FR 52488). The ESA requires that critical habitat be designated for all species listed under the ESA. Critical habitat is designated for areas that provide essential habitat elements that enable a species survival and which are occupied by the species during the species listing under the ESA. Areas outside of the species range of occupancy during the time of its listing can also be determined as critical habitat if the agency decides that the area is essential to the conservation of the species.

Survey Results

Little Chico Creek within the Biological Survey Area (BSA) provides a migration/emigration corridor and non-natal rearing habitat. The freshwater migration corridor and freshwater rearing sites are critical habitat primary constituent elements (PCE) that provide adult migration, and juvenile refuge, mobility and survival, and are essential to the conservation of steelhead. There is no spawning habitat within the BSA (pers. comm. January 23, 2018. Tracy McReynolds, CDFW Fisheries Biologist).

Project Impacts

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 25 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high water elevation will be a portion of the new bridge supports and removal of the old bridge supports.

A clear water diversion using appropriately sized culverts and clean river gravel will be installed in Little Chico Creek as part of the temporary road. The temporary road including all culverts will be removed on or before October 31st of each construction season. The site will be stabilized with temporary erosion and sediment controls prior to winter storms. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Tree removal is localized and constitutes a minor temporary impact that is completely off-set by restoring the area after construction. In addition, disturbance of the streambed and banks during the installation of the clear water diversion may lead to temporary increases in turbidity. The project may affect, but it not likely to adversely modify CV steelhead critical habitat.

Mitigation Measure 4 Central Valley Steelhead Critical Habitat

The following are avoidance and minimization measures recommended in order to avoid and minimize impacts to critical habitat.

- If flowing water is present, a silt screen shall be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen shall be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.

- An erosion control plan that incorporates erosion control BMPs shall be created and implemented prior to the wet season (November 1 – April 1) in order to avoid sediment from entering into WOTUS.

- BMPs shall be implemented that are necessary to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs will include permanent and temporary erosion control measures, including use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, and ultimately seeding and revegetating.

- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.

- All fueling and/or equipment maintenance shall occur 50 feet from all water bodies and riparian areas. Any chemical spill within the active channel of the Little Chico Creek will be reported to NMFS, CDFW and other appropriate resource agencies within 48 hours.

- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) shall be developed and implemented by the contractor. Spill prevention measures will include stockpiling absorbent booms, staging hazardous materials at least 50 feet away from WOTUS, and maintaining and checking construction equipment to prevent fuel and lubrication leaks. SWPPP measures will utilize applicable BMPs such as use of silt fences, straw bales, or other methods necessary to minimize storm water discharge associated with construction activities.

- The contractor should have absorbent booms available within 50 feet of the live channel during all in channel work to be further prepared for quick containment of any spills within or adjacent to Little Chico Creek.

Compensatory Mitigation

Impacts to CV steelhead critical habitat will be temporary. Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities. Portions of the streambed of Little Chico Creek disturbed by construction activities will be restored to a pre-construction condition. The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Trees will be mitigated for onsite and in-kind at a 3:1 ratio. Specific conditions of the tree replanting will be detailed in the CDFW §1602 Streambed Alteration Agreement which is part of Mitigation Measure 13 below.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Anadromous Fish

Central Valley (CV) spring-run Chinook salmon ESU are threatened under the ESA and the CESA. The CV spring-run Chinook salmon ESU includes all naturally spawned populations in the Sacramento River and its tributaries as well as fish from the Feather River Fish Hatchery (FRFH) spring-run Chinook program (NMFS (a) August 11, 2012). CV spring-run Chinook are currently distributed throughout the Sacramento River and its tributaries as far north as the Keswick Dam. They enter into the Sacramento River from the San Francisco Bay around March through September to spawn. CV spring-run Chinook typically enter into freshwater systems as immature fish and hold within stream systems for several months before spawning. Spawning occurs from August through October. Fry emerge and disperse to downstream habitats where they hide within gravel substrates. When fry become larger they move into other areas of the stream that offer larger refugia such as woody debris, calm channels, undercut banks, and fallen trees. Juveniles migrate to delta, bay and estuary environments at all sizes. Some juveniles migrate immediately while others take time to grow in freshwater systems before migrating into brackish and salt water environments.

Central Valley steelhead Distinct Population Segments (DPS) are threatened under the ESA. The CV steelhead DPS includes all natural spawning anadromous populations of steelhead in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead found in the San Francisco Bay and San Pablo Bay and their associated tributaries. There are also two artificial populations that are included within the CV steelhead DPS which are from the Coleman Fish Hatchery program and the FRFH program (NMFS August 1, 2012). The CV steelhead DPS are currently distributed throughout the Sacramento River, northern portions of the San Joaquin River and into the far reaches of their associated tributaries. They enter into freshwater systems from August through April and hold until flows are high enough to migrate into the far reaches of tributaries. CV steelhead typically spawn from December to April and unlike Pacific salmon, do not die after spawning. Their smaller size allows them to access the far reaches of tributaries where their preferred spawning grounds occur. Records have shown that CV steelhead spawning is concentrated in the far reaches of tributaries, most notably in the northern accessible tributaries of the Sacramento River (NMFS 2009). When fry emerge, they disperse to shallow bank margins for refuge. Fry utilize coarse cobble substrates during their first stages of development. As juvenile steelhead get larger they begin to move into faster currents and deeper pools. Juvenile steelhead enter into salt water environments typically after one to three years of growth in their freshwater environments (U.S Department of the Interior 2008).

Current threats facing anadromous fish include loss of historic spawning habitat, degradation of current stream habitat and threats to genetic integrity (NMFS 2009).

Survey Results

The stretch of Little Chico Creek within the BSA has been designated by the USFWS as critical habitat for CV steelhead (70 FR 52488 (September 02, 2005)) (Figure 4). Migration into Little Chico Creek would come from Angels Slough, which is a tributary of Butte Creek, which in turn is a tributary of the Sacramento River. However, Angels Slough does not have a year-round flow. Therefore, migration of anadromous fish into Little Chico Creek can only occur during high flows when all the downstream tributaries are flowing and have a direct hydrologic connection to the Sacramento River. Further, many of the PCEs of critical habitat for CV steelhead are lacking within the BSA. The stretch of Little Chico Creek within the BSA lacks spawning gravel since the substrate within the bed of the creek is primarily mud and silt, the water quantity is insufficient, and there is a lack of suitable rearing sites such as large rocks/boulders, side channels, undercut banks, and aquatic vegetation.

Although there is no spawning or adult migration habitat present, the BSA does offer suitable rearing and emigration habitat for non-natal juveniles during the late fall through late spring months (i.e. November 1 – June 30) when water levels are high and water temperatures are cool. During the summer months (i.e. July 1-October 31), the intermittent hydrology, still water, and warm temperatures within the BSA make Little Chico Creek unsuitable habitat for any lifestage of salmonid including CV spring-run Chinook (pers. comm. January 23, 2018. Tracy McReynolds, CDFW Fisheries Biologist). Therefore, if Little Chico Creek contains water between May 1 and June 30 there is a potential for non-natal juveniles to be present. If during this time the creek is flowing, the non-natal juveniles have the ability to escape harm's way by migrating up- or downstream. However, given the intermittent nature of Little Chico Creek, any non-natal juveniles that fail to leave the BSA before the creek stops flowing for the year would be trapped and eventually perish.

Project Impacts

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 25 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high water elevation will be a portion of the new bridge supports and removal of the old bridge supports. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain.

The Project will be completed over two (2) years. The Contractor will need to construct a temporary access road just north of the existing bridge to accommodate construction vehicle traffic and oversized farm equipment during the staged bridge construction. Farm equipment greater than the Stage 1 and Stage 2 bridge width regularly use Ord Ferry Road during the typical construction season and will need to be detoured through the construction zone.

The temporary access road will need to be installed from May 1 through October 31 in both seasons of construction to complete the project in two construction seasons. Shorter durations for the temporary access road will result in a third season of construction and a second over winter for the construction site. A clear water diversion including appropriately sized culverts and clean river gravel within Little Chico Creek is anticipated. The temporary road and culverts will be removed during the winter between the construction seasons.

Mitigation Measure 5 Anadromous Fish

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- The temporary access road will need to be installed from May 1st through October 31st in both seasons of construction to complete the project in two construction seasons. Shorter durations for the temporary access road will result in a third season of construction and a second over winter for the construction site.

- If water is present within the BSA between May 1st and October 31st then a clear water diversion using appropriately sized culverts will be installed in Little Chico Creek. The temporary road including culverts will be removed on or before October 31st of each construction season. A qualified biologist shall monitor the construction site during placement and removal of stream diversions to ensure that any harm or loss of salmonids is minimized and documented.

- If water is present and the clear water diversion is installed between May 1st and June 30th when listed salmonids have the potential to be present, then a qualified biologist will perform fish relocation prior to the installation of the clear water diversion.

- The qualified biologist with expertise in the areas of anadromous salmonid biologist, including handling, collecting, and relocating salmonids; salmonid habitat relationships; and biological monitoring shall perform fish relocation. Fish relocation will be performed in a manner which minimizes all potential risks to CV steelhead and CV spring run Chinook.
    - Electrofishing, if used, shall be performed by a qualified biologist and conducted according to the NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act.

- Any pile driving that occurs between May 1st and June 30th will occur on land and at least 10 meters from Little Chico Creek. If flowing water is present, a silt screen shall be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen shall be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.

- An erosion control plan that incorporates erosion control BMPs shall be created and implemented prior to the wet season (November 1 – April 1) in order to avoid sediment from entering into WOTUS.

- BMPs shall be implemented that are necessary to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs will include permanent and temporary erosion control measures, including use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, and ultimately seeding and revegetating.

- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.

- All fueling and/or equipment maintenance shall occur 50 feet from all water bodies and riparian areas. Any chemical spill within the active channel of the Little Chico Creek will be reported to NMFS, CDFW and other appropriate resource agencies within 48 hours.

- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) shall be developed and implemented by the contractor. Spill prevention measures will include stockpiling absorbent booms, staging hazardous materials at least 50 feet away from WOTUS, and maintaining and checking construction equipment to prevent fuel and lubrication leaks. SWPPP measures will utilize applicable BMPs such as use of silt fences, straw bales, or other methods necessary to minimize storm water discharge associated with construction activities.

- The contractor should have absorbent booms available within 50 feet of the live channel during all in channel work to be further prepared for quick containment of any spills within or adjacent to Little Chico Creek.

- A NMFS approved fish biologist will perform fish relocation according to a NMFS approved plan.

Compensatory Mitigation

Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities. Portions of the streambed of Little Chico Creek disturbed by construction activities will be restored to a pre-construction condition. The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Trees will be mitigated for onsite and in-kind at a 3:1 ratio.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USFWS is the regulatory enforcement agency.

Giant Garter Snake

Giant garter snakes are listed as threatened under the ESA and CESA. They are the largest species of garter snake. Dull yellow striping and a wide head commonly distinguish GGS from other common species of garter snake. GGSs are found in the wetlands of the Sacramento and San Joaquin Valleys from Chico, Butte County to Mendota Wildlife Area, Fresno County. Suitable habitat includes marshes, sloughs, back waters of rivers, irrigation canals, drainage canals, agricultural wetlands, flooded rice fields and occasionally streams with low gradient and slow to stagnant waters. GGSs breed from March to April and females give birth to live young from July to early September. Current threats facing the GGS is urbanization, flood control and canal maintenance, grazing and agricultural practices, wetland management for water fowl, invasive species and natural gas exploration (USFWS 2012).

Aquatic Habitat

Suitable aquatic habitat for GGS consists of marshes, sloughs, ponds, small lakes, low gradient streams, irrigation ditches and agricultural wetlands (e.g. rice fields) (USFWS 2012). The BSA contains suitable aquatic habitat for GGS in the form of Little Chico Creek, two tributaries of Little Chico Creek, an irrigation canal, and a fresh emergent wetland in the eastern end of the BSA. Water is present in these areas during the GGS’s active season (Gallaway Enterprises personal observation) and wetland vegetation was observed along the edges of the creeks for foraging and refuging GGS.

Upland Habitat

Suitable upland habitat for GGS consists of habitat adjacent to suitable aquatic habitat. Suitable upland habitat often contains low growing vegetation, exposed canopy and small mammal burrows or other forms of refuge (e.g. rip rap, broken concrete etc.) (USFWS2012). The BSA contains suitable upland habitat for GGS. The adjacent land includes remnant riparian forest, wetlands, annual grassland, and deciduous orchards.

Survey Results

Suitable habitat components or Primary Constituent Elements (PCE) for GGS consist of (1) adequate water during the snake’s active season, (2) emergent herbaceous wetland vegetation for escapement and foraging, (3) grassy banks and openings in waterside vegetation for basking, and (4) higher elevation upland habitat for cover and refuge from flooding (USFWS 2012). There is suitable aquatic and upland habitat that contains the PCEs for GGS within and surrounding the BSA. In addition, there are numerous GGS CNDDB occurrences within 5 miles of the BSA, including one that is adjacent to the east of the BSA (CNDDB occurrence # 396).

Project Impacts

Construction activities resulting in temporary and permanent impacts to GGS aquatic and upland habitat GGS will occur and are depicted in Figure 6. The project may affect, and is likely to adversely affect GGS. To ensure no direct take of GGS occur due to the proposed project, the following mitigation measure will be implemented.

Mitigation Measure 6 Giant Garter Snake

The following are recommended avoidance and mitigation measures that shall be implemented prior to the start of construction and continue throughout project activities.

A qualified biologist shall conduct a pre-construction survey 24 hours before any vegetation removal or ground disturbance activities are conducted within GGS aquatic and upland habitat. Whenever a lapse in construction activity within GGS habitat of 2 weeks or more has occurred, the area will be re-surveyed.

A qualified biologist shall be onsite to monitor for GGS during all vegetation removal and initial ground disturbing activities within GGS habitat. The biological monitor will assist the contractor in avoiding disturbance to burrows in the upland habitat during the GGS active period. After the initial ground disturbing activities have been completed, the biological monitor will conduct weekly checks of the site to ensure compliance with the conservation measures.

All project related ground disturbances to GGS habitat shall occur in the GGS active season May 1st through October 31st. The GGS active season typically ends on October 1st, however in the event that there is constant activity, including constant ground and noise disturbances, that will preclude snakes from the project area, the GSS active season will extend to October 31st.

Snake exclusion fencing may be installed in areas that may result in inadvertently entrapping snakes and other wildlife, such as trenches, open pits, and dewatered areas. Fence location shall be designated by the qualified biologist. Snake exclusion fencing shall be installed after vegetation removal has occurred in GGS suitable habitat areas so as not to trap any refuging snakes within the project area during vegetation removal. The fence must be maintained throughout the duration of the project and removed upon completion of the project. The exclusion fencing will be inspected regularly by the biological monitor to ensure they are being properly maintained.

All excavated areas more than 1 foot deep that could entrap GGS and would be left open overnight will be covered or, if covering the excavated area is not feasible, then the excavated area will be provided with one or more escape ramps.

Tightly woven fiber netting (mesh size less than 0.25 in), coconut coir matting, or similar material will be used for erosion control purposes. Plastic microfilament or wire mesh in straw waddles or erosion control blankets will not be used. The edge of the erosion control materials will be buried in the ground to prevent GGS from crawling underneath the material.

If a GGS is observed at any time during project activities then construction shall stop within 100 feet of the observation and the qualified biologist and/or resident engineer shall be contacted immediately for further guidance.

If there is incidental take of a GGS during project activities then a qualified biologist and/or resident engineer shall be contacted immediately and the USFWS and CDFW shall be notified within 24 hours and consulted for further guidance.

A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a qualified biologist for all personnel that will be within the project area for more than 30 minutes, prior to the commencement of their responsibilities. The program shall provide workers with information on their responsibilities with regard to avoiding impacts to GGS. An overview of the life history of the GGS, information on take prohibitions, protections afforded these species under the ESA, and an explanation of the relevant terms and conditions.

All vegetation clearing within 200 feet of the banks of suitable GGS aquatic habitat will be limited to the smallest area feasible and equipment movement will be limited to designated haul routes and staging areas. Avoided GGS habitat will be flagged for avoidance.

All temporarily disturbed GGS habitat will be restored to pre-project conditions.

Compensatory Mitigation

The project will permanently and temporarily impact upland GGS habitat. To mitigate permanent and temporary impacts to GGS upland habitat the following is recommended.

- Permanent loss of GGS habitat will be compensated by purchasing creation credits at the Sutter Basin Conservation Bank or at another USFWS/CDFW approved mitigation bank with a service area that accommodates the project location. Credits shall be purchased prior to the start of construction. Table 3 shows the amount of credits that will need to be purchased.

- Temporary disturbance to snake habitat shall be restored to pre-project conditions within one (1) year of completion of construction.

- Restoration and monitoring shall follow the USFWS Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat (1997). If restoration is unsuccessful, as determined by the USFWS, consultation will be reinitiated

Table 4 shows the amount of credits that will need to be purchased.

Table 4: GGS Mitigation Requirements

Effect	Acres	Mitigation Ratio	Required Action	Acres to be Mitigated
Upland Permanent	0.57	1:1	Purchase Credits at an Approved USFWS/CDFW GGS Mitigation Bank	0.57
Upland Temporary	1.50	N/A	Restore/Monitor	1.5
Aquatic Permanent	0.03	3:1	Purchase Credits at an Approved USFWS/CDFW GGS Mitigation Bank	0.09
Aquatic Temporary	0.17	N/A	Restore/Monitor	0.17
			Total Mitigation Acres	**2.33**

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USFWS and CDFW are the regulatory enforcement agencies.

The aforementioned avoidance and mitigation measures may be modified per the terms of the USFWS Biological Opinion and/or CDFW §2081 Incidental Take Permit once issued.

Western Pond Turtle

The western pond turtle is a SSC in California. Western pond turtles are drab, darkish-colored turtles with a yellowish to cream colored head. They range from the Washington Puget Sound to the California Sacramento Valley. Suitable aquatic habitats include slow moving to stagnant water, such as back waters and ponded areas of rivers and creeks, semi-permanent to permanent ponds and irrigation ditches. Preferred habitats include features such as hydrophytic vegetation, for foraging and cover, and basking areas to regulate body temperature. In early spring through early summer, female turtles begin to move over land in search for nesting sites. Eggs are laid on the banks of slow moving streams. The female digs a hole approximately four inches deep and lays up to eleven eggs. Afterwards the eggs are covered with sediment and are left to incubate under the warm soils. Eggs are typically laid between March and August (Zeiner et. al. 1990). Current threats facing the western pond turtle include loss of suitable aquatic habitats due to rapid changes in water regimes and removal of hydrophytic vegetation.

Survey Results

Suitable western pond turtle habitat occurs within Little Chico Creek and the other drainages present in the BSA when water is present in these drainages. In addition, there is one western pond turtle CNDDB occurrences within five miles of the BSA and turtles were observed on site. The western pond turtle occurrence is in the ponds at the Chico Municipal Sewage Treatment Plant along Little Chico Creek, approximately 4 miles upstream of the BSA (occurrence number 1,224, CNDDB 2017).

Project Impacts

With the implementation of the following mitigation measure there will be no direct or indirect impacts to western pond turtles. Direct and indirect impacts to western pond turtles will be avoided by conducting a survey immediately prior to in-stream work, relocating turtles as needed, and creating non-disturbance buffers if turtle nests are discovered.

Mitigation Measure 7 Western Pond Turtle

The following are avoidance and minimization measures recommended in order to avoid and minimize potential impacts to western pond turtle:

- Immediately prior to conducting in-stream work, a qualified biologist shall conduct a survey to determine the presence or absence of western pond turtles. If western pond turtles are observed where they could be potentially impacted by project activities, as determined by the on-site biologist, then work shall not be conducted within 100 feet of the sighting until the turtle(s) have left the project site or a qualified biologist has relocated the turtle(s) immediately outside of the project site.

- If turtle eggs are uncovered during construction activities, then all work shall stop within a 25 feet radius of the nest and the on-site biologist should be notified immediately. The 25-foot buffer should be marked with identifiable markers that do not consist of fencing or materials that my block the migration of young turtles to the water or attract predators to the nest site. No work will be allowed within the 25 foot buffer until the turtle eggs have hatched or the nest fails.

- All portions of the project site that could result in inadvertently trapping turtles, such as open pits, trenches, and de-watered areas will be covered and/or exclusion fencing will be installed to prevent turtles from entering these areas.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to western pond turtle will occur.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Swainson's Hawk

Swainson's hawk are State-listed as threatened. They are found throughout the western part of the United States and from Canada to Mexico. Swainson's hawks are a fairly large, slender hawk with three different color morph displays. The most common morph in northern California is the dark morph which demonstrates black to dark brown under coverts and flight feathers. Suitable habitat includes open grasslands or agricultural fields that are adjacent to a riparian forest or oak woodland. Swainson's hawks primarily nest in riparian forests next to open fields that provide foraging opportunities. Nesting and courtship begin in April. Current threats facing the Swainson's hawk are loss of nesting and foraging habitat, change in agricultural regimes, pesticides, poaching and human disturbances (CDFW 1994)

Survey Results

There were no Swainson's hawks observed nesting or foraging within or adjacent to the project site during the biological surveys; however, there are suitable nesting trees within the BSA. There are large oak trees within the riparian corridor that provide suitable nesting habitat. The surrounding area to the north, east and west contain mostly orchards, which is not considered suitable foraging habitat, however, patches of annual grassland within the BSA and south of the BSA provide nearby foraging habitat. Furthermore, there are multiple CNDDB records of Swainson's hawk nesting within 5 miles of the BSA.

Project Impacts

There will be no impacts to Swainson's hawks with the implementation of avoidance and minimization measures. There will be no impacts to Swainson's hawk foraging habitat. The portion of the BSA that contains open annual grassland is proposed to be used as a staging area for the contractor since there is not enough room to stage within the roadway. There will be no permanent impacts to this area of the BSA. This staging area will be restored to its original pre-construction condition after construction is complete. Direct and indirect impacts to Swainson's hawk nests will be avoided by conducting a pre-construction survey and creating non-disturbance buffers if nesting Swainson's hawks are discovered.

Mitigation Measure 8 Swainson's Hawk

The following recommendations, when implemented, will avoid and minimize impacts to Swainson's hawks:

- If construction is to take place during the nesting season (March 1st – August 31st) then a pre-construction survey for Swainson's hawk will be conducted by a qualified biologist. The survey shall be conducted within seven (7) days prior to the start of construction activities to determine presence or absence of nesting Swainson's hawk.

- If a Swainson's hawk is observed nesting within the project area, or within ¼ mile of the project area, then a ¼ mile to 500-foot radius buffer will be established depending on the nesting pair's level of disturbance around construction equipment. Fencing or other appropriate equipment will be used to indicate the buffer within the County right-of way. Work will not be allowed in the buffer until the young have fledged (able to fly) and are no longer dependent on the nest or the nest fails as determined by a qualified biologist.

- All areas temporarily disturbed by construction activities within the BSA will be revegetated and restored to pre-project conditions.

Compensatory Mitigation

There will be no impacts to nesting Swainson's hawk or Swainson's hawk foraging habitat with the implementation of avoidance and minimization measures. No Compensatory Mitigation is required.

<u>Timing & Implementation:</u> Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Tri-Colored Blackbird

Tri-colored blackbirds were listed as a threatened species in April 2018. They range from southern Oregon through the Central Valley, and coastal regions of California into the northern part of Mexico. Tri-colored blackbirds are medium size birds with black plumage and distinctive red marginal coverts, bordered by whitish feathers. Suitable habitat includes open grasslands, agricultural fields, blackberry brambles and marshes. Tri-colored blackbirds nest in large colonies within agricultural fields, marshes with thick herbaceous vegetation or in clusters of large blackberry bushes. They are nomadic migrators, so documenting occurrence at any location does not mean that they will necessarily return to that area. Current threats facing tri-colored blackbirds include loss of habitat due to land conversion, increased predation through human disturbances, and fluctuating water regimes (Churchwell et al. 2005).

Survey Results

There is suitable nesting habitat within the BSA where dense patches of blackberry brambles occur. Further, there are two tri-colored blackbird CNDDB occurrences within 5 miles of the BSA (Occurrence 109 and 260, CNDDB 2017). No tri-colored blackbirds were observed during the biological evaluation.

Project Impacts

With the implementation of the following mitigation measure there will be no direct or indirect impacts to tri-colored blackbird.

Mitigation Measure 9 Tri-colored Blackbird

While there were no tri-colored blackbirds observed within the BSA during the site visit, there is suitable habitat present within the BSA which will likely be impacted by construction activities. The following are recommended avoidance and minimization measures for tri-colored blackbird:

- Project activities, related to site including grubbing and vegetation removal within the BSA shall be initiated outside of the bird nesting season (February 1 – August 31).
- If project activities that involve vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:

- A qualified biologist will conduct a pre-construction survey within 7 days of starting vegetation removal.
- If an active tri-colored blackbird nest (i.e. with egg(s) or young) is observed within 250 feet of the BSA during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the County weekly.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to tri-colored blackbird will occur.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Western Yellow-Billed Cuckoo

The yellow-billed cuckoo is federally listed as threatened and is listed as endangered by the State. Yellow-billed cuckoos are medium sized, slender, long-tailed birds that require large blocks of riparian forest habitat. In California, yellow-billed cuckoos are primarily found in expansive riparian forests associated with the Sacramento River. They primarily feed on caterpillars and katydids, when available, but will also feed on tree frogs, cicadas, grasshoppers and other insects. The development of the young is very rapid, with a breeding cycle of 17 days from egg-laying to fledging. The USFWS designated critical habitat in 2014 and critical habitat occurs within 1.5 miles from the project site (79 FR 48547 48652, August, 15, 2014).

Survey Results

The BSA contains a wide corridor of riparian habitat that is in close proximity to the Sacramento River and could provide nesting habitat for western yellow-billed cuckoos. There are many western yellow billed cuckoo CNDDB occurrences along the Sacramento River corridor within 5 miles of the BSA. Occurrence 13 is the closest occurrence to the BSA at approximately 2.85 miles (CNDDB 2017).

In 2015, the USFWS approved a survey protocol for the western yellow-billed cuckoo, which requires that surveyors obtain an ESA 10(a)1(A) recovery permit before a survey is conducted (Halterman et al. 2015). Obtaining a 10(a)1(A) recovery permit takes a minimum of 6 months to obtain. The USFWS also does not allow assumption of presence of western yellow-billed cuckoos. These restrictions make it challenging to conduct presence/absence surveys on projects that might be constructed many years after the environmental documentation is completed. It also presents challenges with analyzing project impacts and developing appropriate mitigation measures.

Protocol level surveys were not conducted nor will they be needed. Western yellow-billed cuckoos are late spring migrants, with typical nesting between late June and late July. Site mobilization and vegetation removal necessary to construct the project will be performed prior to May 15 and construction activities will stay continuous into the western yellow-billed cuckoo nesting season which would preclude the birds from nesting near the construction site. Western yellow-billed cuckoos may already have been precluded from nesting in or near the site due to the heavy volume of traffic on Ord Ferry Road.

Project Impacts

The project will have no effect on western yellow-billed cuckoos or their habitat. Construction activities will require the removal of a narrow strip of riparian vegetation, and could temporarily affect western yellow-billed cuckoo habitat. To ensure no impacts to western yellow-billed cuckoos occur due to the proposed project, the following avoidance and minimization measures will be implemented.

Mitigation Measure 10 Western Yellow-Billed Cuckoo

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- Any vegetation removal and/or ground disturbance activities will take place prior to the western yellow-billed cuckoo nesting season (June 15-August 15).
- Construction activities will remain constant from May 1 throughout the western yellow-billed cuckoo nesting season, thus deterring birds from nesting in or near the project area.
- There shall be no staging or ground disturbance activities outside of the BSA.
- Trees removed greater than 4 inches DBH will be re-planted on site at a 3:1 ratio with like kind trees and the project site will be restored to pre-project conditions.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to western yellow billed cuckoo will occur.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USFWS is the regulatory enforcement agency.

Migratory Birds

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

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

Survey Results

The riparian habitat within the BSA provides nesting habitat for a variety of migratory bird and raptor species including the yellow breasted chat. During the field survey, no old bird nests were found under the Ord Ferry Road Bridge, however it is possible for cliff swallows, barn swallows, and black phoebes, which commonly nest on the sides or pillars of bridges to occupy the area. A pre-construction survey is recommended prior to construction activities to determine potential locations of active avian species nests within or in close proximity of the BSA.

Mitigation Measure 11 Migratory Birds

To avoid impacts to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and the CFGC, the following avoidance and minimization measures are recommended.

The following are avoidance and minimization measures for California avian species of special concern and species protected under the MBTA and the CFGC.

- Any vegetation removal and/or ground disturbance activities should take place during the avian non-breeding season (September 1 – January 31).
- If construction is to begin within the avian breeding season (February 1 – August 31) then a migratory bird and raptor survey shall be conducted within the BSA by a qualified biologist. A qualified biologist shall:
    - Conduct a survey for all birds protected by the MBTA and CFGC within seven (7) days prior to construction activities, and map all nests located within 200 feet of construction areas;
    - Develop buffer zones around active nests as recommended by a qualified biologist. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least once per week and a report submitted to the County monthly.
- If construction activities stop for more than ten (10) days then another migratory bird and raptor survey shall be conducted within seven (7) days prior to the continuation of construction activities.
- All staging and construction activity will be limited to designated areas within the BSA and designated routes for construction equipment shall be established in order to limit disturbance to the surrounding area.

The following are recommended exclusion and monitoring activities to avoid and minimize impacts to avian species protected under the MBTA and CFGC that have the potential to nest on the existing Ord Ferry Road bridge.

- The removal of the current Ord Ferry Road bridge should be conducted during the avian non-breeding season (September 1 – January 31) so as to avoid impacts to avian species that may potentially nest on the bridge.

- If the current Ord Ferry Road bridge cannot be removed prior to the avian breeding season (February 1 – August 31) then the following exclusion and monitoring activities shall take place.

  Exclusion

  - All avian nests should be removed from the bridge prior to February 1, if construction will begin after March 1, so as to deter avian species from nesting on the bridge.

  - Any exclusionary devices that are deemed necessary in order to prevent avian species from nesting on the existing bridge should be established by a qualified biologist prior to February 1. Exclusionary devices shall be maintained by the County or a qualified biologist until the current bridge is removed or the end of the avian breeding season.

  Monitoring

  - Weekly, or as necessary, monitoring or additional exclusion activities will be conducted by a qualified biologist on the current Ord Ferry Bridge after February 1 until the current bridge is removed or the end of the avian breeding season (August 31).

Project Impacts

With the implementation of avoidance and minimization measures specified above there will be no direct or indirect impacts to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and CFGC.

Compensatory Mitigation

There will be no compensatory mitigation necessary for project activities in regards to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and CFGC.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Western Red Bat

The western red bat can be found in California from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. The species is typically associated with riparian areas and prefers sites with a mosaic of habitats that includes trees for roosting and open areas for foraging. Western red bats typically roost solitarily in dense tree foliage; however, nursery colonies may include many females and their young. Females become pregnant in spring and give birth within 80-90 days. They forage over a wide assortment of habitat types for a variety of insects, but primarily feed on moths.

There has been an increase in awareness regarding declining bat populations across the United States. Some species of bats are now recognized as SSC in California. Bats have little to no regulatory protection and are largely protected under the CEQA process. The CEQA states that "No projects which would cause significant environmental effects should be approved as proposed if there are feasible alternatives or mitigation measures that would lessen those effects."

According to the CEQA, impacts to biological resources are considered "significant" if, among other things, a proposed project will:

- 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 CDFW or USFWS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- 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.

The destruction or disturbance of a bat maternity roost is considered a significant impact under the CEQA definition of "significant". If significant impacts to a maternity bat roosting colony are found then project alternatives and mitigation measures should be implemented.

Survey Results

There is suitable roosting habitat for western red bats within the riparian habitat present in the BSA.

Mitigation Measure 12 Western Red Bats and Roosting Bat Species

To avoid impacts to western red bats and other tree roosting bat species, the following avoidance and minimization measures are recommended.

- Removal of trees and any trimming of trees within the BSA shall occur outside of the pupping season for western red bats (i.e. when females give birth and raise young). For the purposes of implementation of this measure, the pupping season is considered to be from April 15 through August 15.

Project Impacts

With the implementation of avoidance and minimization measures specified above there will be no direct or indirect impacts to western red bats or other roosting bat species.

Compensatory Mitigation

There will be no compensatory mitigation required for bat species of special concern, including western red bats.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Required: Mitigation Measures 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13.

b), c) Less Than Significant With Mitigation: There are six (6) features that qualify as "other waters" and ten (10) wetland features within the project boundary. Other waters include Little Chico Creek, two unnamed overflow channels, and an irrigation canal. There is approximately 1341 feet (0.72 acres) of other waters within the project boundary. The 10 wetlands features include three seasonal and seven riparian wetlands. There are approximately 4.05 acres of wetland features within the project boundary; however, the USACE has not issued a jurisdictional determination so acreages of jurisdictional Waters of the US under the Clean Water Act (CWA) are approximate until verified by the USACE.

Approximately 0.02 acres of permanent impacts and 0.06 acres of temporary impacts to other waters are anticipated. Approximately 0.05 acres of permanent and 0.29 acres of temporary impacts will occur to wetlands. Impacts to jurisdictional Waters of the U.S. resources will be compensated through the CWA §404 permitting process and mitigation requirements contained within the §404 permit.

Approximately thirty-seven (37) native trees greater than 4" DBH that are part of the riparian vegetation will be removed as a result of the proposed project. Mitigation Measure 4, which includes a requirement to replace riparian vegetation removed by project activities at a 3:1 ratio, and Mitigation Measure 13, which requires a §1602 agreement with CDFW that will include requirements to replace the removed trees, will ensure that the loss of native trees are reduced to a less than significant level.

The USACE regulates the discharge of dredged or fill material into waters of the United States under the Clean Water Act. Waters of the US includes a range of wet environments such as lakes, rivers, streams (including intermittent), mudflats, sandflats, wetlands (including vernal pools and swales), sloughs and wet meadows. The proposed project would be required to obtain approval from the USACE per §404 of the Clean Water Act. Project approval from the USACE is indicative of adherence to that agency's "no net loss" policy for Waters of the US.

The Clean Water Act (§401) mandates acquisition of water quality certification and authorization for placement of dredged or fill material in Waters of the United States. In accordance with §401, criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The project would be required to obtain §401 water quality certification from the Central Valley Regional Water Quality Control Board (RWQCB) as a condition of §404 permit acquisition.

Pursuant to §1602 of the CA Fish and Game Code, the project must comply with the Streambed Alteration Agreement requirements established by the CDFW. The performance standards of the CDFW's Streambed Alteration Agreement program ensure less than significant potential riparian impacts relative to the CA Fish and Game Code. In addition, as described in this study, the performance standards of the USACE ensure the retention of native vegetation to the maximum extent and adequate mitigation for any unavoidable impacts to riparian vegetation.

The proposed project could affect Waters of the US, Waters of the State and riparian habitat within the project site. Therefore, the following mitigation measure shall be implemented:

Mitigation Measure 13 Wetlands and §404, §401, and §1602 Compliance

All jurisdictional waters that may be impacted by the project shall be avoided during construction activities to the greatest extent practicable. To ensure the adequate mitigation of all unavoidable impacts, the following shall be required:

1. The proponent shall enter into consultation with the USACE. If necessary, a §404 permit will be obtained before any filling, dredging or modification of jurisdictional waters can

occur. The permit will be conditional and will contain minimization and mitigation measures developed through consultation with the USACE.

2. The proponent shall enter into consultation with the RWQCB. If necessary, a §401 permit will be obtained before any discharges of dredged or fill material to Waters of the United States occur including wetlands and other water bodies.

3. Per §1602 of the California Fish and Game Code, the applicant shall enter into consultation with the CDFW. If necessary, a Streambed Alteration Agreement (SAA) will be obtained before in-stream construction activities commence. If required, the agreement would contain site-specific minimization and mitigation measures identified through consultation with the CDFW.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USACE, CVRWQCB, and CDFW are the regulatory enforcement agencies.

Mitigation Required: Mitigation Measure 4 and 13

d) Less Than Significant With Mitigation. As described in sections 4a)-b) There will be no modifications to Little Chico Creek that will impede salmonid movement or adversely affect overall holding and spawning habitat. CV spring-run Chinook, CV steelhead, and CV fall and late-full Chinook do not spawn in the project site; therefore construction activities will not affect spawning salmon and steelhead or spawning habitat. Other species of animals with known or potential to occur in the project site may use the site for local migration or nursery sites, however they have the ability to disperse from the area during construction activities and/or be screen for absence during preconstruction surveys. Upon completion, there will be no new barriers to native residents or migratory wildlife species. Implementation of Mitigation Measure 6, 7, 9, 10 and 11 will ensure a less than significant impact with mitigation.

Mitigation Required: Mitigation Measure 6, 7, 9, 10 and 11.

e) Less Than Significant The project would not conflict with any Butte County tree policy or ordinance adopted for the long-term preservation of oak woodlands, including the Butte County Oak Woodlands Management Plan.

Mitigation Required: None

f) No Impact: The project site is within the area covered by the proposed Butte County Regional Conservation Plan (BRCP); however, the BRCP has yet to be formally adopted. Under the BRCP, covered activities in the Plan Area will be carried out in compliance with the NCCPA, the California Endangered Species Act (CESA), and ESA. The BRCP also supports permitting under the Clean Water Act (CWA) section 404 for placement of dredged or fill material into Waters of the United States, including wetlands, and authorization under California Fish and Game Code section 1602 for alteration of the beds and banks of streams and lakes. All of the compliance, permitting and authorizations proposed and sought for in this proposed project are addressed by the existing regulations and regulatory agencies which are consistent with the proposed BRCP.

Mitigation Required: None

g) **Less Than Significant With Mitigation.** Little Chico Creek is designated as critical habitat for CV steelhead by NMFS. Central Valley steelhead use Little Chico Creek within the project site for migration and emigration. Approximately 5 CY of concrete will be removed from the OHWM from the existing bridge supports. The new bridge structure will reduce the number of piles in aquatic environments through the use of longer bridge span segments. A clear water diversion using appropriately sized culverts and clean river gravel will be installed in Little Chico Creek as part of the temporary road. The temporary road including all culverts will be removed on or before October 31st of each construction season. Clean gravel used to construct the stream diversion will remain providing a benefit to aquatic organisms. Regardless, project activities have the potential to impact Central Valley steelhead critical habitat. Implementation of Mitigation Measure 4 will provide avoidance, minimization and mitigation measures that will ensure a less than significant impact with mitigation.

Mitigation Required: Mitigation Measure 4

h) **Less Than Significant With Mitigation.** During construction activities there may be a temporary reduction in the numbers or diversity of wildlife species due to dispersion, as a result of general noise and vibrations. Implementation of Mitigation Measures 4, 5, 6, 7, 8, 9, 10, 11 and 12 will provide avoidance, minimization and compensatory mitigation for potentially impacted species, therefore there is a less than significant impact with mitigation.

Mitigation Required: Mitigation Measure 4, 5, 6, 7, 8, 9, 10, 11 and 12

i) **Less Than Significant With Mitigation.** See discussion under section 4 a) -h). The incorporation of Mitigation Measures 4, 5, 6, 7, 9, 10, 11 and 12 will provide avoidance, minimization, restoration and mitigation measures to ensure that there are less than significant impacts with mitigation.

Mitigation Required: Mitigation Measures 4, 5, 6, 7, 9, 10, 11 and 12

j) **Less Than Significant With Mitigation.** See discussion under section 4 d). The incorporation of Mitigation Measures 5, 6, and 7 will provide avoidance, minimization, restoration and mitigation measures to ensure that there are less than significant impacts with mitigation.

Mitigation Required: Mitigation Measures 5, 6 and 7

k) **Less Than Significant.** Construction related activities may include temporary exclusion fencing, lights, noise and human presence that could hinder the normal activities of wildlife, however upon completion there will be no new lighting, fencing, noise or human presence such as dwellings when compared to exiting conditions, therefore there will be a less than significant impact in regards to this topic.

Mitigation Required: None

4.5 CULTURAL RESOURCES

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations, Section 15064.5?			**X**	
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CA Code of Regulations, §15064.5?			**X**	
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			**X**	
d) Disturb any human remains, including those interred outside of formal cemeteries?		**X**		

Setting

In prehistoric times, Little Chico Creek, which flows north-south through the present APE, was a significant surface water source that made possible relatively intensive occupation during all prehistoric phases as well as the early historic time period. A number of ecotones and microenvironments are represented along this Creek, which prior to modern development created a complex mosaic of vegetation and dependent fauna. An oak/grassland community once dominated the area, with native flora along Chico Creek and its overflow channels (Genesis, 2017).

The rich and complex vegetation and resident land fauna, avian, and aquatic species provided substantial dietary and other economic resources important to the Native American economy.

Based on previous cultural resources studies undertaken within the general vicinity of the APE, coupled with the absence of prehistoric cultural materials being documented within these previous investigation areas, the APE appeared to be situated within lands of low to moderate archaeological sensitivity with respect to prehistoric sites. The APE appeared to represent moderate sensitivity with respect to historic-period sites. While historic-period sites had been identified in the general area, the postulate of moderate sensitivity was based on the considerable disturbance to both the surface and subsurface setting, resulting from decades of historic agricultural, contemporary road construction, and contemporary placement of buried and overhead utilities.

Genesis Society prepared an Archaeological Survey Report (ASR) and Historic Properties Survey Report (HPSR) in October 2017 for the proposed project (Attachment F). In support of the ASR, Genesis Society staff conducted an archival record search, consultations and an archaeological field survey in order to identify the cultural resources occurring, or potentially occurring, in the project area. The record search included a review of the data housed at the Northeast Information Center (NEIC) at CSU, Chico and a Sacred Lands search with the Native American Heritage Commission (NAHC). The consultation involved potentially interested local Native American groups, as identified by the NAHC. As identified in the ASR, the record search, consultations and field survey produced the following results:

<u>Record Search</u> Prior to conducting the pedestrian field survey, the official Butte County archaeological records maintained by the Northeast California Information Center were examined for any existing recorded prehistoric or historic sites (I.C. File # W17-45, dated March30, 2017). The records search area was established at 1/4-mile radius of the project site. According to the records maintained by the NEIC, no archaeological surveys of the project site have been conducted within the APE. Archaeological surveys have been conducted within 1/4-mile radius of the project site. In total, three (3) investigations have been conducted within the 1/4-mile radius search area.

No prehistoric or historic-era sites have been recorded or otherwise identified within the project site boundary on records maintained at the NEIC. Additionally, no prehistoric sites, traditional use areas or other cultural issues of concern have been identified by the Native American groups and individuals contacted. The Native American Heritage Commission (NAHC) has no record of Sacred Land listings within, adjacent or close to the project area. The data file and determinations of effect for the Office of Historic Preservation also failed to document resources in the project. Lastly, the California Inventory and Historic and General Land Office (GLO) maps failed to identify potential historic resources within the APE.

Consultation with Interested Parties: The NAHC identified no sacred lands within the project area (response date April 3, 2017). The NAHC provided contact information for local Native American parties that may have an interest in the project site for additional consultation. Follow-up telephone calls were made to all of the parties and in all cases voicemails were reached, detailed messages concerning the project description and findings was provided, along with contact information for both Caltrans and Genesis Society. Although no responses were received, consultation will continue for the life of the project.

Field Survey: The field survey, conducted per CEQA and NHPA standards, identified no potentially significant cultural resources (prehistoric or historic) within the project site. No archaeological resources were identified within or immediately adjacent to the project site.

Discussion

a), b), c) Less Than Significant: As identified in the Archaeological Survey Report, there are no known significant cultural resources within the project site. Furthermore, no evidence of prehistoric, archaeological, paleontological or proto-historic resources has been identified within or immediately adjacent to the project site. These findings are based on a records search, consultation with interested parties and a field survey, conducted by a professional archaeologist.

While unlikely, there is the chance that currently unidentified remains could be uncovered during excavation. Per Health and Safety Code §7050.5, all work must cease and the County Coroner must be notified when previously unidentified human remains are discovered. No further disturbances may occur until the Coroner has made findings as to the origins and disposition per Public Resource Code §5097.98. Adherence to the applicable local, state and federal regulations ensures less than significant potential impacts to newly discovered human remains.

Mitigation Required: None

d) Less Than Significant With Mitigation: The proposed project would not generate potentially significant impacts to any known cultural resources. However, there is the potential for unknown/undocumented cultural resources, including human remains, to be uncovered during work activities. Pursuant to Health and Safety Code (§7050.5), the Coroner must be contacted if human remains are uncovered during construction activities. Previously unidentified human remains are subject to regulations set forth at the state and federal levels, including the CA Public Resources Code and the Native American Graves Protection and Repatriation Act (NAGPRA).

As the project site may contain currently unidentified cultural resources, the proposed project may result in disturbances to cultural resources. Therefore, the following mitigation shall be implemented:

Mitigation Measure 14 Newly Discovered Cultural Resources

A note with the following statement (or its functional equivalent) shall be included on the final construction plans:

> "The supervising contractor will stop all work within 100-feet of any newly discovered cultural resources (i.e. unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains) and report any such findings to the Public Works Department, which shall retain a professional archaeologist who shall determine the significance of the newly discovered resource(s) and, if necessary, develop appropriate mitigation."

All mitigation measures determined by the Public Works Department to be appropriate for the project shall be implemented pursuant to the terms of the archaeologist's report.

Timing & Implementation: Prior to final plan approval and during construction

Enforcement & Monitoring: Department of Public Works and supervising contractor

Mitigation Required: Mitigation Measure 14

4.6 GEOLOGY AND SOILS

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				**X**
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?				**X**
ii.) Strong seismic ground shaking?				**X**
iii.) Seismic-related ground failure/liquefaction?				**X**
iv.) Landslides?				**X**

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
b) Substantial soil erosion or the loss of topsoil?				**X**
c) Located on a geologic unit or soil that is unstable, or would become unstable as a result of the project, and potentially result in landslide, lateral spreading, subsidence, liquefaction or collapse?				**X**
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?				**X**
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?				**X**

Setting

The Butte County General Plan 2030 identifies the project area as being in a region of "low to none" landslide potential, low to none erosion potential, and moderate to high expansive soil potential. The risks to people and property from subsidence are not mapped and there have been no occurrences of this phenomenon in Butte County to date. The nearest mapped active fault (Cleveland Hills Fault) is approximately 25 miles to the east. There is an unnamed fault in proximity to the project site; however, it has been classified as inactive.

Since the project would not result in land use changes, the distribution of people in the project area would not be altered as a result of the proposed project activities. The proposed project would replace and existing bridge in a rural part of the County. The project would not construct dwellings or occupied facilities, and would not result in altered wastewater treatment or disposal systems.

Discussion

a) – e) No Impact: There would be no impacts related to these environmental factors since the project will rehabilitate and existing roadway and associated drainage infrastructure.

Mitigation Required: None

4.7 GREENHOUSE GAS EMISSIONS

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

Setting

The earth's atmosphere naturally contains a number of gases, including (but not limited to) carbon dioxide ($CO2$), methane (CH.), and nitrous oxide ($N2O$), which are collectively referred to as greenhouse gases (GHGs). GHG emissions are generally numerically depicted (when applicable) as carbon dioxide equivalents (C02e). CO2e represents CO2 plus the additional warming potential from CH4 and N2O. The common unit of measurement for carbon dioxide equivalents is in metric tons (MTCO2e).

These gases trap some amount of solar radiation and the earth's own radiation, preventing it from passing through earth's atmosphere and into space. GHG are vital to life on earth; without them, earth would be an icy planet. For example, CO2 is a molecule that is essential to the cycle of life. In general, CH4 and N2O have 21 and 310 times the warming potential of CO2, respectively. Human- made emissions of GHG occur through the combustion of fuels, as well as a variety of other sources.

Increasing GHG concentrations are warming the planet. As the average temperature of the earth increase, weather may be affected, including changes in precipitation patterns, accumulation of snow pack, and intensity and duration of spring snowmelt. Climate zones may change, affecting the ecology and biological resources of a region. There may also be changes in fire hazards due to the changes in precipitation and climate zones.

While scientists have established a connection between increasing GHG concentrations and increasing average temperatures, important scientific questions remain about how much warming would occur, how fast it would occur, and how the warming would affect the rest of the climate system. At this point, scientific efforts are unable to quantify the degree to which human activity impacts climate change. The phenomenon is worldwide, yet it is expected that there would be substantial regional and local variability in climate changes. It is not possible with today's science to determine the effects of global climate change in a specific locale, or whether the effect of one aspect of climate change may be counteracted by another aspect of climate change, or exacerbated by it.

A 2006 baseline GHG emission inventory was prepared for unincorporated Butte County. The inventory identified the sources and the amount of GHG emissions produced in the county. Within Butte County, the leading contributors of GHG emissions are agriculture (43%), transportation (29%), and residential energy (17%).

A Climate Action Plan (CAP) was adopted by Butte County on February 25, 2014. The CAP provides a framework for the County to reduce GHG emissions while simplifying the review process for new development. Measures and actions identified in the CAP lay the groundwork to achieve the adopted.

The General Plan includes goals related to climate change, including reducing GHG emissions to 1990 levels by 2020. In an effort to implement the measures of the CAP, a development checklist was created to evaluate a new projects consistency with the CAP, and to identify which GHG emission reduction measures would be implemented with project approval.

Section 15064.4 of the CEQA Guidelines sets forth guidance for determining the significance of impacts from Greenhouse Gas Emissions. The guidelines allow impacts from a particular project to be described quantitatively or qualitatively and direct that impacts should be evaluated in consideration of existing environmental setting, applicable thresholds of significance, and compliance with regulations and requirements adopted to implement the mitigation of greenhouse gas emissions.

Section 15064 (h)(3) of the CEQA Guidelines specifies that a project's contribution to a cumulative effect may be found 'not cumulatively considerable' if the project will comply with the requirements in a previously approved plan or mitigation program, including plans or regulations for the reduction of greenhouse gas emissions. Butte County has adopted a Climate Action Plan (CAP) for the reduction of greenhouse gases. The CAP provides measures that achieve a 15% reduction below 2006 emissions levels by 2020. Since the project does not require General Plan or Specific Plan amendments, GHG emissions from the project may be consistent with the CAP by demonstrating consistency with the CAP policies in the CAP checklist. The project may be able to rely on the CAP's environmental findings for the purposes of GHG emissions and climate change, rather than identifying separate project-level emissions.

Projects that wish to demonstrate consistency with the CAP must demonstrate consistency with all applicable measures and action items from the CAP. For the subject project, consistency with the CAP would not require special provisions because it is not anticipated to result in housing units, non-residential development, or other greenhouse gas producing activities. Since the proposed project is the replacement of an existing bridge, the proposed action would not result in land use changes within the action area. The exhaust from construction activities would be the single source of greenhouse gasses generated by the proposed project over pre-project conditions. As identified in the Air Quality section of this study, the proposed project would be required to implement all applicable Standard Mitigation Measures for construction exhaust.

Discussion

a) Less Than Significant With Mitigation: This project consists of replacing the existing facility in kind, and will not increase travel lanes or change long-term traffic. Therefore, no increase in operational GHG emissions is anticipated to occur with the project. Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

The proposed construction activities would result in temporary exhaust emissions within the project site. However, as identified in the Air Quality section of this study, construction activities would be subject to the applicable BMPs and Standard Mitigation Measures of the County Code and the BCAQMD (summarized in Mitigation Measures 2 and 3). Therefore, exhaust emissions would be minimized and equipment efficiency would be maximized during project construction. The nature of the proposed project precludes potential long-term emissions increases. The proposed project would not conflict with any identified plans adopted for the reduction of greenhouse gas emissions. Furthermore, the proposed project would be consistent with the Caltrans Climate Action Program, which calls for emissions reductions through increased efficiency of the state’s transportation systems, the Butte County Association of Governments’ Metropolitan Transportation Plan and Sustainable Communities Strategy and Butte County’s Climate Action Plan. Therefore, relative to greenhouse gas emissions, the proposed project would result in less than significant impact with mitigation.

Mitigation Required: Mitigation Measures 2 and 3

b), No Impact. The proposed project will not conflict with any applicable plan, policy, or regulation adopted to reduce GHG emissions, including the Butte County CAP or the relevant climate change policies of the Butte County 2030 General Plan. The project will have no impact with respect to this issue.

Mitigation Required: None

4.8 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			**X**	
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?			**X**	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				**X**
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?				**X**
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?				**X**
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?				**X**
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			**X**	
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?			**X**	

Setting

The project site is not located in proximity, within, or adjacent to any superfund sites. The project site is not located within any airport land use plans. The Chico Municipal Airport, the public airport nearest to the project site, is approximately 12 miles northeast of the project site. There are several private airstrips within 4 and 5 miles from the project site. The proposed project will involve the routine transport of standard materials for the reconstruction of asphalt and road base.

Discussion

a), b), g), h) Less Than Significant: There would be no increased likelihood of the "routine" transport of toxic materials or substances once the project is completed. The proposed project would not be a facility that generates or emits hazardous materials.

The proposed project involves the rehabilitation of an existing roadway and associated drainage infrastructure; therefore, the project activities would not result in new land uses when compared to existing conditions. The project would not construct dwellings, occupied structures or land uses that could generate or emit hazardous materials. Likewise, the proposed project would not result in concentrations of people that would be considered spatially discrete from pre-project conditions. As such, the spatial relationships between the area's human population and potential hazards would not be impacted or influenced by the proposed project.

There would be no significant increase in wildfire hazards as a result of implementation of the proposed project.

Construction activities associated with the project would include refueling and minor onsite maintenance of construction equipment, which could lead to minor fuel and oil spills. The release of hazardous materials into the environment is regulated through existing federal, state and county laws. These regulations require emergency response from local agencies to contain hazardous materials. The Butte County Interagency Hazardous Materials Team responds to hazardous materials emergencies in the project area. The use and handling of hazardous materials during construction activities would occur in accordance with applicable federal, state, and local laws including California Occupational Health and Safety Administration (CalOSHA) requirements.

The proposed project will not block or restrict a designated evacuation route or access to an emergency facility. Once completed, the project would provide improved roadway surfaces, safer passage for the public and an improvement in overall safety. The County Code and CBC address emergency vehicle access to, and passage through, construction sites. Potential emergency response impacts during construction activities would not be significant as a temporary bypass will be available through the project site. The proposed project would result in less than significant potential impacts related to emergency response.

The proposed project does not include the construction of dwelling units or occupied structures. There would not be an increase in human populations, either transient or resident, within the project site upon project completion. In contrast, the proposed roadway improvements would be expected to improve access for emergency response vehicles.

Mitigation Required: None

c) - f) No Impact: Three schools in Durham (Durham Elementary, Intermediate and High School) are approximately 6.5 miles east of the project site. Since the proposed project involves the replacement of an existing bridge, the activities are not expected to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste that would affect the school population.

The project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese List).

The project is not located near a public airport or public use airport or within any airport land-use plans. Likewise, the project site is not located near a private airstrip.

Relative to these potential hazards, the proposed project would result in no impact.

Mitigation Required: None

4.9 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Violate any water quality standards or waste discharge requirements?		**X**		
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)?		**X**		
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?		**X**		
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?		**X**		
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?		**X**		
f) Otherwise degrade water quality?		**X**		
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?				**X**
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?		**X**		
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?				**X**
j) Result in inundation by seiche, tsunami, or mudflow?				**X**

Setting

The project site is within the Sacramento River Hydrologic Basin, the Colusa Basin Hydrologic Unit and the Butte Basin Hydrologic Area. The project site is situated in the floodplain of Little

Chico Creek. Little Chico Creek, in the area of the project site, is listed as a regulated stream per the CCR Title 23 §112.

The project site is located on Flood Insurance Rate Map (FIRM) 06007C0495E. The project area is located in a Zone “A” (no base flood evaluations determined/ 1% Annual Chance Flood Hazard).

Water Quality

The grading plan is required as a standard condition of the proposed project and will identify BMPs to be applied to grading and clearing activities, which will consist of stabilizing the site for water quality protection and erosion control. A site-specific Erosion and Sediment Control Plan (ECP) will be included as part of the proposed grading plan, and Best Management Practices (BMPs) from Caltrans will be implemented. The purpose of the Erosion and Sediment Control Plan is to avoid water quality impacts off-site as the result of a storm event.

Discussion

a) – c), e), f) Less Than Significant With Mitigation: As identified in §4.4 of this document (Biological Resources), the project will be required to implement Mitigation Measure 13, which would ensure certification from the RWQCB per §401 of the Clean Water Act prior to construction activities. Additionally, the project would be required to implement all applicable storm water pollution and erosion control BMPs as a condition of RWQCB approval. The following table identifies commonly implemented Stormwater Pollution Prevention BMPs:

Table 5: Stormwater Pollution Prevention Best Management Practices

Erosion Control		
- Scheduling	- Wood Mulching	- Velocity Dissipation Devices
- Preservation of Vegetation	- Earth Dikes/Drainage	- Slope Drains
- Hydraulic Mulch	- Soil Binders	- Streambank Stabilization
- Hydroseeding	- Straw Mulch	- Swales
Sediment Control		
- Silt Fence	- Street Sweeping/Vacuuming	- Straw Bale Barrier
- Sediment Basin	- Sandbag Barrier	- Drain Inlet Protection
- Sediment Trap	- Fiber Rolls	- Chemical Treatment
Tracking Control		
- Stabilized Site Entrance/Exit		
Non-Stormwater Management		
- Dewatering Operations	- Vehicle/Equip. Maintenance	- Concrete Curing
- Paving/Grinding Operations	- Pile Driving Operations	- Concrete Finishing
- Temporary Stream Crossing	- Material/Equipment Use	- Temporary Batch Plants
- Illicit Connection/Discharge	- Vehicle/Equipment Cleaning	- Clear Water Diversion
- Potable Water/Irrigation	- Water Conservation Practices	- Vehicle/Equip. Fueling
Waste and Materials Management		
- Material Delivery	- Hazardous Waste Management	- Concrete Waste Management
- Material Use/Storage	- Contaminated Soil Management	- Liquid Waste Management
- Stockpile Management	- Solid Waste Management	
- Spill Prevention	- Sanitary Waste Management	

The proposed project would not be subject to waste discharge requirements. As described in the Biological Resources Section of this document (§4.4), the project will be required to adhere to the requirements of §404 and §401 of the Clean Water Act and §1602 of the CA Fish and Game Code. A §401 permit is contingent on sufficient evidence that a project would not pose a threat to water quality or quantity leaving the proposed project's site.

Additionally, CBC compliance is a condition of approval set forth in the County Code. Therefore, adherence to the building and grading standards of the County Code is indicative of adherence to the standards of the CBC. Adherence to these permitting requirements and building/grading standards would include incorporation of appropriate, site-specific BMPs.

As the proposed project involves the reconstruction of a bridge, it would not require connection to any existing or new water facilities. The project would not result in the construction of new dwellings or structures, water extraction facilities or a substantial increase in impervious surfaces.

The proposed project would include basic roadway improvements such as minor shoulder and driveway paving. The increased impermeable surface resulting from the additional paved areas could cause a negligible increase in the peak flows leaving the project site. This increase is not substantial when compared to the size of the total watershed. Furthermore, the improvements are proposed in the area of an existing roadway, shoulders and a bridge and when completed would re-establish the roadway drainage system to a functional state.

Metals, oils, greases, and other contaminants from construction activities may run off-site into surface waters. To limit any sediments and pollutants from impacting drainages in the area, project-specific BMPs pursuant to CBC, Butte County and RWQCB standards and specifications will be implemented.

Long-term soil stability and erosion control will be obtained through mechanical and/or re-vegetation methods.

Construction activities will be performed in accordance with Appendix 33 (Excavation and Grading) of the CBC, as required by Chapter 26 of the County Code, to ensure that development incorporates appropriate design provisions to protect waterways and reduce erosion. In addition, the required Pollution Control Plan would further ensure the avoidance of potential drainage impacts during construction activities.

Pursuant to Chapter 13 of the County Code (Grading and Mining), all projects that propose earth moving activities, which would significantly alter drainage patterns, are required to obtain a grading permit and/or submit a grading and drainage plan. Furthermore, Mitigation Measure 2 and Mitigation Measure 3 would ensure the applicable dust control, and water quality practices are implemented. These mitigation measures would ensure compliance with applicable fugitive dust and sediment transport control measures and adherence to the performance standards of the Clean Water Act §401.

Flood Insurance Rate Maps (06007C0495E) indicate the project area is located in a Zone “A”. No occupied structures or dwellings are proposed as part of the project. The proposed project would not expose people or structures to a significant risk of loss of property, injury or death from flooding, including levee or dam failures.

Relative to these hydrology and water quality factors, the proposed project would generate potential impacts considered less than significant.

Mitigation Required: Mitigation Measures 2, 3 and 13

d) and h) Less Than Significant With Mitigation. The project site is situated in the floodplain of Little Chico Creek. Little Chico Creek, in the area of the project site is listed as a regulated stream per the CCR Title 23 §112. While the proposed project is not expected to substantially alter the existing drainage pattern of the site that would result in flooding on or off-site, the proposed project is located within the jurisdiction of the Central Valley Flood Protection Board and will require application and approval of an encroachment permit.

Mitigation Measure 15 CVFPB Encroachment Permit Compliance

To ensure the compliance with the requirements of the CVFPB, Water Code §8710 and CCR Title 23, the following shall be required:

1. The proponent shall enter into consultation with the CVFPB. If necessary, an encroachment permit will be obtained before any modification to the floodplain, levees or areas within 300 feet of the regulated stream are conducted The permit will be conditional and will contain minimization and mitigation measures developed through consultation with the CVFPB.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. CVFPB is the regulatory enforcement agencies.

Mitigation Required: Mitigation Measure 15

g), i) and j) No Impact: The proposed project would not result in significant increases in the surface area of impervious materials within the project area. Furthermore, there would be no increase in groundwater extraction due to the proposed project.

According to the Safety Element of the Butte County General Plan, the project site is not within an identified dam inundation area. As part of the Butte County Multi-Jurisdictional All Hazard pre-Disaster Mitigation Plan (MHMP), Butte County has prepared a Dam Failure Mitigation Action Plan. The Action Plan contains a description of dam failure hazards, a risk assessment, plans and programs to address the hazards, and mitigation goals and strategies for each jurisdiction in Butte County.

The physical characteristics of the project site preclude significant risks associated with seiche, tsunami and mudflow hazards.

Flood Insurance Rate Maps (06007C0495E) indicate the project area is located in a Zone "A". No occupied structures or dwellings are proposed as part of the project. The proposed project would not expose people or structures to a significant risk of loss of property, injury or death from flooding, including levee or dam failures. The proposed project would not place any housing within a 100- year floodplain.

Therefore, relative to these hydrology and water quality factors, there would be no impact.

Mitigation Required: None

4.10 LAND USE AND PLANNING

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
a) Physically divide an established community?				**X**
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?				**X**
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				**X**

Setting

The project site corresponds with the Ord Ferry Road alignment in an area of County jurisdiction. The project is surrounded by farming, agriculture, minimally developed private land and Little Chico Creek. The proposed project would address deficiencies of the existing bridge. As such, the spatial distribution of transportation infrastructure within the project area would not be significantly altered by the proposed project.

Discussion

a) - c) No Impact: The proposed project would not physically divide an established community. Indeed, it is likely to improve the safety conditions within the project area, through the replacement of the bridge, shoulders, and improved pavement conditions.

Due to the scope and nature of the proposed project, it would not conflict with an applicable land use plan, policy, or regulation of any agencies with jurisdiction adopted for the purpose of avoiding or mitigating an environmental effect. The proposed project is consistent with the

County General Plan and County Code, with regard to avoiding, minimizing or mitigating potential environmental impacts. The proposed project would not conflict with any adopted habitat conservation or natural community conservation plans. Relative to these land use and planning factors, the proposed project would result in no impact.

Mitigation Required: None

4.11 MINERAL RESOURCES

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	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?				**X**
b) Result in the loss of availability of a locally-important mineral resource recovery site on a local general plan, specific plan or other land use plan?				**X**

Setting

The project site is comprised of an existing roadway and bridge alignment. The proposed project would not construct new alignments or extend roadways into an area devoid of such infrastructure. Rather, the proposed project would consist of the replacement and rehabilitation of an existing bridge and associated roadway improvements.

Discussion

a) - b) No Impact: The California Geological Survey's (Department of Conservation) map "Fifty-Year Aggregate Demand Compared to Permitted Aggregate Resources" (2006) does not identify extraction facilities near the project site. The General Plan of Butte County does not identify any important mineral resource sites in the project area. Relative to mineral resources, there would be no impact.

Mitigation Required: None

4.12 NOISE

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**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?			**X**	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			**X**	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			**X**	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			**X**	
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?				**X**
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?				**X**

Setting

The project is surrounded by rural agricultural, minimally developed private land and Little Chico Creek. The ambient noise in the project area is generated primarily by vehicles traveling on Ord Ferry Road.

The magnitude of sound, whether wanted or unwanted, is usually described by sound pressure (a dynamic variation in atmospheric pressure). The human auditory system is sensitive to fluctuations in air pressure above and below the barometric static pressure. These fluctuations are defined as sound when the human ear is able to detect pressure changes within the audible frequency range.

To better accommodate and assess the time varying noise levels typically associated with traffic patterns, a time-averaged, single-number descriptor known as the “Level equivalent” (Leq) is frequently employed. The Leq, expressed in decibels (dB), represents the average energy content of sounds over a specified time. The A weighting filter (dBA) is commonly used to create a scale more compatible with human perceptions of sound. It includes both steady background sounds and transient, short-term sounds. It represents the level of a steady sound which, when averaged over the sampling period, is equivalent in energy to the time-varying (fluctuating) sound level over the same period.

The following table, which is based on Federal Transit Administration data (1995), summarizes typical noise levels produced by construction equipment commonly used on roadway construction projects. As indicated, equipment involved in construction is expected to generate noise levels ranging from 70 to 90dBA at a distance of 50 feet. Noise produced by construction equipment would be reduced at an average rate of 6dBA per doubling of distance.

Table 6: Maximum Decibels Generated at 50 Feet

Equipment	Maximum dBA	Equipment	Maximum dBA
Scrapers	89 dBA	Backhoes	80 dBA
Bulldozers	85 dBA	Pneumatic tools	85 dBA
Heavy Trucks	88 dBA	Concrete pump	82 dBA

The project site is not within any airport land use plans. The Chico Airport is located over twelve miles northeast of the project site and several private airstrips are within 4 and 5 miles of the project site. Discussions regarding construction noise effects on special status fish species and other biological resources in detailed in Section 4.4 Biological Resources.

Discussion

a) - d) Less Than Significant: During the construction phases of the project, noise from construction activities will intermittently dominate the noise environment in the immediate area. Construction noise is regulated by state and county regulations, which include CBC standards for construction-generated noise attenuation and Caltrans Standard Specifications Section 14-8.02, “Noise Control”. Noise levels generated during construction must comply with applicable local, state, and federal regulations. Adherence to existing noise attenuation standards would ensure construction-generated noise impacts that are less than significant.

The proposed project would not result in new land uses or significant infrastructure extensions. The proposed project would replace the existing bridge, roadway surface, safety features and drainage facilities. Therefore, substantial permanent increases in ambient noise levels in the project vicinity are not expected.

Temporary or periodic noise levels may be increased in the area during project construction. Construction activities would be required to adhere to all applicable noise standards, such as proper equipment maintenance and limiting the hours of noise-generating activities to normal working hours. As described in the setting and biological sections, there will be pile driving in order to establish abutment support for the bridge. The pile driving will occur during daytime hours.

Relative to these noise-related factors, the proposed project would result in less than significant potential impacts.

Mitigation Required: None

e) and f) No Impact: The site is not located in the vicinity of public or private airports. People within the project site would not be exposed to excessive noise levels generated by airports or airstrips, beyond what they already experience. The proposed project would result in no impact.

Mitigation Required: None

4.13 POPULATION AND HOUSING

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	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)?				**X**
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				**X**
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				**X**

Setting

The project proposes to replace an existing bridge and associated roadway surface, safety features and drainage facilities of a roadway in a rural area of the County. The proposed project would not increase development capacity of, or access to, undeveloped lands. Therefore, there would be no permanently displaced housing due to the proposed project. Similarly, there would be no permanently displaced people due to the proposed project.

Discussion

a) - c) No Impact: . There are no new homes, structures, or extensions of roadways associated with the proposed project. The proposed project would not displace any homes. Similarly, it would not displace any people or necessitate the construction of replacement housing. Relative to population and housing, the proposed project would generate no impact.

Mitigation Required: None

4.14 PUBLIC SERVICES

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:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**No Impact**
a) Fire protection?			**X**	
b) Police protection?			**X**	
c) Schools?				**X**
d) Parks?				**X**
e) Other public facilities?				**X**

Setting

The project proposes to replace an existing bridge and associated roadway surface, safety features and drainage facilities of a roadway in a rural area of the County.

The proposed project would not construct dwelling units, buildings, businesses, or other similar facilities that would result in an increased human population in the project area. There would be no long-term demands on fire or police protection services generated by the proposed project. Similarly, there would be no increased demands on school services or parks.

Construction activities, including signage, traffic control and emergency access, will be conducted pursuant to Caltrans, CBC and County standards. For example, Chapter 10 of the County Code (Highways and Streets) identifies emergency vehicle access standards for construction sites.

Access through the project corridor will be maintained during construction activities through the use of a temporary access road on the north side of the bridge. However, these activities would be subject to the applicable standards, such as those standards outlined in the Highway Design Manual, Flagging Instruction Handbook and the Manual of Uniform Traffic Control Devices (MUTCD). Part Six (6) of the MUTCD, which is entitled Temporary Traffic Control, includes requirements for the preparation of a Temporary Traffic Control Plan. Additional measures to ensure access to adjacent properties are included in Section 4.2 Agricultural Resources. Finally, Chapter 10 of the County Code (Highways and Streets) identifies emergency vehicle access standards for construction sites that are a mandatory component of any project of this type.

Discussion

a) - b) Less Than Significant. Delays to roadway traffic will occur during project construction activities. The construction activities that are part of the proposed project will result in temporary road closures during construction and affect traffic patterns near the construction site and potentially affect fire and police response times for multiple apparatus events; however, any such impacts would be minor and not significantly affect long-term service ratios, response times, or other performance objectives for public services. Project proponents would notify local emergency service providers of construction activities and any planned road closures and would ensure coordination with local providers to establish alternative routes and appropriate signage. No changes in fire protection or police protection services are proposed as part of this project. The proposed project would not add to the area's population or increase demands on police or fire services. The effects of the temporary road closure would not cause significant environmental impacts as it relates to police and fire service. Therefore, relative to the provision of police and fire service, the proposed project would generate less than significant impacts.

Mitigation Required: None

c) - e) No Impact. The proposed project would not add to the area's population or increase demands on school or park services. Therefore, relative to the provision of public services, the proposed project would generate no impact.

Mitigation Required: None

4.15 RECREATION

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	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?				**X**
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?				**X**

Setting

The project proposes to replace an existing bridge and associated roadway surface, safety features and drainage facilities of a roadway in a rural area of the County. The proposed project does not include any recreational facilities or create situations where there would be additional demands on recreational facilities.

Discussion

a), b) No Impact: The project does not propose dwelling units, businesses or other structures that might increase the area's human population. The project site does not include existing recreational facilities. Similarly, the proposed project would not construct recreational facilities.

The proposed project would not generate additional demands on parks and recreational facilities. The proposed project does not include the development of recreational facilities or other structures that would necessitate the development or modification of any recreational facilities. Relative to recreation, the proposed project would result in no impact.

Mitigation Required: None

4.16 TRAFFIC AND TRANSPORTATION

Would the project:	**Potentially Significant**	**Less Than Significant with Mitigation**	**Less Than Significant**	**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?			**X**	
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?			**X**	
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?				**X**
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				**X**
e) Result in inadequate emergency access?			**X**	
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				**X**

Setting

The project proposes to replace an existing bridge and associated roadway surface, safety features and drainage facilities of a roadway in a rural area of the county. Therefore, the proposed project is not expected to result in significant changes to the area's existing traffic patterns or volumes.

Air traffic actions are not associated with the proposed project. Furthermore, there are no private airstrips or airports within five miles of the project site. The proposed project would not construct or require parking facilities. Similarly, there are no parking facilities near the project site which could be impacted by the proposed improvements.

Discussion

a), b), e) Less Than Significant: The proposed project would not generate additional traffic as it would not construct facilities – residential, commercial or otherwise – that would generate additional vehicular traffic. The project is not expected to result in additional vehicular trips, impacts to the area's levels of service or affect trip distributions within the project area. Roadway drainage and safety conditions are expected to improve upon project completion.

Emergency vehicles could experience minor delays in the project area during the construction phase. However, emergency vehicle access to, and passage through, the project site would be ensured through adherence to applicable standards. As described in Section 3.13 of this document (Public Services), the project will be required to adhere to pertinent construction site standards, including those of the County Code, Caltrans and the CBC. For example, Chapter 10 of the County Code (Highways and Streets) identifies emergency vehicle access standards for construction sites and Part 6 of the MUTCD (Temporary Traffic Control) includes requirements for the preparation of a Temporary Traffic Control Plan. Thus, temporary traffic control activities during the construction phase of the proposed project would not prevent emergency vehicle movement throughout the area. The proposed improvements, which would bring the existing facilities in the project site up to current design standards, would provide safer passage for emergency vehicles.

Relative to these traffic and transportation factors, the proposed project would generate less than significant potential impacts.

Mitigation Required: None

c), d), f) No Impact: As previously described, the proposed project would be expected to have no effects on air traffic. The proposed project was designed to bring an existing bridge and infrastructure up to current design and safety standards. There would be no increased hazards related to design features or land uses. The proposed project would not require or affect parking capacity. Finally, the proposed improvements would not conflict with any identified alternative transportation plans or policies. Therefore, relative to these traffic and circulation factors, there would be no impact.

Mitigation Required: None

4.17 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant	Less Than Significant with Mitigation	Less Than Significant	No Impact
a) Exceed wastewater treatment requirements of the applicable Water Quality Control Board?				X
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?				X
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?		X		
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves/may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

Setting

The project would not generate wastewater or solid waste products. The project would not generate structures, such as dwellings or businesses, which would create additional demand on potable water supplies.

Discussion

a), b), d) - g) No Impact: The proposed project would not include any uses that would require increased wastewater treatment or solid waste disposal. The proposed project would not generate impacts relative to landfill capacity, wastewater treatment or solid waste generation. Therefore, there would be no impact.

Mitigation Required: None

c) Less Than Significant with Mitigation: The project would not require expansion of stormwater facilities outside the project site. Roadside drainages located in the project area will be temporarily disturbed during construction activities. The applicable permitting and agreement requirements of the USACE, RWQCB and the CDFW are required by state and federal laws and Mitigation Measure 13 of this document. Pursuant to the performance standards of the regulatory agencies, the project would not be permitted to affect the quantity or quality of the storm water leaving the project site. The rehabilitation of onsite drainage is a major component of the proposed project. The proposed culverts, catch basins and outfalls will be replaced and installed in a wide variety of locations along the roadway. As identified in this study, the proposed improvements would be required to obtain all applicable agency approvals, which would be contingent on adherence to all pertinent design standards. For example, the USACE has established a no net loss policy, applicable to both area and function, for Waters of the US. Similarly, approval from the RWQCB is indicative of adherence to state anti-degradation policies and the applicable water quality requirements of the Clean Water Act. Thus, with the adherence to USACE, RWQCB permit conditions identified in Mitigation Measure 13 and the Butte County Grading Ordinance BMPs which are integrated as components of this project, the potential project would result in less than significant potential impacts.

Mitigation Required: Mitigation Measure 13

4.18 TRIBAL CULTURAL RESOURCES

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

a), b) Less Than Significant A Tribal Cultural Resource is a site feature, place, cultural landscape, sacred place or object, which is of cultural value to a Tribe. According to Butte County constraints mapping, the project site is not located in an area considered to have a high archeological sensitivity. Often, cultural resources are found in foothill areas, areas with high bluffs, rock outcroppings, areas overlooking deer migratory corridors, or near bodies of water. The project site is located in the Sacramento Valley and has been extensively disturbed by past intensive agricultural use and transportation infrastructure development.

Per AB 52 Notification Request, Public Resources Code Section 21080.3(b), the County received two letters for notification. One was from the Torres Martinez Cahuilla Indians and the other was from United Auburn Indian Community. The County determined through discussion with the Torres Martinez Cahuilla Indians that they do not identify lands within Butte County. The United Auburn Indian Community provided a map of their area, which did not include the project site area.

Mitigation Required: None

4.19 MANDATORY FINDINGS OF SIGNIFICANCE

Mandatory Findings of Significance	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant	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, 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?		X		
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)?			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Setting

Section 15065 of the CEQA Guidelines identifies the circumstances under which a lead agency must prepare an EIR. The Mandatory Findings of Significance must present the proposed project within the context of §15065. The Mandatory Findings must be rooted in "substantial evidence, in light of the whole record."

Discussion

a) Less Than Significant with Mitigation Temporary construction activities could result in short-term emissions of criteria pollutants. However, Mitigation Measure 2 would reduce fugitive dust emissions to less than significant levels. Furthermore, Mitigation Measure 3 would ensure temporary construction exhaust emissions at levels that are considered less than significant.

Mitigation Measures 8, 9, 10 and 11 would ensure less than significant potential impacts to special-status birds, including migratory birds and raptors. Mitigation Measures 4, 5, 6, and 7 would ensure less than significant potential impacts to aquatic wildlife. Mitigation Measure 13 would ensure less than significant potential impacts to jurisdictional waters and associated vegetation. Furthermore, Mitigation Measures 6, 7, 9, 11 and 12 would ensure less than significant potential impacts to migratory corridors, and wildlife nursery sites.

Construction activities have the potential to disturb undocumented cultural resources and/or human remains. Mitigation Measure 14 would ensure less than significant potential impacts to currently unidentified cultural resources in the project site.

Mitigation Measure 2, as identified in the Air Quality section, would ensure implementation of applicable fugitive dust control measures. Mitigation Measure 13, as identified in the Biological Resources section, would ensure project approval from the USACE and RWQCB per the Clean Water Act and the DFG per the Streambed and Lakebed Alteration Program. Mitigation Measure 11 would require preparation of an approved pollution control plan. In addition, as part of project plans and specifications, the Public Works Department is to prepare final erosion control plans and specifications for post-construction conditions to be implemented by the construction contractor. Thus, the proposed project would result in less than significant potential impacts related to erosion, stormwater pollution or siltation.

The mitigation measures set forth in this study would ensure adherence to §404 of the Clean Water Act, §401 of the Clean Water Act and §1602 of the state Fish and Game Code. The measures would also require an approved pollution control plan to include all applicable storm water pollution and erosion control BMPs prior to issuance of a notice to proceed to the construction contractor. Thus, the proposed project would result in less than significant potential impacts relative to these factors.

Mitigation Measure 2 requires implementation of all applicable BAMM in compliance with Chapter 13 of the County Code and BCAQMD Rules 200 and 205. This measure will ensure less than significant temporary air quality nuisances and fugitive dust emissions during construction activities. Furthermore, Mitigation Measure 3 requires preparation of an approved NOx reduction plan that is to ensure a level reasonable control. Therefore, temporary emissions associated with construction activities would be less than significant.

Mitigation Measures 2 and 11 would ensure the development of an approved pollution control plan and acquisition of water quality certification. Relative to accidental releases during temporary construction activities, the proposed project would result in less than significant potential impacts.

Adherence to applicable Caltrans and California Building Code (CBC) standards and specifications will ensure less than significant impacts related to the potential for strong seismic ground shaking. The proposed project would be required to adhere to CBC and County construction activity standards, which describe appropriate signage and traffic control actions for construction sites. The proposed activities would be required to adhere to the applicable design and safety standards of the CBC. The project proposes to bring the project site to applicable design standards pertaining to bridge design, drainage and safety.

Through implementation of the required mitigation measures and adherence to the standard permitting conditions of the regulatory agencies (§404, §401, §1602, et al.) as identified in this document, the project would result in less than significant potential impacts.

Mitigation Required: Mitigation Measures 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 15

b), c) Less Than Significant The anticipated long-term effects of the proposed improvements are expected to be primarily beneficial in nature. The anticipated benefits include compliance with current design standards, improved drainage and safer vehicular movements within the project site. The project would not contribute to population increase, or an increase in demand for public facilities and services. The proposed improvements, which would not extend facilities into an area where they are currently absent, would not significantly increase roadway capacities. The proposed project would bring the bridge and associated infrastructure up to existing design standards. Therefore, the proposed project would result in less than significant potential cumulative impacts.

Mitigation Required: None

Conclusion

The proposed project would be required to adhere to the relevant standards, regulations and policies of all local, regional, state and federal agencies, as described in this document. Through the standard conditions of approval, adherence to existing design and construction standards and implementation of the mitigation measures identified in this document, the proposed project would generate less than significant potential direct, indirect and cumulative impacts.

5 DETERMINATION

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

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

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

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

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

Signature: Date:

Dennis Schmidt

Director of Public Works

County of Butte

6 PREPARERS, TECHNICAL STUDIES AND REFERENCES

6.1 REPORT PREPARATION

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6.2 REFERENCES:

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APPENDIX A: MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure 1 Preservation of Agricultural Access and Land

The following are recommended avoidance and mitigation measures that shall be implemented prior to the start of construction and continue throughout project activities.

1. The advance notification and coordination with local property owners/growers will be conducted to minimize short-term impacts related to construction activities. Before any work that could interfere with agricultural activities, the work will be coordinated with appropriate property owners/growers.

2. The extent of work within temporary construction easements on private land will be minimized to the extents necessary to provide access and construct infrastructure such as driveways and bridges on private land.

Timing & Implementation: The County shall provide advance notification and coordination with property owners/growers and confirm that soils amendments meet specifications prior to and post construction.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing coordination and inspection.

Mitigation Measure 2 Fugitive Dust Control

To comply with Chapter 13 of the County Code and BCAQMD Rules 200 and 205 (Air Quality Nuisances and Fugitive Dust), the Public Works Department shall require implementation of all applicable fugitive dust mitigation measures in project plans and specifications. As part of this requirement, the contractor shall submit a Pollution Control Plan to the Department of Public Works for approval. The approved plan shall include all applicable dust mitigation measures, including but not limited to the following:

1. Reduce the amount of the disturbed area where possible.
2. Use of water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. An adequate water supply source must be identified. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible.
3. All dirt stockpile areas should be sprayed daily as needed, covered, or a District-approved alternative method will be used.

4. Permanent dust control measures identified in the approved project revegetation and landscape plans should be implemented as soon as possible following completion of any soil disturbing activities.

5. Exposed ground areas that will be reworked at dates greater than one month after initial grading should have soil binders or other appropriate measure to provide temporary dust, wind and soil stabilization benefits

6. All disturbed soil areas not subject to re-vegetation should be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the District.

7. All roadways, driveways, sidewalks, etc. to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

8. Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site.

9. All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with local regulations.

10. Install stabilization aggregate where vehicles enter and exit construction access roads onto streets. Crushed aggregate should be placed at the original grade of the construction access road. Filter fabric should also be applied below the aggregate.

11. Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water should be used where feasible.

12. Post a sign in a prominent location visible to the public with the telephone numbers of the contractor and District for any questions or concerns about dust from the project.

Timing & Implementation: Contractor shall prepare Pollution Control Plan. Public Works shall approve the Plan prior to notice to proceed. Plan shall be implemented during and post construction, as applicable.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections.

Mitigation Measure 3 Exhaust Emissions

To reduce exhaust emissions from construction equipment, the contractor shall implement all applicable measures, including but not limited to, the following:

1. Maintain all construction equipment in proper tune according to manufacturer's specifications;

2. Fuel all off-road and portable diesel powered equipment with ARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);

3. Use diesel construction equipment meeting ARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;

4. Use on-road heavy-duty trucks that meet the ARB's 2007 standard for on-road heavy-duty diesel engines or other current requirements at a minimum, and comply with the State On-Road Regulation;

5. Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standards identified in the above two measures (e.g. captive or NOx exempt area fleets) may be eligible by proving alternative compliance;

6. All on- and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5 minute idling limit; Diesel equipment idling within 1,000 feet of sensitive receptors is prohibited;

7. Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors; In addition, the contractor shall prepare a nitrogen oxide (NOx) reduction plan to be submitted to the Public Works Department for approval.

8. Electrify equipment when feasible;

9. Substitute gasoline-powered in place of diesel-powered equipment, where feasible; and

10. Use alternatively fueled construction equipment on site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane or biodiesel.

    a. Acceptable options may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available.

    b. NOx reduction plan shall include an inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used an aggregate of 40 or more hours during any portion of the construction project. The inventory should include the horsepower rating, engine production year, and projected hours of use or fuel throughput for each piece of equipment.

Timing & Implementation: Contractor shall prepare and Emissions Reduction Plan. Public Works shall approve Plan prior to notice to proceed. The Emissions Reduction Plan shall be implemented during and post construction, as applicable.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections.

Mitigation Measure 4 Central Valley Steelhead Critical Habitat

The following are avoidance and minimization measures recommended in order to avoid and minimize impacts to critical habitat.

- If flowing water is present, a silt screen shall be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen shall be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.
- An erosion control plan that incorporates erosion control BMPs shall be created and implemented prior to the wet season (November 1 – April 1) in order to avoid sediment from entering into WOTUS.
- BMPs shall be implemented that are necessary to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs will include permanent and temporary erosion control measures, including use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, and ultimately seeding and revegetating.
- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.
- All fueling and/or equipment maintenance shall occur 50 feet from all water bodies and riparian areas. Any chemical spill within the active channel of the Little Chico Creek will be reported to NMFS, CDFW and other appropriate resource agencies within 48 hours.
- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) shall be developed and implemented by the contractor. Spill prevention measures will include stockpiling absorbent booms, staging hazardous materials at least 50 feet away from WOTUS, and maintaining and checking construction equipment to prevent fuel and lubrication leaks. SWPPP measures will utilize applicable BMPs such as use of silt fences, straw bales, or other methods necessary to minimize storm water discharge associated with construction activities.

- The contractor should have absorbent booms available within 50 feet of the live channel during all in channel work to be further prepared for quick containment of any spills within or adjacent to Little Chico Creek.

- A NMFS approved fish biologist will perform fish relocation according to a NMFS approved plan.

Compensatory Mitigation

Impacts to CV steelhead critical habitat will be temporary. Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities. Portions of the streambed of Little Chico Creek disturbed by construction activities will be restored to a pre-construction condition. The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Trees will be mitigated for onsite and in-kind at a 3:1 ratio. Specific conditions of the tree replanting will be detailed in the CDFW §1602 Streambed Alteration Agreement which is part of Mitigation Measure 13 below.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Measure 5 Anadromous Fish

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- The temporary access road will need to be installed from May 1st through October 31st in both seasons of construction to complete the project in two construction seasons. Shorter durations for the temporary access road will result in a third season of construction and a second over winter for the construction site.

- If water is present within the BSA between May 1st and October 31st then a clear water diversion using appropriately sized culverts will be installed in Little Chico Creek. The temporary road including culverts will be removed on or before October 31st of each construction season. A qualified biologist shall monitor the construction site during placement and removal of stream diversions to ensure that any harm or loss of salmonids is minimized and documented.

- If water is present and the clear water is installed between May 1st and June 30th when listed salmonids have the potential to be present, then a qualified biologist will perform fish relocation prior to the installation of the clear water diversion.

- The qualified biologist with expertise in the areas of anadromous salmonid biologist, including handling, collecting, and relocating salmonids; salmonid habitat relationships; and biological monitoring shall perform fish relocation. Fish relocation will be performed in a manner which minimizes all potential risks to CV steelhead and CV spring run Chinook.

    - Electrofishing, if used, shall be performed by a qualified biologist and conducted according to the NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act.

- Any pile driving that occurs between May 1st and June 30th will occur on land and at least 10 meters from Little Chico Creek. If flowing water is present, a silt screen shall be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen shall be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.

- An erosion control plan that incorporates erosion control BMPs shall be created and implemented prior to the wet season (November 1 – April 1) in order to avoid sediment from entering into WOTUS.

- BMPs shall be implemented that are necessary to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs will include permanent and temporary erosion control measures, including use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, and ultimately seeding and revegetating.

- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.

- All fueling and/or equipment maintenance shall occur 50 feet from all water bodies and riparian areas. Any chemical spill within the active channel of the Little Chico Creek will be reported to NMFS, CDFW and other appropriate resource agencies within 48 hours.

- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) shall be developed and implemented by the contractor. Spill prevention measures will include stockpiling absorbent booms, staging hazardous materials at least 50 feet away from WOTUS, and maintaining and checking construction equipment to prevent fuel and lubrication leaks. SWPPP measures will utilize applicable BMPs such as use of silt fences, straw bales, or other methods necessary to minimize storm water discharge associated with construction activities.

- The contractor should have absorbent booms available within 50 feet of the live channel during all in channel work to be further prepared for quick containment of any spills within or adjacent to Little Chico Creek.

Compensatory Mitigation

Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities. Portions of the streambed of Little Chico Creek disturbed by construction activities will be restored to a pre-construction condition. The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Trees will be mitigated for onsite and in-kind at a 3:1 ratio.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USFWS is the regulatory enforcement agency.

Mitigation Measure 6 Giant Garter Snake

The following are recommended avoidance and mitigation measures that shall be implemented prior to the start of construction and continue throughout project activities.

A qualified biologist shall conduct a pre-construction survey 24 hours before any vegetation removal or ground disturbance activities are conducted within GGS aquatic and upland habitat. Whenever a lapse in construction activity within GGS habitat of 2 weeks or more has occurred, the area will be re-surveyed.

A qualified biologist shall be onsite to monitor for GGS during all vegetation removal and initial ground disturbing activities within GGS habitat. The biological monitor will assist the contractor in avoiding disturbance to burrows in the upland habitat during the GGS active period. After the initial ground disturbing activities have been completed, the biological monitor will conduct weekly checks of the site to ensure compliance with the conservation measures.

All project related ground disturbances to GGS habitat shall occur in the GGS active season May 1st through October 31st. The GGS active season typically ends on October 1st, however in the event that there is constant activity, including constant ground and noise disturbances, that will preclude snakes from the project area, the GSS active season will extend to October 31st.

Snake exclusion fencing may be installed in areas that may result in inadvertently entrapping snakes and other wildlife, such as trenches, open pits, and dewatered areas. Fence location shall be designated by the qualified biologist. Snake exclusion fencing shall be installed after vegetation removal has occurred in GGS suitable habitat areas so as not to trap any refuging snakes within the project area during vegetation removal. The fence must be maintained throughout the duration of the project and removed upon completion of the project. The exclusion fencing will be inspected regularly by the biological monitor to ensure they are being properly maintained.

All excavated areas more than 1 foot deep that could entrap GGS and would be left open overnight will be covered or, if covering the excavated area is not feasible, then the excavated area will be provided with one or more escape ramps.

Tightly woven fiber netting (mesh size less than 0.25 in), coconut coir matting, or similar material will be used for erosion control purposes. Plastic microfilament or wire mesh in straw waddles or erosion control blankets will not be used. The edge of the erosion control materials will be buried in the ground to prevent GGS from crawling underneath the material.

If a GGS is observed at any time during project activities then construction shall stop within 100 feet of the observation and the qualified biologist and/or resident engineer shall be contacted immediately for further guidance.

If there is incidental take of a GGS during project activities then a qualified biologist and/or resident engineer shall be contacted immediately and the USFWS and CDFW shall be notified within 24 hours and consulted for further guidance.

A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a qualified biologist for all personnel that will be within the project area for more than 30 minutes, prior to the commencement of their responsibilities. The program shall provide workers with information on their responsibilities with regard to avoiding impacts to GGS. An overview of the life history of the GGS, information on take prohibitions, protections afforded these species under the ESA, and an explanation of the relevant terms and conditions.

All vegetation clearing within 200 feet of the banks of suitable GGS aquatic habitat will be limited to the smallest area feasible and equipment movement will be limited to designated haul routes and staging areas. Avoided GGS habitat will be flagged for avoidance.

All temporarily disturbed GGS habitat will be restored to pre-project conditions.

Compensatory Mitigation

The project will permanently and temporarily impact upland GGS habitat. To mitigate permanent and temporary impacts to GGS upland habitat the following is recommended.

- Permanent loss of GGS habitat will be compensated by purchasing creation credits at the Sutter Basin Conservation Bank or at another USFWS/CDFW approved mitigation bank with a service area that accommodates the project location. Credits shall be purchased prior to the start of construction. Table 3 shows the amount of credits that will need to be purchased.

- Temporary disturbance to snake habitat shall be restored to pre-project conditions within one (1) year of completion of construction.
    - Restoration and monitoring shall follow the USFWS Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat (1997). If restoration is unsuccessful, as determined by the USFWS, consultation will be reinitiated

Table 4 shows the amount of credits that will need to be purchased.

Table 5: GGS Mitigation Requirements

Effect	Acres	Mitigation Ratio	Required Action	Acres to be Mitigated
Upland Permanent	0.57	1:1	Purchase Credits at an Approved USFWS/CDFW GGS Mitigation Bank	0.57
Upland Temporary	1.50	N/A	Restore/Monitor	1.5
Aquatic Permanent	0.03	3:1	Purchase Credits at an Approved USFWS/CDFW GGS Mitigation Bank	0.09
Aquatic Temporary	0.17	N/A	Restore/Monitor	0.17
			Total Mitigation Acres	**2.33**

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USFWS and CDFW are the regulatory enforcement agencies.

The aforementioned avoidance and mitigation measures may be modified per the terms of the USFWS Biological Opinion and/or CDFW §2081 Incidental Take Permit once issued.

Mitigation Measure 7 Western Pond Turtle

The following are avoidance and minimization measures recommended in order to avoid and minimize potential impacts to western pond turtle:

- Immediately prior to conducting in-stream work, a qualified biologist shall conduct a survey to determine the presence or absence of western pond turtles. If western pond turtles are observed where they could be potentially impacted by project activities, as determined by the on-site biologist, then work shall not be conducted within 100 feet of the sighting until the turtle(s) have left the project site or a qualified biologist has relocated the turtle(s) immediately outside of the project site.

- If turtle eggs are uncovered during construction activities, then all work shall stop within a 25 feet radius of the nest and the on-site biologist should be notified immediately. The 25-foot buffer should be marked with identifiable markers that do not consist of fencing or materials that my block the migration of young turtles to the water or attract predators to the nest site. No work will be allowed within the 25 foot buffer until the turtle eggs have hatched or the nest fails.

- All portions of the project site that could result in inadvertently trapping turtles, such as open pits, trenches, and de-watered areas will be covered and/or exclusion fencing will be installed to prevent turtles from entering these areas.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to western pond turtle will occur.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Measure 8 Swainson's Hawk

The following recommendations, when implemented, will avoid and minimize impacts to Swainson's hawks:

- If construction is to take place during the nesting season (March 1st – August 31st) then a pre-construction survey for Swainson's hawk will be conducted by a qualified biologist. The survey shall be conducted within seven (7) days prior to the start of construction activities to determine presence or absence of nesting Swainson's hawk.

- If a Swainson's hawk is observed nesting within the project area, or within ¼ mile of the project area, then a ¼ mile to 500-foot radius buffer will be established depending on the nesting pair's level of disturbance around construction equipment. Fencing or other appropriate equipment will be used to indicate the buffer within the County right-of way. Work will not be allowed in the buffer until the young have fledged (able to fly) and are no longer dependent on the nest or the nest fails as determined by a qualified biologist.

- All areas temporarily disturbed by construction activities within the BSA will be revegetated and restored to pre-project conditions.

Compensatory Mitigation

There will be no impacts to nesting Swainson's hawk or Swainson's hawk foraging habitat with the implementation of avoidance and minimization measures. No Compensatory Mitigation is required.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Measure 9 Tri-colored Blackbird

While there were no tri-colored blackbirds observed within the BSA during the site visit, there is suitable habitat present within the BSA which will likely be impacted by construction activities. The following are recommended avoidance and minimization measures for tri-colored blackbird:

- Project activities related to site including grubbing and vegetation removal within the BSA shall be initiated outside of the bird nesting season (February 1 – August 31).

- If project activities that involve vegetation removal cannot be initiated outside of the bird nesting season than the following will occur:
    - A qualified biologist will conduct a pre-construction survey within 7 days of starting vegetation removal.

  - If an active tri-colored blackbird nest (i.e. with egg(s) or young) is observed within 250 feet of the BSA during the pre-construction survey, then a species protection buffer will be established. The species protection buffer will be defined by the qualified biologist in consultation with CDFW. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored once per week and a report submitted to the County weekly.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to tri-colored blackbird will occur.

<u>Timing & Implementation:</u> Prior to and during construction activities.

<u>Enforcement & Monitoring</u>: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Measure 10 Western Yellow-Billed Cuckoo

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- Any vegetation removal and/or ground disturbance activities will take place prior to the western yellow-billed cuckoo nesting season (June 15-August 15).
- Construction activities will remain constant from May 1 throughout the western yellow-billed cuckoo nesting season, thus deterring birds from nesting in or near the project area.
- There shall be no staging or ground disturbance activities outside of the BSA.
- Trees removed greater than 4 inches DBH will be re-planted on site at a 3:1 ratio with like kind trees and the project site will be restored to pre-project conditions.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to western yellow billed cuckoo will occur.

<u>Timing & Implementation:</u> Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USFWS is the regulatory enforcement agency.

Mitigation Measure 11 Migratory Birds

To avoid impacts to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and the CFGC, the following avoidance and minimization measures are recommended.

The following are avoidance and minimization measures for California avian species of special concern and species protected under the MBTA and the CFGC.

- Any vegetation removal and/or ground disturbance activities should take place during the avian non-breeding season (September 1 – January 31).
- If construction is to begin within the avian breeding season (February 1 – August 31) then a migratory bird and raptor survey shall be conducted within the BSA by a qualified biologist. A qualified biologist shall:
    - Conduct a survey for all birds protected by the MBTA and CFGC within seven (7) days prior to construction activities, and map all nests located within 200 feet of construction areas;
    - Develop buffer zones around active nests as recommended by a qualified biologist. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least once per week and a report submitted to the County monthly.
- If construction activities stop for more than ten (10) days then another migratory bird and raptor survey shall be conducted within seven (7) days prior to the continuation of construction activities.
- All staging and construction activity will be limited to designated areas within the BSA and designated routes for construction equipment shall be established in order to limit disturbance to the surrounding area.

The following are recommended exclusion and monitoring activities to avoid and minimize impacts to avian species protected under the MBTA and CFGC that have the potential to nest on the existing Ord Ferry Road Bridge.

- The removal of the current Ord Ferry Road Bridge should be conducted during the avian non-breeding season (September 1 – January 31) so as to avoid impacts to avian species that may potentially nest on the bridge.

- If the current Ord Ferry Road Bridge cannot be removed prior to the avian breeding season (February 1 – August 31) then the following exclusion and monitoring activities shall take place.

  Exclusion

  - All avian nests should be removed from the bridge prior to February 1, if construction will begin after March 1, so as to deter avian species from nesting on the bridge.

  - Any exclusionary devices that are deemed necessary in order to prevent avian species from nesting on the existing bridge should be established by a qualified biologist prior to February 1. Exclusionary devices shall be maintained by the County or a qualified biologist until the current bridge is removed or the end of the avian breeding season.

  Monitoring

  - Weekly, or as necessary, monitoring or additional exclusion activities will be conducted by a qualified biologist on the current Ord Ferry Bridge after February 1 until the current bridge is removed or the end of the avian breeding season (August 31).

Project Impacts

With the implementation of avoidance and minimization measures specified above there will be no direct or indirect impacts to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and CFGC.

Compensatory Mitigation

There will be no compensatory mitigation necessary for project activities in regards to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and CFGC.

<u>Timing & Implementation:</u> Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Measure 12 Western Red Bats and Roosting Bat Species

To avoid impacts to western red bats and other tree roosting bat species, the following avoidance and minimization measures are recommended.

- Removal of trees and any trimming of trees within the BSA shall occur outside of the pupping season for western red bats (i.e. when females give birth and raise young). For the purposes of implementation of this measure, the pupping season is considered to be from April 15 through August 15.

Project Impacts

With the implementation of avoidance and minimization measures specified above there will be no direct or indirect impacts to western red bats or other roosting bat species.

Compensatory Mitigation

There will be no compensatory mitigation required for bat species of special concern, including western red bats.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring.

Mitigation Measure 13 Wetlands and §404, §401, and §1602 Compliance

All jurisdictional waters that may be impacted by the project shall be avoided during construction activities to the greatest extent practicable. To ensure the adequate mitigation of all unavoidable impacts, the following shall be required:

1. The proponent shall enter into consultation with the USACE. If necessary, a §404 permit will be obtained before any filling, dredging or modification of jurisdictional waters can occur. The permit will be conditional and will contain minimization and mitigation measures developed through consultation with the USACE.

2. The proponent shall enter into consultation with the RWQCB. If necessary, a §401 permit will be obtained before any discharges of dredged or fill material to Waters of the United States occur including wetlands and other water bodies.

3. Per §1602 of the California Fish and Game Code, the applicant shall enter into consultation with the CDFW. If necessary, a Streambed Alteration Agreement (SAA) will be obtained before in-stream construction activities commence. If required, the agreement would contain site-specific minimization and mitigation measures identified through consultation with the CDFW.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. USACE, CVRWQCB, and CDFW are the regulatory enforcement agencies.

Mitigation Measure 14 Newly Discovered Cultural Resources

A note with the following statement (or its functional equivalent) shall be included on the final construction plans:

> "The supervising contractor will stop all work within 100-feet of any newly discovered cultural resources (i.e. unusual amounts of shell, animal bone, bottle glass, ceramics, structure/building remains) and report any such findings to the Public Works Department, which shall retain a professional archaeologist who shall determine the significance of the newly discovered resource(s) and, if necessary, develop appropriate mitigation."

All mitigation measures determined by the Public Works Department to be appropriate for the project shall be implemented pursuant to the terms of the archaeologist's report.

Timing & Implementation: Prior to final plan approval and during construction

Enforcement & Monitoring: Department of Public Works and supervising contractor

Mitigation Measure 15 CVFPB Encroachment Permit Compliance

To ensure the compliance with the requirements of the CVFPB, Water Code §8710 and CCR Title 23, the following shall be required:

1. The proponent shall enter into consultation with the CVFPB. If necessary, an encroachment permit will be obtained before any modification to the floodplain, levees or areas within 300 feet of the regulated stream are conducted The permit will be

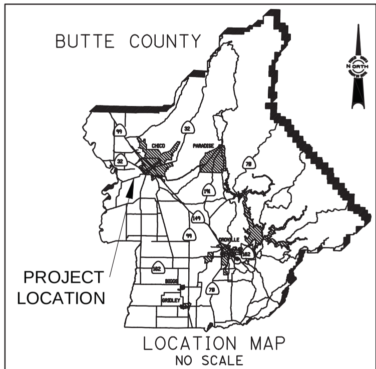
conditional and will contain minimization and mitigation measures developed through consultation with the CVFPB.

Timing & Implementation: Prior to and during construction activities.

Enforcement & Monitoring: Butte County Department of Public Works and contractor through ongoing site inspections and monitoring. CVFPB is the regulatory enforcement agencies.

ATTACHMENT A

PROPOSED BRIDGE DESIGN



INDEX OF SHEETS

1	TITLE SHEET
2	TYPICAL SECTIONS
3	LAYOUT
4	PROFILE
5	CONSTRUCTION DETAILS
6	EROSION CONTROL PLAN
7	CONTOUR GRADING
8	DRAINAGE PLAN AND PROFILE
9	DRAINAGE DETAILS
10	CONSTRUCTION AREA SIGNS
11	STAGE CONSTRUCTION AND TRAFFIC HANDLING (STAGE 1)
12	STAGE CONSTRUCTION AND TRAFFIC HANDLING (STAGE 2)
13	STAGE CONSTRUCTION AND TRAFFIC HANDLING (STAGE 3)
14	LOCAL DETOUR LAYOUT
15	LOCAL DETOUR PROFILE
16	PAVEMENT DELINEATION AND SIGN PLAN
17–18	SUMMARY OF QUANTITIES

STRUCTURE PLANS

BRIDGE No. 12C–XXXX

XX	GENERAL PLAN

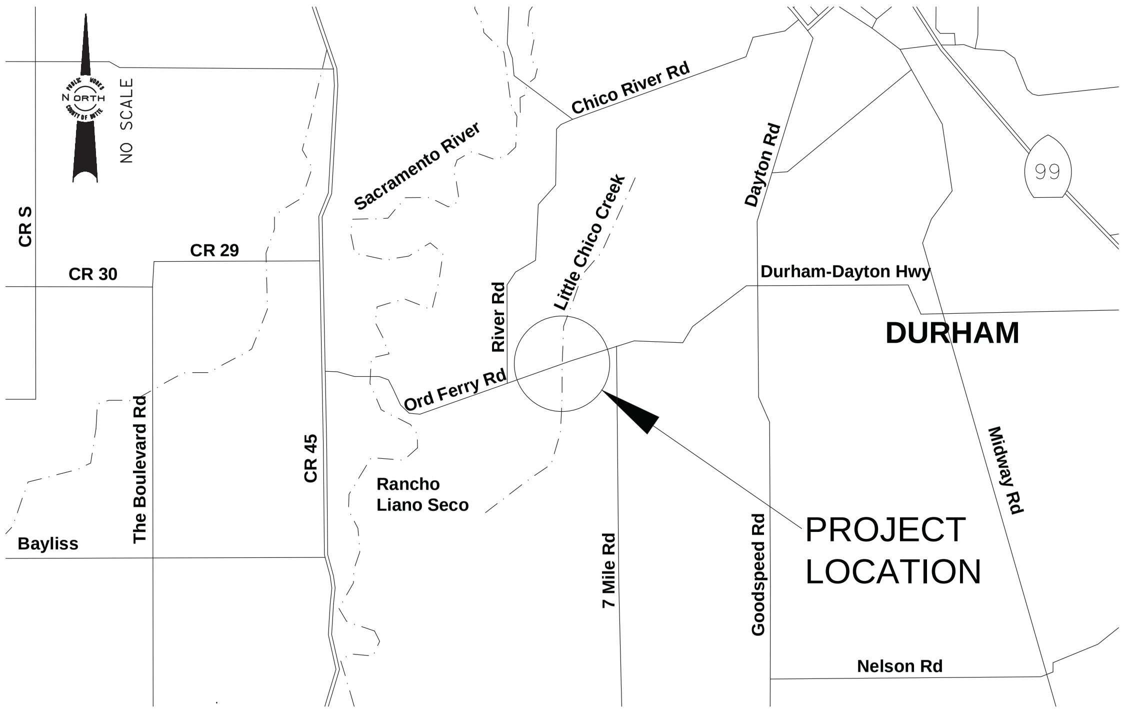
COUNTY OF BUTTE
DEPARTMENT OF PUBLIC WORKS
PLANS FOR CONSTRUCTION OF
ORD FERRY ROAD BRIDGE AT LITTLE CHICO CREEK

FEDERAL NO. BRLS-XXXX (XXX)

COUNTY PROJECT NO. XXXXX-XX-X

STATE BRIDGE NO. 12C00XX

PROJECT LENGTH = 0.3 MILES



Should Contractor activities reveal cultural resources, the supervising Contractor shall be responsible for reporting any such findings to the Resident Engineer, and a qualified archaeologist will be contacted to conduct meetings with on-site employees and monitor the referenced mitigation measures.

Project Engineer
Registered Civil Engineer

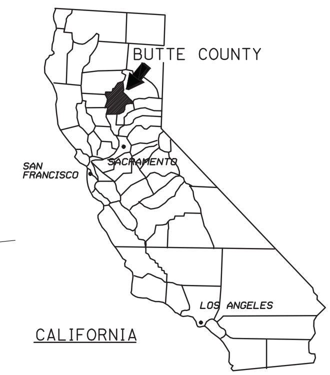
XX/XX/XX
Date

REGISTERED PROFESSIONAL ENGINEER
JASON P. JURRENS
No. C62458
Exp. 09/30/19
CIVIL
STATE OF CALIFORNIA

APPROVED 65% SUBMITTAL 2018

MIKE CRUMP, DIRECTOR OF PUBLIC WORKS
R.C.E. C41977, LIC. EXP. MARCH 31, 2012

CHAIR, BOARD OF SUPERVISORS



THE CONTRACTOR SHALL POSSESS A CLASS "A" LICENSE OR A COMBINATION OF CLASSES REQUIRED BY THE CATEGORIES AND TYPE OF WORK INCLUDED IN THIS CONTRACT BY THE TIME THIS CONTRACT IS AWARDED.

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DEPARTMENT OF BUTTE COUNTY PUBLIC WORKS

PLANS FOR CONSTRUCTION OF
ORD FERRY ROAD BRIDGE
AT LITTLE CHICO CREEK

PROJECT NUMBER
XXXXX-XX-X

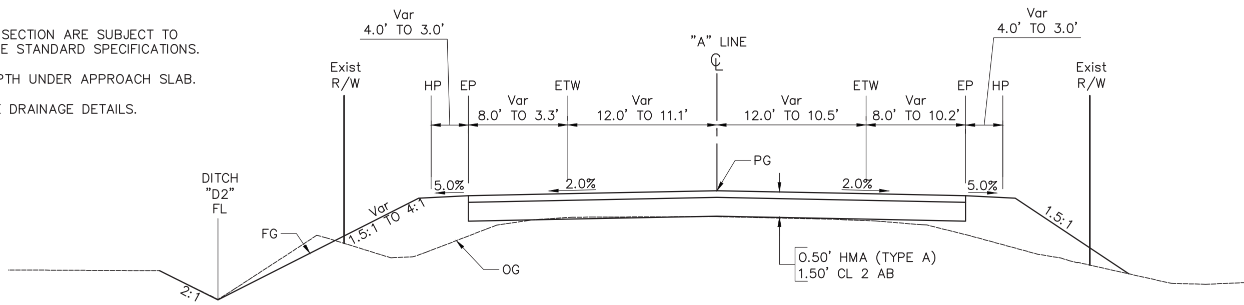
1

DATE PLOTTED => $DATE$
TIME PLOTTED => $TIME$

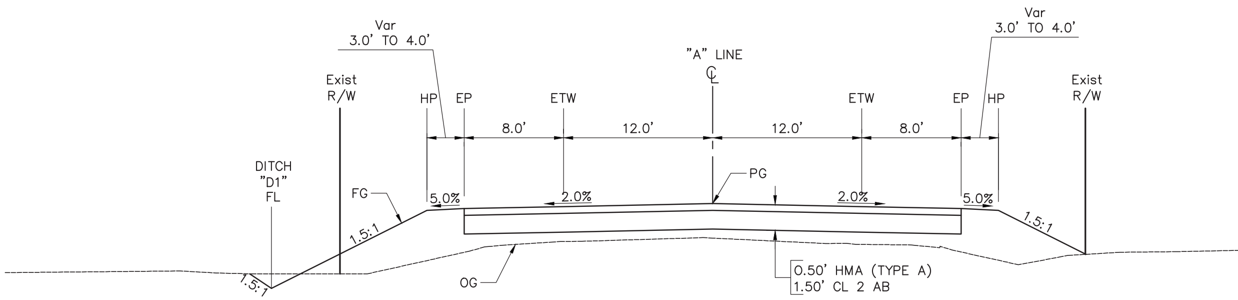
FILE =>$FILE$

NOTES:

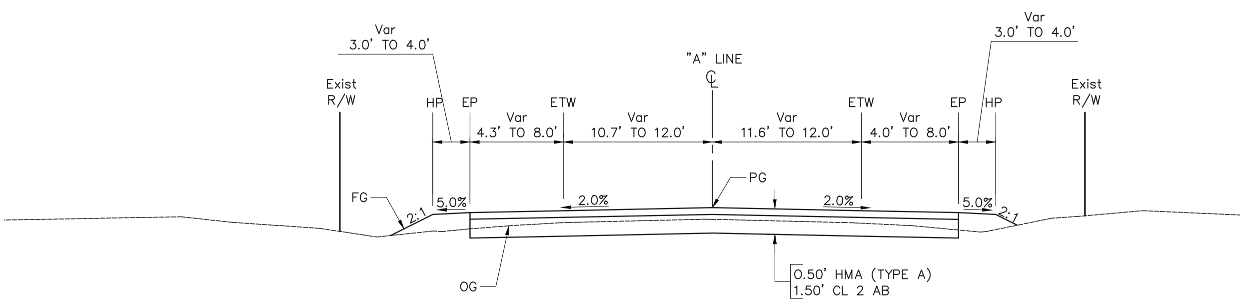
1. DIMENSIONS OF THE STRUCTURAL SECTION ARE SUBJECT TO THE TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. Cl 2 AB TO EXTEND AT SAME DEPTH UNDER APPROACH SLAB.
3. FOR DITCH FLOW ELEVATIONS, SEE DRAINAGE DETAILS.



ORD FERRY ROAD
STA "A" 26+09.00 EB TO STA "A" 31+00.00



ORD FERRY ROAD
STA "A" 17+56.34 TO STA "A" 19+69.00 BB



ORD FERRY ROAD
STA "A" 15+90.01 TO STA "A" 17+56.34

NO SCALE

C-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	2	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
Jason P. Jurrens
No. C62458
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN DESIGNATION (ROUTE XX)

2014 ADT = 3,437 D = XX%
XXXX ADT = XX,XXX T = XX%
DHV = XX,XXX V = 60 MPH

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

TYPICAL SECTIONS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 2 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rca001.dwg

USERNAME Krassip

DATE PLOTTED 3/27/2018 9:37:14 AM

TIME PLOTTED 9:37:14 AM

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.
3. FOR DITCH FLOW ELEVATIONS, SEE DRAINAGE DETAILS.

LEGEND:

- DIRECTION OF TRAFFIC
- SURVEY CONTROL POINT
- TOE OF FILL/TOP OF CUT
- DITCH FLOW LINE
- FENCE (TYPE CL-6)
- OVERHEAD ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND FIBER OPTIC

SURVEY CONTROL DATA

NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION	STATION	OFFSET
1	2356019.771	6581813.714	113.46	B.C.M.	'A" 30+77.54	70.17' Rt
102	2355595.349	6580395.649	114.54	¾ REBAR	"A" 15+98.19	19.57' Rt
104	2355714.286	6580738.250	116.18	¾ REBAR	"A" 19+60.83	16.25' Rt
105	2355956.574	6581349.933	115.17	¾ REBAR	"A" 26+17.86	18.03' Lt

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	3	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Jason P. Jurrens No. C62458 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

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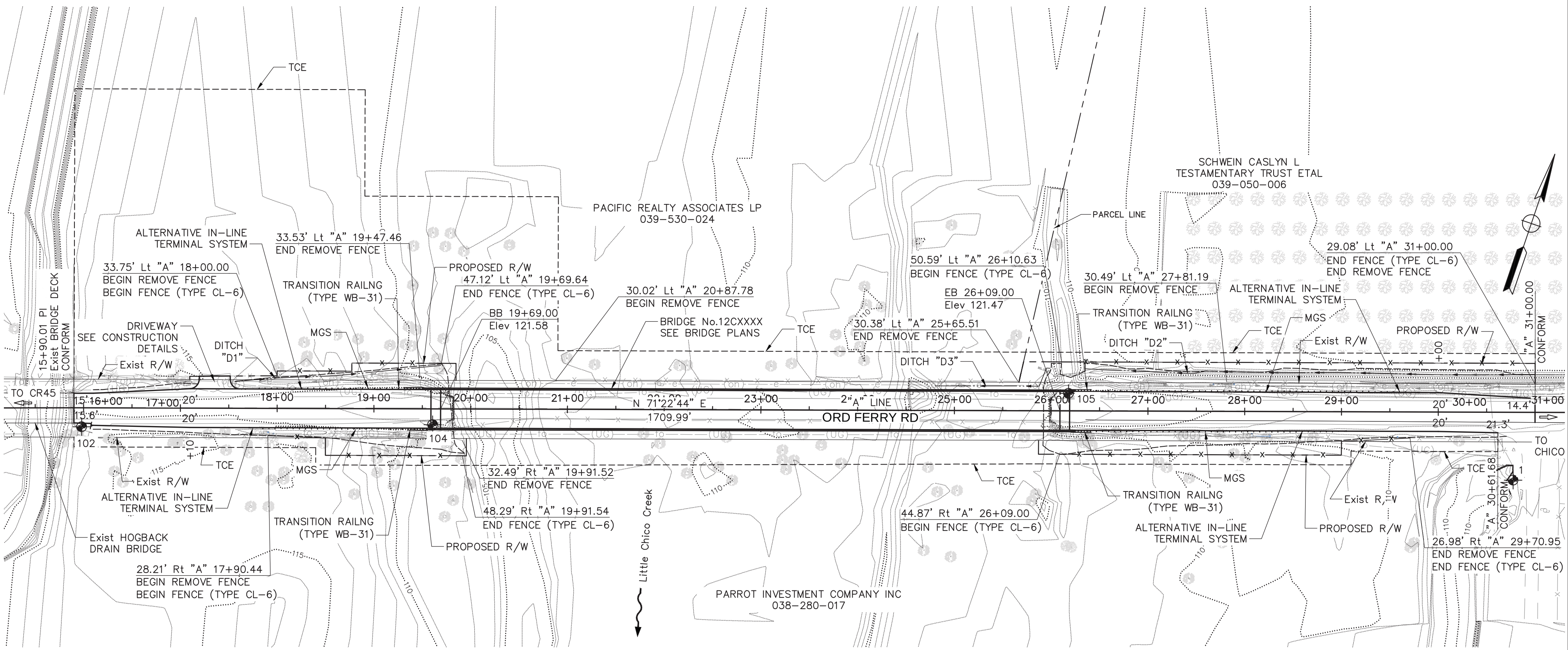

SCALE 1"=50'

L-1

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE BUTTE COUNTY DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens PROJECT ENGINEER

BRIDGE NO. 12C0052 ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00 PROJECT NUMBER & PHASE: 00 CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 3 OF 14

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USERNAME Krassip DATE PLOTTED 4/1/2019 1:51:35 PM TIME PLOTTED 1:51:35 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	4	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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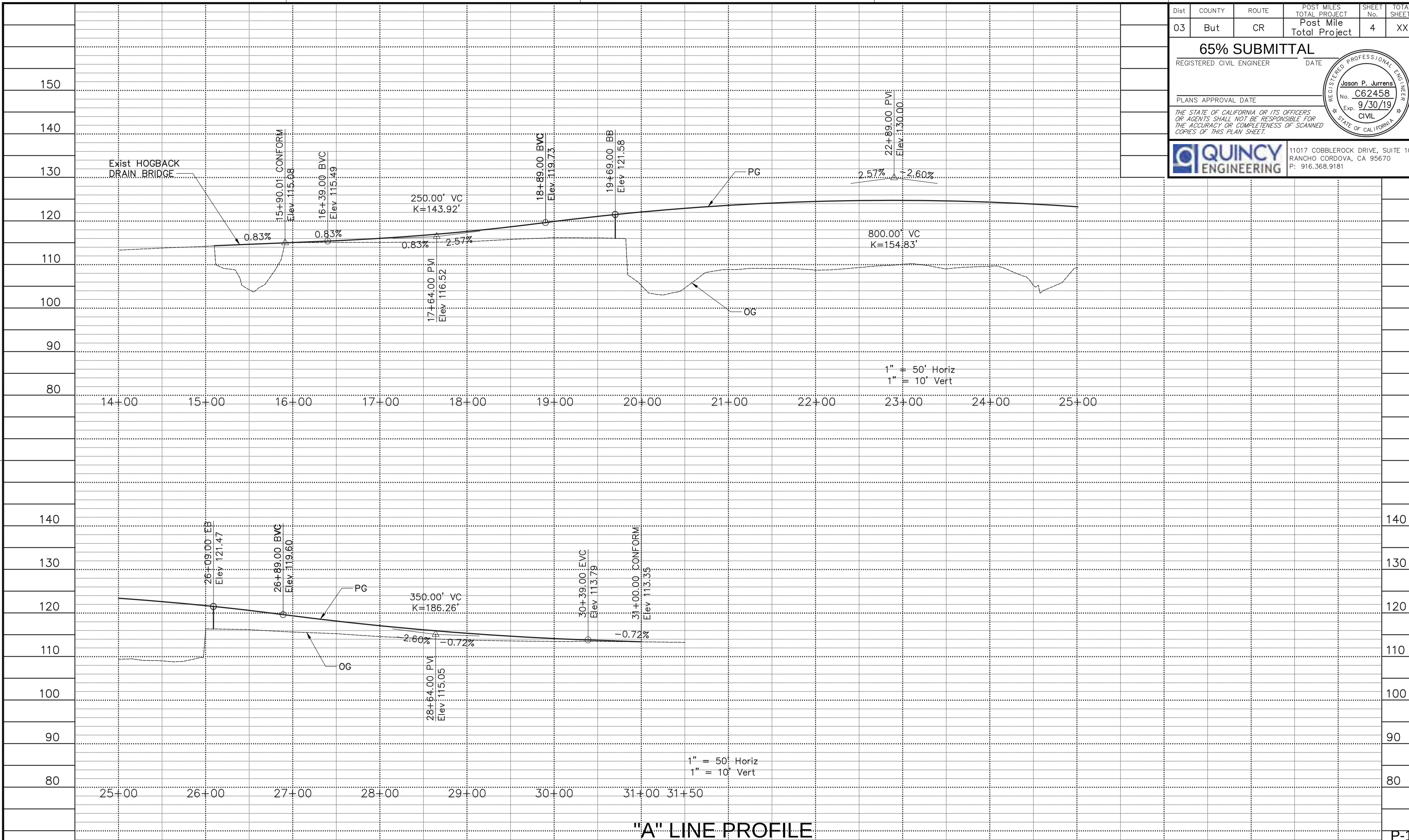
REGISTERED PROFESSIONAL ENGINEER — Jason P. Jurrens — No. C62458 — Exp. 9/30/19 — CIVIL — STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181



"A" LINE PROFILE

P-1

DESIGN	BY K. Panayotov	CHECKED J. Jurrens	PREPARED FOR THE BUTTE COUNTY DEPARTMENT OF TRANSPORTATION
DETAILS	BY K. Panayotov	CHECKED J. Jurrens	
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens	

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

PROFILE

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 4 OF 14

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TIME PLOTTED 9:38:00 AM
USERNAME Krassip

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	5	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Jason P. Jurrens No. C62458 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

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11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

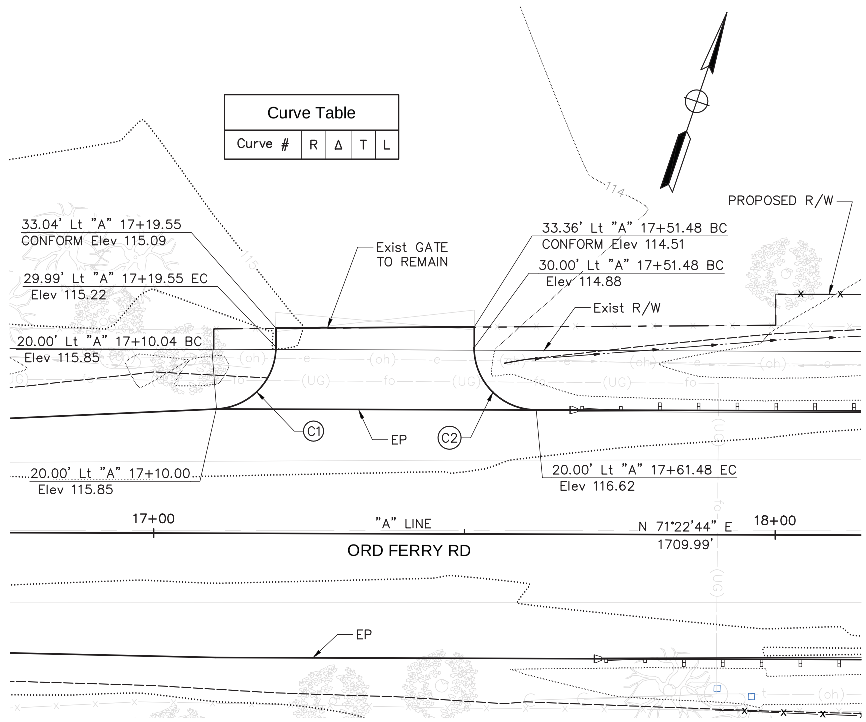
NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.

LEGEND:

- TOE OF FILL/TOP OF CUT
- DITCH FLOW LINE
- OVERHEAD ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND FIBER OPTIC

Curve Table				
Curve #	R	Δ	T	L



DRIVEWAY DETAIL

1"=10'

C-1

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

CONSTRUCTION DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00

CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 5 OF 14

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USERNAME Krassip DATE PLOTTED 3/27/2018 9:38:21 AM TIME PLOTTED 9:38:21 AM

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

LEGEND:

- DIRECTION OF TRAFFIC
- SURVEY CONTROL POINT
- TOE OF FILL/TOP OF CUT
- DITCH FLOW LINE
- OVERHEAD ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND FIBER OPTIC
- EROSION CONTROL (TYPE 1)
- TEMPORARY FIBER ROLL
- TEMPORARY SILT FENCE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	6	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Jason P. Jurrens No. C62458 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

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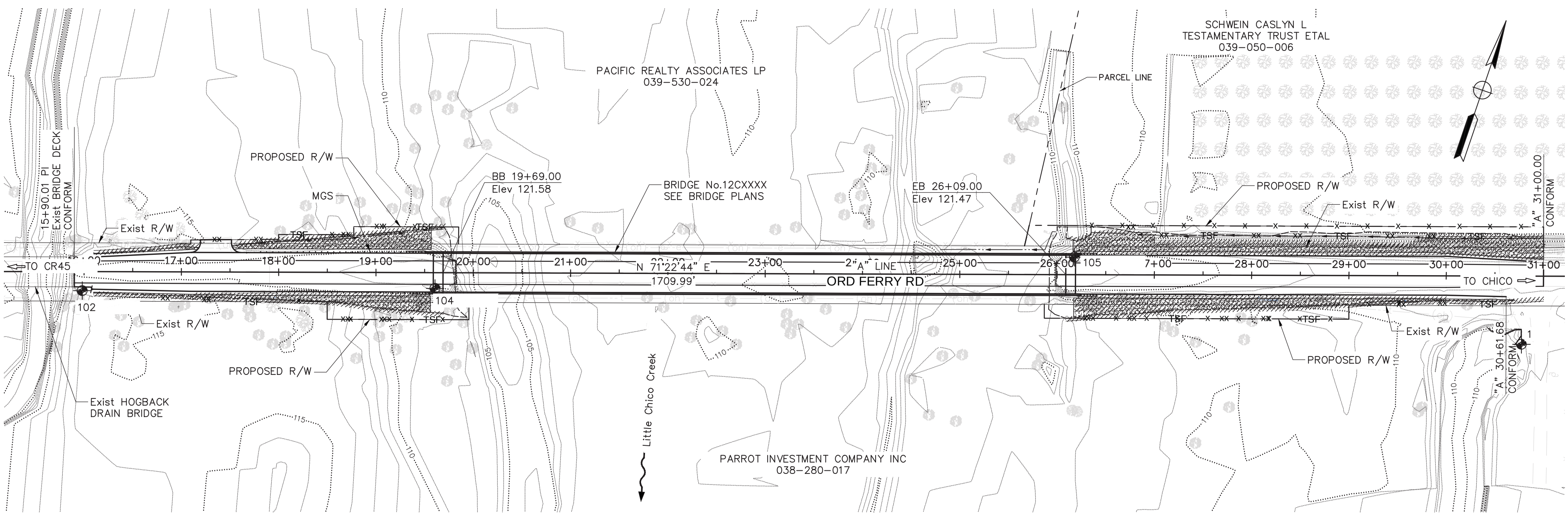
QUINCY ENGINEERING 11017 COBBLEROCK DRIVE, SUITE 100 RANCHO CORDOVA, CA 95670 P: 916.368.9181



SCALE 1"=50'

EC-1

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE BUTTE COUNTY DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

EROSION CONTROL PLAN

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00

CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 6 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rgh001.dwg

TIME PLOTTED 9:38:42 AM

DATE PLOTTED 3/27/2018 9:38:42 AM

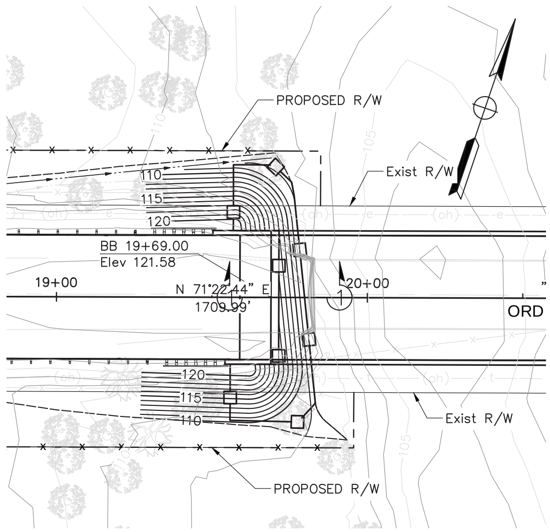
USERNAME Krassip

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. CONTOURS SHOWN REPRESENT FINISH GRADE SURFACE.

LEGEND:

- TOE OF FILL/TOP OF CUT
- DITCH FLOW LINE
- LIMITS OF RSP
- OVERHEAD ELECTRIC
- OVERHEAD TELEPHONE
- UNDERGROUND FIBER OPTIC



PLAN
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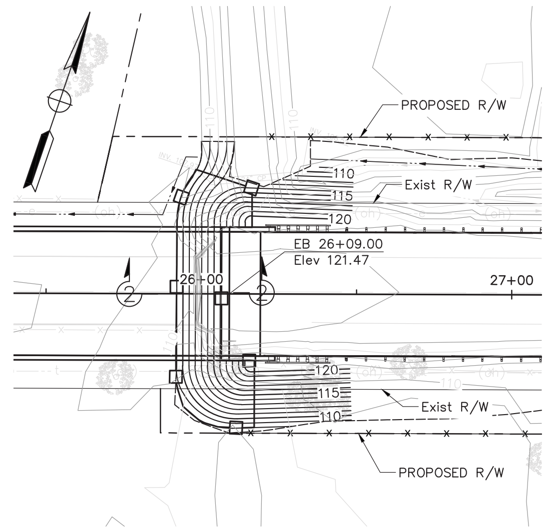

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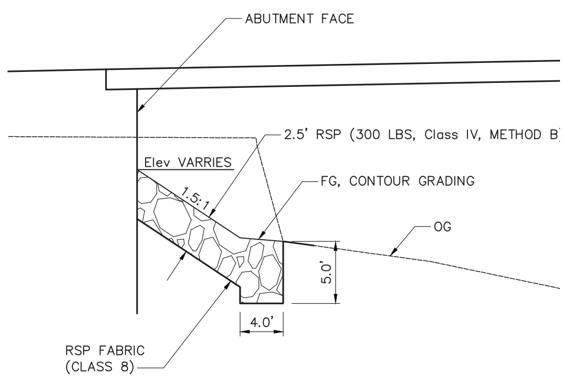

SECTION 1-1
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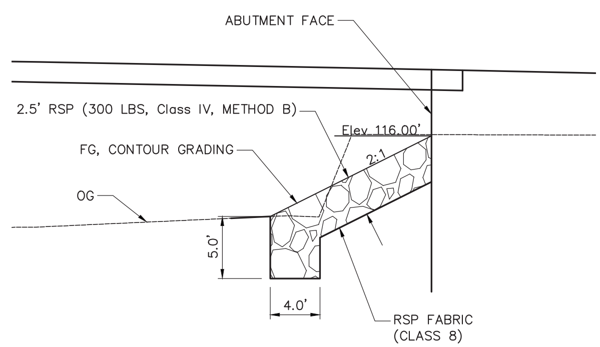


SECTION 2-2
NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	7	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Jason P. Jurrens
No. C62458
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

G-1

DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	K. Panayotov	J. Jurrens
DETAILS	K. Panayotov	J. Jurrens
QUANTITIES	K. Panayotov	J. Jurrens

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
CONTOUR GRADING

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 7 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 – CADD Files\Roadway\B02850rha001.dwg

TIME PLOTTED 9:39:10 AM
DATE PLOTTED 3/27/2018 9:39:10 AM
USERNAME Krassip

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	8	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Jason P. Jurrens No. C62458 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

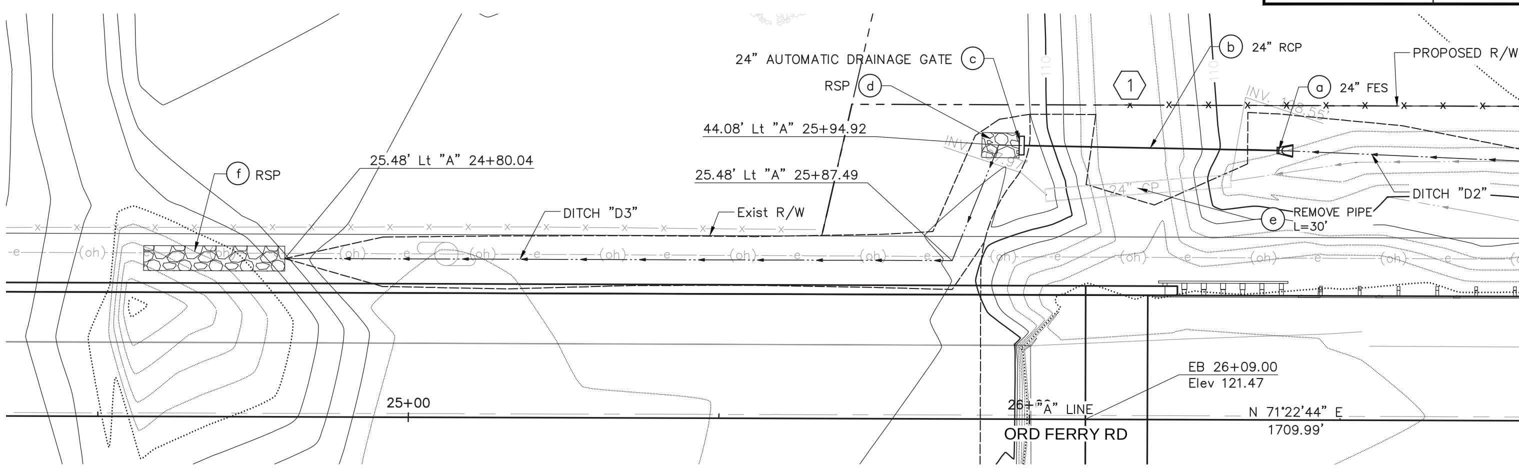
QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

NOTE:

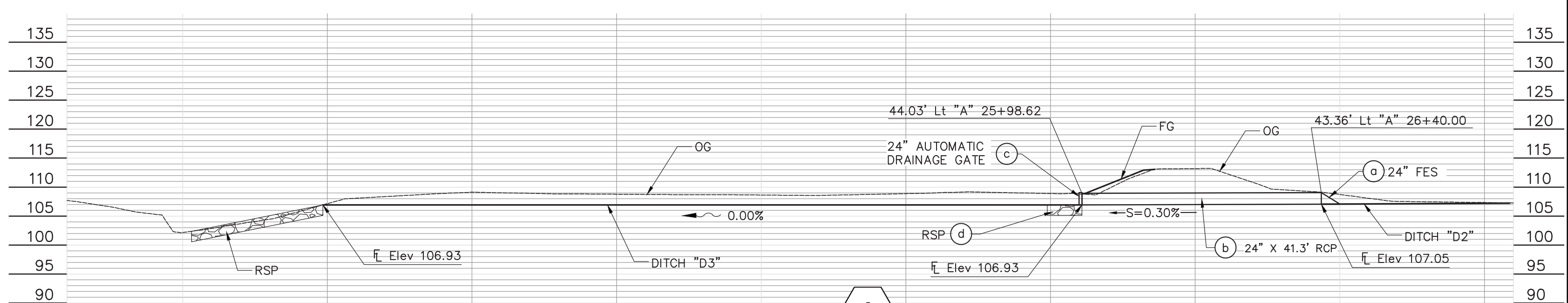
1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.
3. CONTRACTOR SHALL POSITIVELY DETERMINE ALL HORIZONTAL AND VERTICAL LOCATIONS OF ALL UTILITIES PRIOR TO ORDERING MATERIALS OF ANY COMPONENT OF ANY DRAINAGE SYSTEMS.
4. FOR DITCH FLOW ELEVATIONS, SEE DRAINAGE DETAILS.

LEGEND:

TOE OF FILL/TOP OF CUT
DITCH FLOW LINE
OVERHEAD ELECTRIC
OVERHEAD TELEPHONE
UNDERGROUND FIBER OPTIC
DRAINAGE SYSTEM NUMBER
DRAINAGE UNIT NUMBER



PLAN
1"=10'



DRAINAGE SYSTEM 1

"A" 25+98.62 TO "A" 26+40.00

1" = 10' Horiz
1" = 10' Vert

D-1

	BY		CHECKED	
DESIGN	BY	K. Panayotov	CHECKED	J. Jurrens
DETAILS	BY	K. Panayotov	CHECKED	J. Jurrens
QUANTITIES	BY	K. Panayotov	CHECKED	J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
DRAINAGE PLAN AND PROFILE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

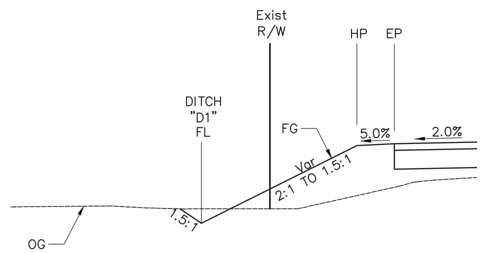
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

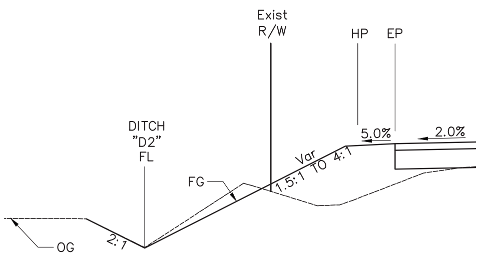
DISREGARD PRINTS BEARING EARLIER REVISION DATES
REVISION DATES
SHEET 8 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rla001.dwg

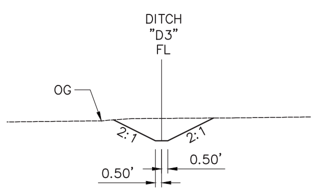
TIME PLOTTED 9:39:35 AM
DATE PLOTTED 3/27/2018 9:39:35 AM
USERNAME Krassip



DITCH "D1"
STA "A" 17+56.34 TO STA "A" 19+69.00 BB
NO SCALE



DITCH "D2"
STA "A" 26+35.00 TO STA "A" 31+00.00
NO SCALE

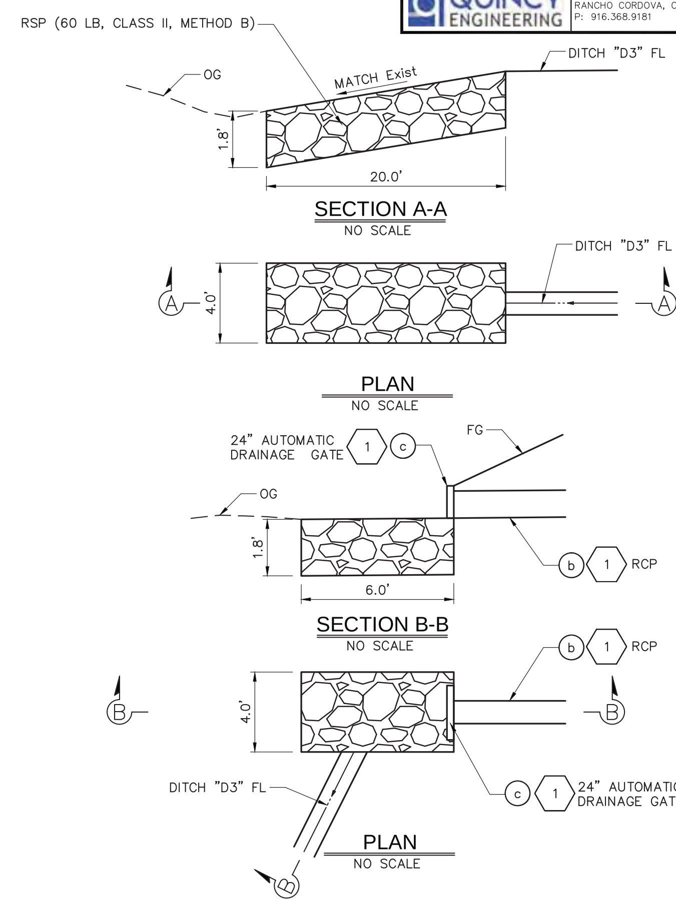


DITCH "D3"
STA "A" 24+80.04 TO STA "A" 25+94.92
NO SCALE

DITCH "D1"			
STA	OFFSET	LT/RT	FLOW ELEVATION
17+56.34	28.24'	LT	113.78
17+60.00	28.13'	LT	113.65
17+80.00	29.72'	LT	112.93
18+00.00	31.35'	LT	112.22
18+20.00	32.33'	LT	111.97
18+40.00	33.13'	LT	111.87
18+60.00	33.97'	LT	111.77
18+80.00	35.94'	LT	110.94
19+00.00	38.00'	LT	110.08
19+20.00	40.02'	LT	109.22
19+40.00	42.00'	LT	108.35
19+60.00	43.95'	LT	107.49
19+69.00	44.85'	LT	107.08

DITCH "D1"			
STA	OFFSET	LT/RT	FLOW ELEVATION
26+35.00	43.91'	LT	107.03
26+40.00	43.72	LT	107.05
26+60.00	42.92'	LT	107.11
26+80.00	42.09'	LT	107.17
27+00.00	41.23'	LT	107.23
27+20.00	40.39'	LT	107.29
27+40.00	39.59'	LT	107.35
27+60.00	41.58'	LT	107.39
27+80.00	41.04'	LT	107.41
28+00.00	40.55'	LT	107.44
28+20.00	40.35'	LT	107.47
28+40.00	40.14'	LT	107.49
28+60.00	40.19'	LT	107.52
28+80.00	40.38'	LT	107.54
29+00.00	40.46'	LT	107.57
29+20.00	40.10'	LT	107.60
29+40.00	39.74'	LT	107.62
29+60.00	39.36'	LT	107.65
29+80.00	38.97'	LT	107.68
30+00.00	38.62'	LT	107.70
30+20.00	38.61'	LT	107.73
30+40.00	38.61'	LT	107.75
30+60.00	38.73'	LT	107.78
30+80.00	38.93'	LT	107.81
31+00.00	39.11'	LT	107.83

DITCH "D3"			
STA	OFFSET	LT/RT	FLOW ELEVATION
24+80.04	25.48'	LT	106.93
25+87.49	25.48'	LT	106.93
25+94.92	44.08'	LT	16.93



ROCK SLOPE PROTECTION AT DRAINAGE OUTFALLS

NO SCALE

DD-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	9	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER
Jason P. Jurrens
No. C62458
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

DRAINAGE DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00

CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 9 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850ric001.dwg

TIME PLOTTED 9:39:53 AM
DATE PLOTTED 3/27/2018 9:39:53 AM
USERNAME Krassip

NOTE:

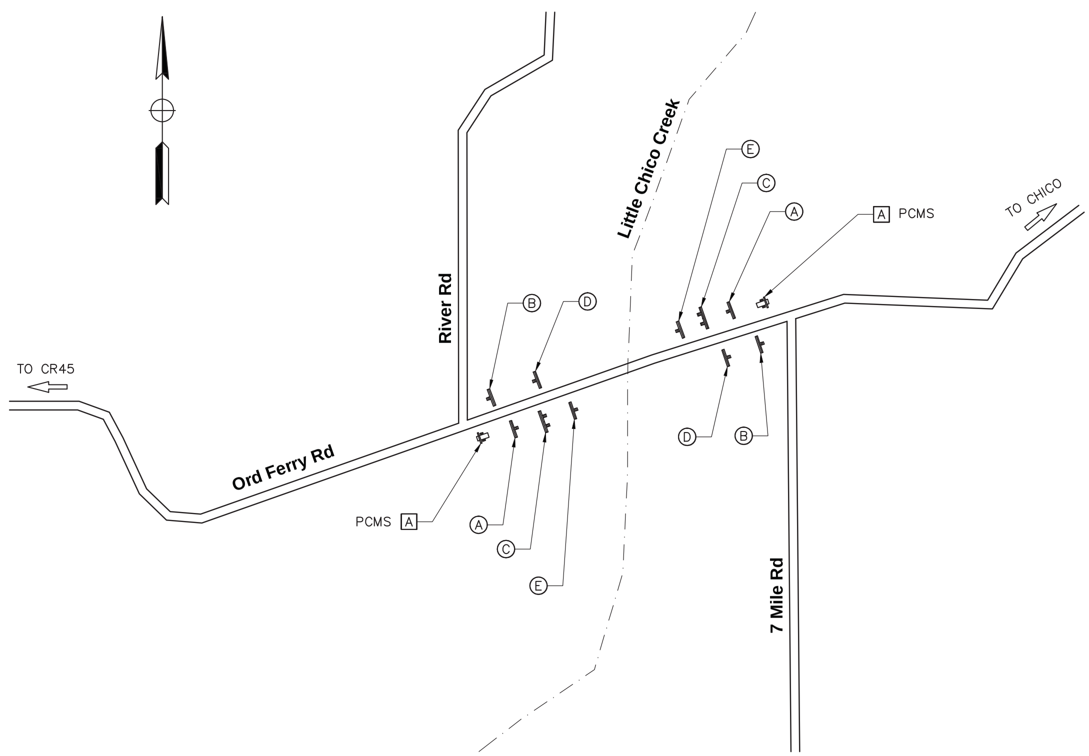
1. THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
2. ADVANCE INFORMATION SIGNS TO BE INSTALLED SEVEN (7) DAYS PRIOR TO ROAD CLOSURE AND CONSTRUCTION.
3. SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY ENGINEER.
4. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE TRAFFIC HANDLING AND DETOUR PLANS.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
A	W20-1		36" X 36"	ROAD WORK AHEAD	1 – 4" X 6"	2
B	G20-2		36" X 18"	END ROAD WORK	1 – 4" X 6"	2
C		C40(CA)	108' X 42"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 – 6" X 6"	2
D	R2-12		24" X 30"	END WORK ZONE SPEED LIMIT	1 – 4" X 6"	2
E	W3-3		30" X 30"	SIGNAL AHEAD	1 – 4" X 6"	2

LEGEND:

- DIRECTION OF TRAFFIC
- STATIONARY MOUNTED SIGN – ONE POST
- STATIONARY MOUNTED SIGN – TWO POST
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- X PCMS MESSAGE



ORD FERRY Rd.
CONSTRUCTION
(DATES)
(TIMES)

DETAIL A
(SEE NOTE 2)

NO SCALE

CS-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	10	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
Jason P. Jurrens
No. C62458
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	K. Panayotov	J. Jurrens
DETAILS	K. Panayotov	J. Jurrens
QUANTITIES	K. Panayotov	J. Jurrens

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
CONSTRUCTION AREA SIGNS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 10 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 – CADD Files\Roadway\B02850rla001.dwg

USERNAME Krassip DATE PLOTTED 3/27/2018 9:40:02 AM TIME PLOTTED 9:40:02 AM

NOTE:

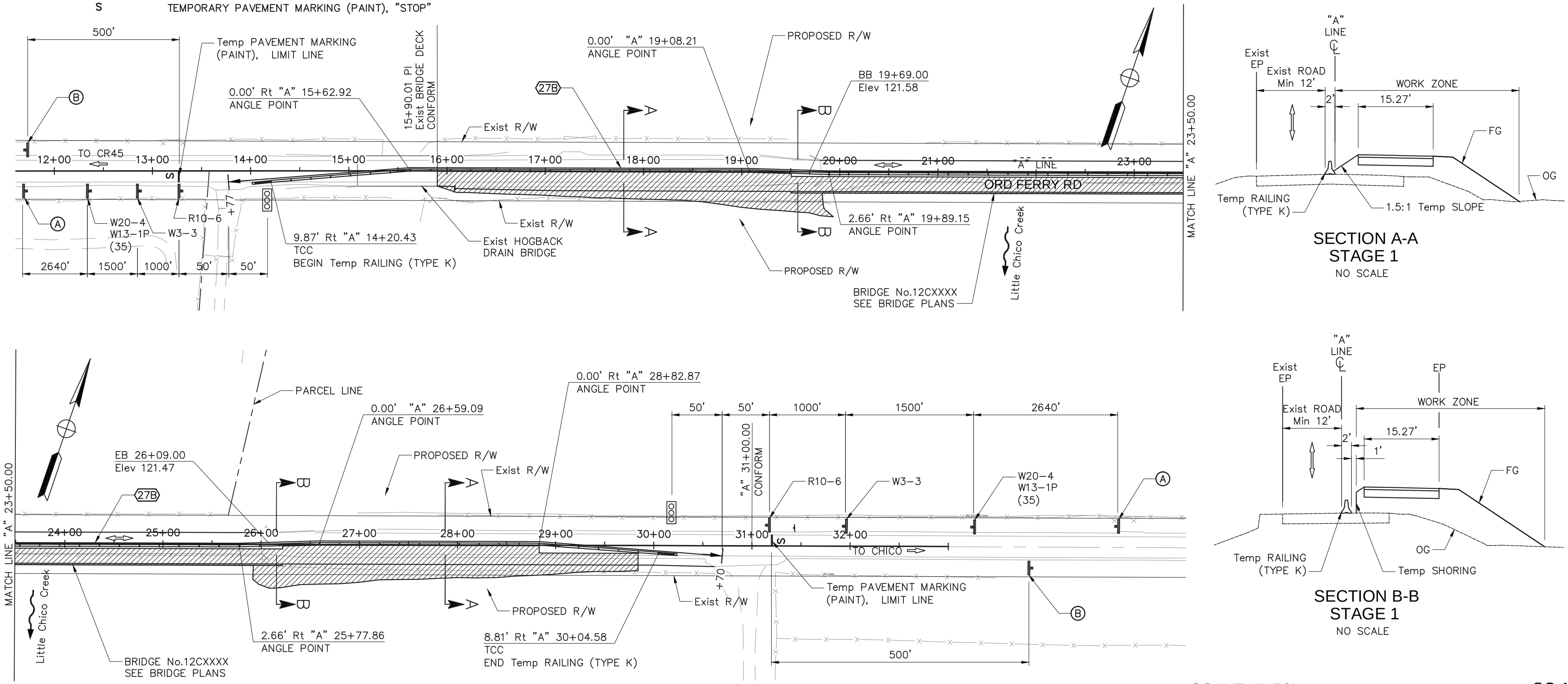
1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE, EXACT LOCATION WILL BE DETERMINED BY ENGINEER.

LEGEND:

- STAGE 1 – CONSTRUCT ROADWAY AND EASTBOUND PORTION OF BRIDGE
- TEMPORARY RAILING (TYPE K)
- TEMPORARY CRASH CUSHION (TCC)
- DIRECTION OF TRAFFIC
- TEMPORARY SIGNAL SYSTEM
- S TEMPORARY PAVEMENT MARKING (PAINT), "STOP"

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN NO.	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
A	W20–1		36" X 36"	ROAD WORK AHEAD	1 – 4" X 6"	2
B	G20–2		36" X 18"	END OF ROAD WORK	1 – 4" X 6"	2
	W3–3		30" X 30"	SIGNAL AHEAD	1 – 4" X 4"	2
	W13–1P		18" X 18"	SPEED LIMIT 35 MPH	1 – 4" X 4"	2
	W20–4		30" X 30"	ONE LANE ROAD AHEAD	1 – 4" X 4"	2
	R10–6		24" X 36"	STOP HERE ON RED	1 – 4" 6"	2



SCALE 1"=50'

SC-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	11	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER, Jason P. Jurrens, No. C62458, Exp. 9/30/19, CIVIL, STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
STAGE CONSTRUCTION AND TRAFFIC HANDLING (STAGE 1)

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET 11 | OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 – CADD Files\Roadway\B02850rma001.dwg

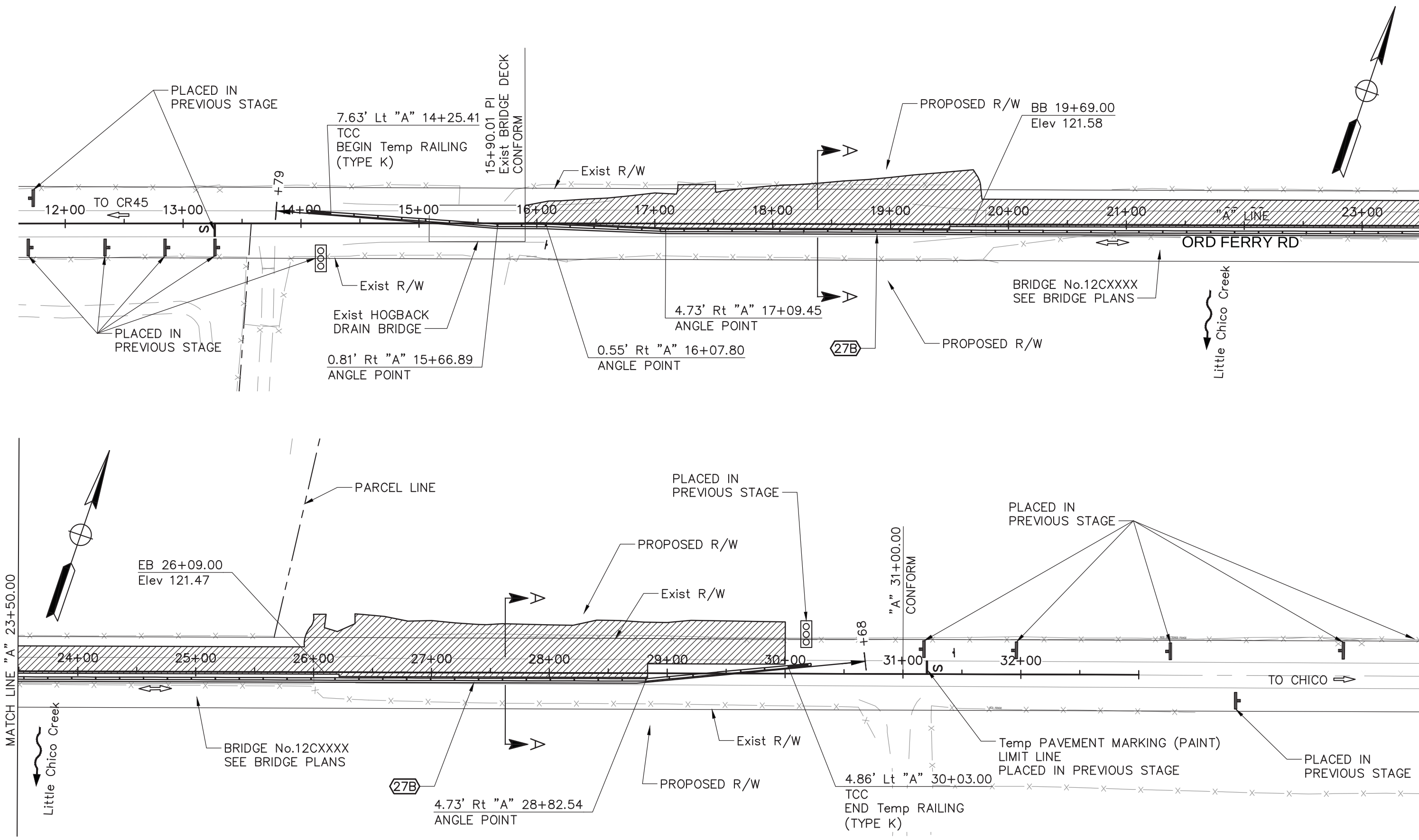
USERNAME Krassip DATE PLOTTED 3/27/2018 9:40:22 AM TIME PLOTTED 9:40:22 AM

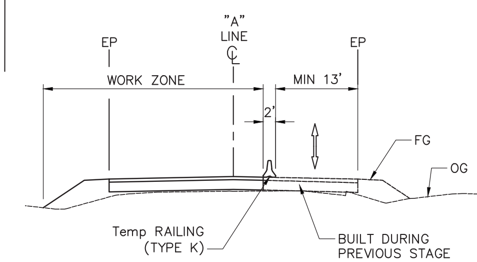
NOTE:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE, EXACT LOCATION WILL BE DETERMINED BY ENGINEER.

LEGEND:

STAGE 2 – CONSTRUCT ROADWAY AND WESTBOUND PORTION OF BRIDGE





SECTION A-A
STAGE 2
NO SCALE

SCALE 1"=50'

SC-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	12	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jason P. Jurrens — No. C62458 — Exp. 9/30/19 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

	BY		CHECKED	
DESIGN	BY	K. Panayotov	CHECKED	J. Jurrens
DETAILS	BY	K. Panayotov	CHECKED	J. Jurrens
QUANTITIES	BY	K. Panayotov	CHECKED	J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
STAGE CONSTRUCTION AND TRAFFIC HANDLING (STAGE 2)

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES — REVISION DATES — SHEET 12 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 – CADD Files\Roadway\B02850rma002.dwg

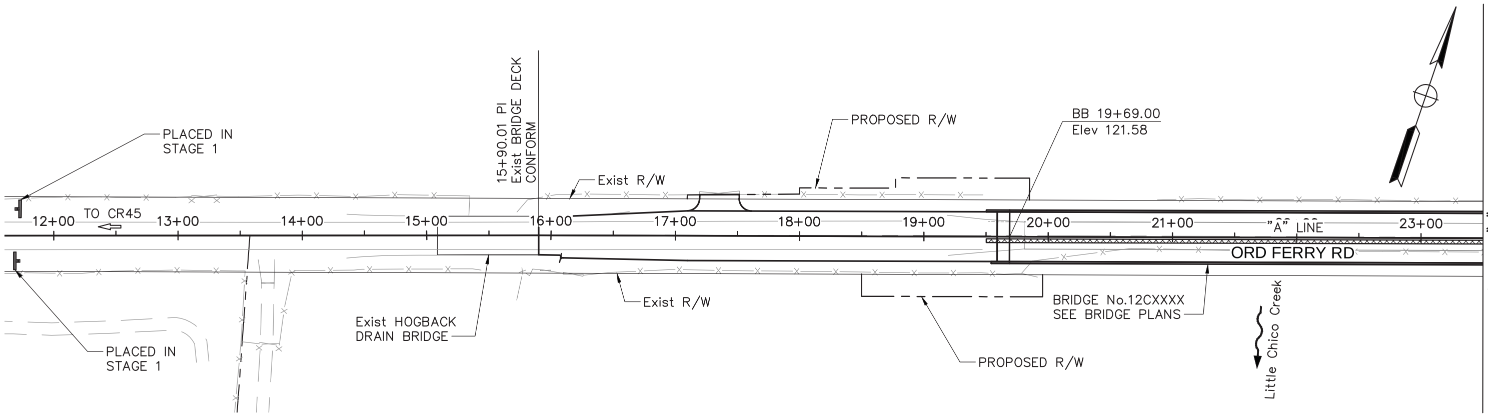
USERNAME Krassip
DATE PLOTTED 3/27/2018 9:40:43 AM
TIME PLOTTED 9:40:43 AM

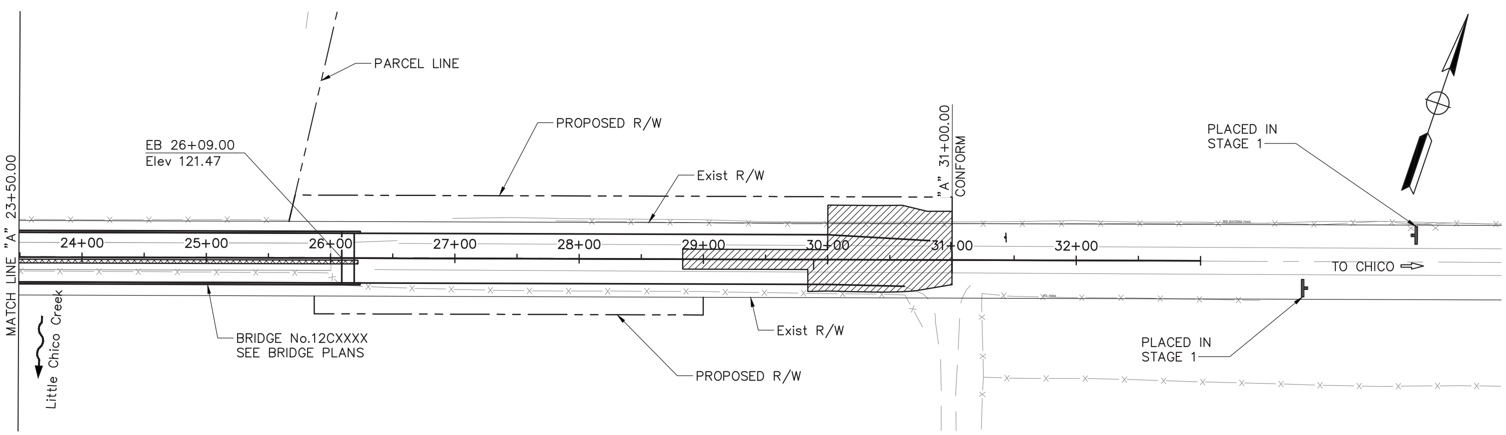
NOTE:

1. THIS PLAN ACCURATE FOR STAGE CONSTRUCTION WORK ONLY.
2. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE, EXACT LOCATION WILL BE DETERMINED BY ENGINEER.

LEGEND:

(hatched)	STAGE 3 – CONSTRUCT CONFORM AREA UNDER TEMPORARY LANE CLOSURE
(cross-hatched)	STAGE 3 – BRIDGE CLOSURE POUR





SCALE 1"=50'

SC-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	13	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Jason P. Jurrens — No. C62458 — Exp. 9/30/19 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

QUINCY ENGINEERING

11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

STAGE CONSTRUCTION AND TRAFFIC HANDLING (STAGE 3)

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00

CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 13 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 – CADD Files\Roadway\B02850rma003.dwg

USERNAME Krassip
DATE PLOTTED 3/27/2018 9:41:02 AM
TIME PLOTTED 9:41:02 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	14	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

REGISTERED PROFESSIONAL ENGINEER Jason P. Jurrens No. C62458 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

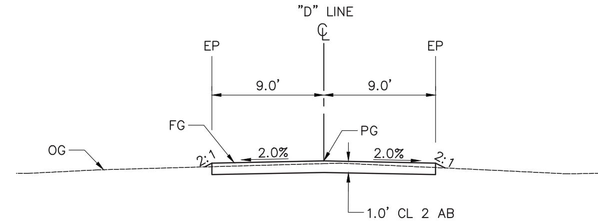
QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. FOR UTILITY INFORMATION, SEE UTILITY SHEETS.

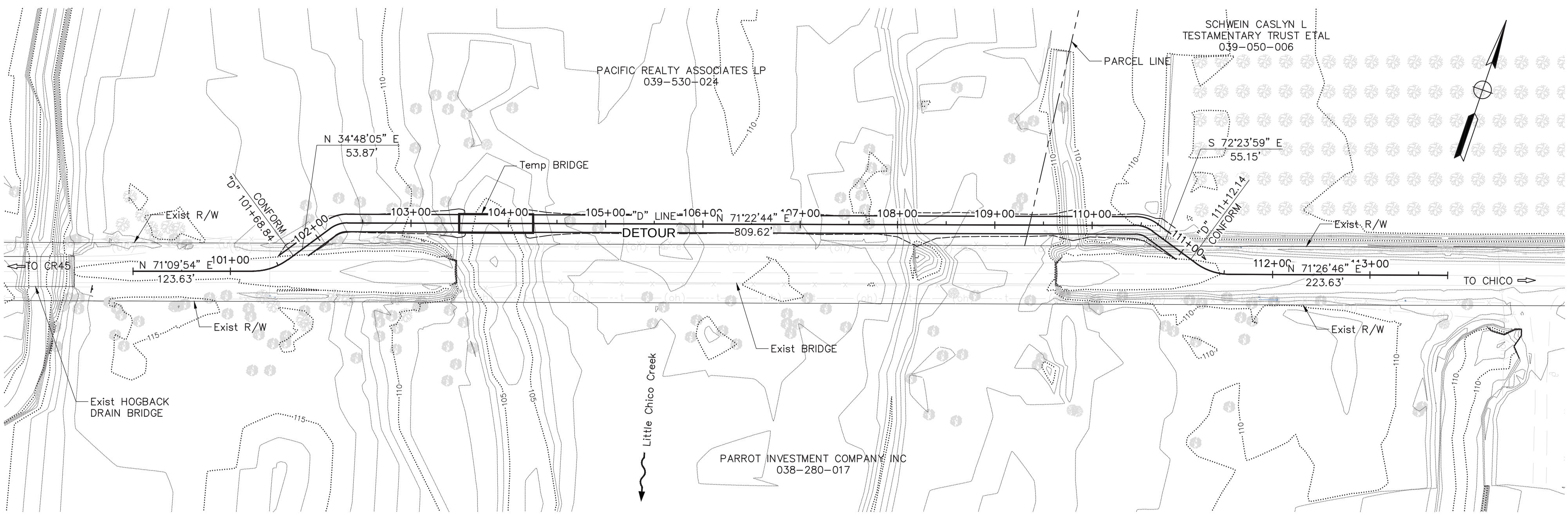
LEGEND:

⇨	DIRECTION OF TRAFFIC
------------	TOE OF FILL/TOP OF CUT
	DITCH FLOW LINE
—e—(oh)—	OVERHEAD ELECTRIC
—t—(oh)—	OVERHEAD TELEPHONE
—fo—(UG)—	UNDERGROUND FIBER OPTIC



DETOUR

STA "D" 101+68.84 TO STA "D" 111+12.14



SCALE 1"=50'

DE-1

DESIGN	BY K. Panayotov	CHECKED J. Jurrens	
DETAILS	BY K. Panayotov	CHECKED J. Jurrens	
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens	

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

LOCAL DETOUR LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 14 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rea001 DETOUR.dwg

USERNAME Krassip
DATE PLOTTED 3/27/2018 9:41:28 AM
TIME PLOTTED 9:41:28 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	15	XX

65% SUBMITTAL

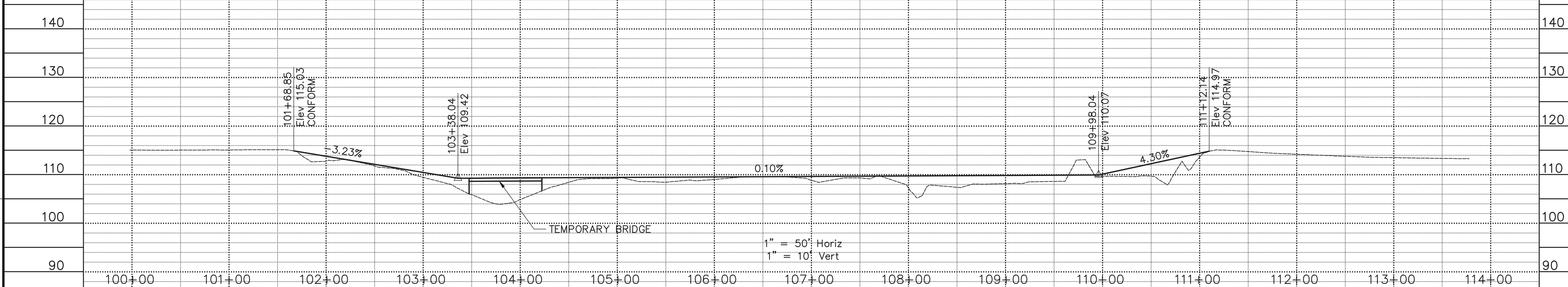
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
Jason P. Jurrens
No. C62458
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181



"D" LINE PROFILE

DE-2

DESIGN	BY K. Panayotov	CHECKED J. Jurrens	
DETAILS	BY K. Panayotov	CHECKED J. Jurrens	
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens	

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

LOCAL DETOUR PROFILE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00

CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 15 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rfa001 DETOUR.dwg

TIME PLOTTED 9:41:51 AM
DATE PLOTTED 3/27/2018 9:41:51 AM
USERNAME Krassip

NOTE:

1. FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT THE COUNTY OFFICE.
2. THIS PLAN ACCURATE FOR PAVEMENT DELINEATION WORK ONLY.
3. EXACT LOCATION AND POSITION OF ROADSIDE SIGN TO BE DETERMINED BY THE ENGINEER.

LEGEND:

⇨	DIRECTION OF TRAFIC
XXX	PAVEMENT DELINEATION DETAIL
→|	BEGIN, END OR CHANGE IN STRIPING DETAIL
├●	OBJECT MARKER (TYPE P)
●	REMOVE ROADSIDE SIGN
X–X	ROADSIDE SIGN (SHEET NUMBER–SIGN NUMBER)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	16	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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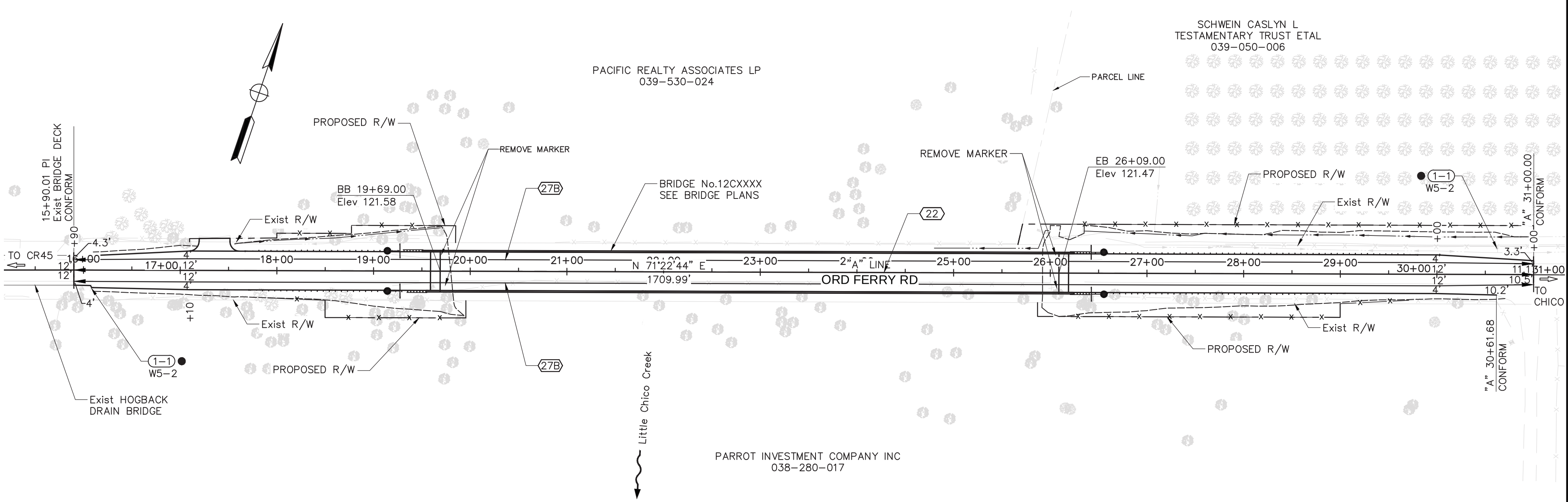
REGISTERED PROFESSIONAL ENGINEER
Jason P. Jurrens
No. C62458
Exp. 9/30/19
CIVIL
STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181



SCALE 1"=50'

PD-1

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

DESIGN OVERSIGHT

SIGN OFF DATE

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
PAVEMENT DELINEATION AND SIGN PLAN

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 16 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rna001.dwg

TIME PLOTTED 9:42:13 AM
DATE PLOTTED 3/27/2018 9:42:13 AM
USERNAME Krassip

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	17	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER — Jason P. Jurrens — No. C62458 — Exp. 9/30/19 — CIVIL — STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

ROADWAY ITEMS

FROM LINE	FROM STATION	TO LINE	TO STATION	ROADWAY EXCAVATION CY	EMBANKMENT (N) CY	IMPORTED BORROW CY	DITCH EXCAVATION CY	CLASS 2 AGGREGATE BASE CY	HOT MIX ASPHALT (TYPE A) TON	TACK COAT TON	REMOVE FENCE LF	CHAIN LINK FENCE (TYPE CL-6) LF	REMOVE ROADSIDE SIGN EA	REMOVE MARKER EA	ROCK SLOPE PROTECTION (300 LB. CLASS IV, METHOD B) CY	ROCK SLOPE PROTECTION FABRIC (CLASS 8) SQYD	COMMENTS
"A"	15+90.01	"A"	19+69.00 BB	246	1253	1007		792	538	0.4							
"A"	26+09.00 EB	"A"	31+00.00	530	1973	1443	39	1059	711	0.6							DITCH "D3"
DRIVEWAY	17+35.00 Lt							26									
"D"	101+68.85	"D"	111+12.14	292	598	306		629									DETOUR
"A"	ABUTMENT 1			54	74	20									165	292.0	CONTOUR GRADING/RSP
"A"	ABUTMENT 2			17	104	87									167	310.0	CONTOUR GRADING/RSP
"A"	18+00.00 Lt	"A"	19+47.46 Lt								147						REMOVE FENCE
"A"	17+90.44 Rt	"A"	19+91.52 Rt								188						REMOVE FENCE
"A"	20+87.78 Lt	"A"	25+65.51 Lt								478						REMOVE FENCE
"A"	19+91.52 Rt	"A"	29+70.95 Rt								1015						REMOVE FENCE
"A"	27+81.19 Lt	"A"	31+00.00 Lt								320						REMOVE FENCE
"A"	18+00.00 Lt	"A"	19+69.64 Lt									183					
"A"	17+90.44 Rt	"A"	19+91.54 Rt									219					
"A"	26+10.63 Lt	"A"	31+00.00 Lt									511					
"A"	26+09.00 Rt	"A"	29+70.95 Rt									377					
"A"	16+08.25 Rt												1				REMOVE ROADSIDE SIGN
"A"	30+62.18 Lt												1				REMOVE ROADSIDE SIGN
	EXIST BRIDGE BB													2			EXIST BRIDGE
	EXIST BRIDGE EB													2			EXIST BRIDGE
			TOTAL	1139	4002	2571	39	2506	1249	1.0	2148	1290	2	4	332.0	602.0	

(N) NOT A SEPARATE PAY ITEM. FOR INFORMATION ONLY.

DRAINAGE ITEMS

DRAINAGE SYSTEM	DRAINAGE UNIT No	STATION	OFFSET	24" AUTOMATIC DRAINAGE GATE EA	24" CONCRETE FLARED END SECTION EA	24" REINFORCED CONCRETE PIPE LF	ROCK SLOPE PROTECTION (60 LB, CLASS II METHOD B) CY	ROCK SLOPE PROTECTION FABRIC (CLASS 8) SQYD	REMOVE PIPE LF	DESCRIPTION
1	a	"A" 26+40.00	Lt		1					24" CONCRETE FLARED END SECTION
	b					41.3				24" X 41.3' RCP
	c	"A" 25+98.62	Lt	1						24" AUTOMATIC DRAINAGE GATE
	d						2	7		ROCK SLOPE PROTECTION
	e		Lt				6	21	30	REMOVE PIPE 24"
	f									ROCK SLOPE PROTECTION FABRIC
			TOTAL	1	1	41.3	8	28	30	

PAVEMENT DELINEATION

FROM LINE	FROM STATION	FROM OFFSET	TO LINE	TO STATION	TO OFFSET	DETAIL No.	THERMOPLASTIC TRAFFIC STRIPE 4" WHITE FT	THERMOPLASTIC TRAFFIC STRIPE 4" YELLOW FT	PAVEMENT MARKER (RETROREFLECTIVE) TYPE D EA
"A"	15+90.01	LT/RT	"A"	31+00.00		22		3020	128
"A"	15+90.01	RT	"A"	31+00.00	RT	27B	1510		
"A"	15+90.01	LT	"A"	31+00.00	LT	27B	1510		
					TOTAL		3020	3020	128

NO SCALE

Q-1

DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	K. Panayotov	J. Jurrens
DETAILS	K. Panayotov	J. Jurrens
QUANTITIES	K. Panayotov	J. Jurrens

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK
SUMMARY OF QUANTITIES

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 17 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rpa001.dwg

USERNAME Krassip
DATE PLOTTED 3/27/2018 9:42:14 AM
TIME PLOTTED 9:42:14 AM

TRAFFIC CONTROL

SHEET No	STAGE	FROM LINE	FROM STATION	FROM OFFSET	TO LINE	TO STATION	THERMOPLASTIC TRAFFIC STRIPE OFFSET	THERMOPLASTIC TRAFFIC STRIPE DETAIL No	THERMOPLASTIC TRAFFIC STRIPE 4" WHITE FT	TEMPORARY RAILING (TYPE K) FT	TEMPORARY CRUSH CUSHION EA	TEMPORARY PAVEMENT MARKING SQFT	DESCRIPTION
SC-1	1	"A"	13+17	RT								22	"STOP"
		"A"	13+27	RT								12	LIMIT LINE
		"A"	13+77	RT	"A"	30+70	RT	278	1695	1570			
		"A"	14+20	RT							1		
		"A"	30+04	RT							1		
		"A"	31+20	LT								12	LIMIT LINE
		"A"	31+30	LT								22	"STOP"
SC-1	2	"A"	13+79	LT	"A"	30+68	LT	278	1690	1580			
		"A"	14+25	LT							1		
		"A"	30+03	LT							1		
							TOTAL		3385	3150	4	68	

GUARD RAILING

FROM LINE	FROM	FROM OFFSET	TO LINE	TO	TO OFFSET	TRANSITION RAILING (TYPE WB-31) EA	ALTERNATIVE IN LINE TERMINAL SYSTEM EA	MIDWEST GUARDRAIL SYSTEM LF	OBJECT MARKER (TYPE P) EA
"A"	17+72 65	20.00' Lt	"A"	18+12.75	20.00' Lt		1		
"A"	18+12 75	20 00 Lt	"A"	19+25 25	20 00' Lt			112 5	
"A"	19+25 25	20.00' Lt	"A"	19+50.25	20.00' Lt	1			1
"A"	17+66 76	20.00' Rt	"A"	18+16.76	20.00' Rt		1		
"A"	18+16.76	20.00' Rt	"A"	19+29.26	20.00' Rt			112.5	
"A"	19+29 26	20 00' Rt	"A"	19+54 26	20 00' Rt	1			1
"A"	26+21 75	20.00' Lt	"A"	26+46.75	20 00' Lt	1			1
"A"	26+46 75	20 00' Lt	"A"	29+34 25	20 00' Lt			287 5	
"A"	29+34 25	20.00' Lt	"A"	29+84.25	20.00' Lt		1		
"A"	26+21 75	20 00' Rt	"A"	26+46 75	20 00' Rt	1			1
"A"	26+46 75	20.00' Rt	"A"	28+59.25	20.00' Rt			212 5	
"A"	28+59 25	20 00' Rt	"A"	29+09 25	20 00' Rt		1		
					TOTAL	4	4	725.0	4

EROSION CONTROL

FROM	TO	ROLLED EROSION CONTROL PRODUCT (TRM) SQFT	HYDROSEED SQFT	HYDROMULCH SQFT	TEMPORARY FIBER ROLL LF	TEMPORARY SILT FENCE LF
"A" 16+10 Lt	"A" 17+20 Lt	205	205	205		
"A" 16+10 Rt	"A" 19+55 Rt	2350	2350	2350		
"A" 17+50 Lt	"A" 19+55 Lt	3015	3015	3015		
"A" 26+16 Lt	"A" 31+00 Lt	6990	6990	6990		
"A" 26+16 rt	"A" 30+70 Rt	4540	4540	4540		
"A" 16+10 Lt	"A" 17+20 Lt				110	100
"A" 16+10 Rt	"A" 19+55 Rt				770	405
"A" 17+50 Lt	"A" 19+55 Lt				630	295
"A" 26+16 Lt	"A" 31+00 Lt				1670	500
"A" 26+16 rt	"A" 30+70 Rt				1250	520
TOTAL		17100	17100	17100	4430	1820

NO SCALE

Q-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	18	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Jason P. Jurrens No. C62458 Exp. 9/30/19 CIVIL STATE OF CALIFORNIA

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QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY K. Panayotov	CHECKED J. Jurrens
DETAILS	BY K. Panayotov	CHECKED J. Jurrens
QUANTITIES	BY K. Panayotov	CHECKED J. Jurrens

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Jason P. Jurrens
PROJECT ENGINEER

BRIDGE NO. 12C0052
ROAD NO. B26312

ORD FERRY ROAD OVER LITTLE CHICO CREEK

SUMMARY OF QUANTITIES

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00

CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 18 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Roadway\B02850rpa002.dwg

TIME PLOTTED 9:42:23 AM

DATE PLOTTED 3/27/2018 9:42:23 AM

USERNAME Krassip

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		1	XX

65% SUBMITTAL

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REGISTERED PROFESSIONAL ENGINEER Maxwell Katt No. C74940 Exp. .... CIVIL STATE OF CALIFORNIA

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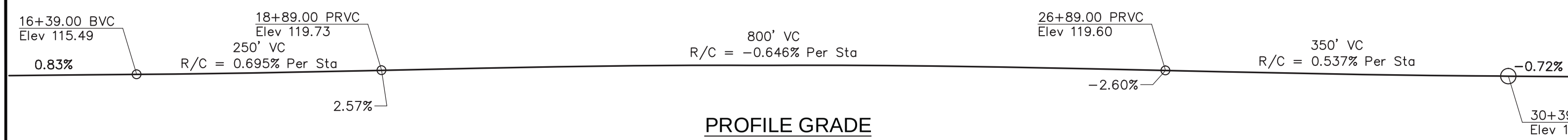
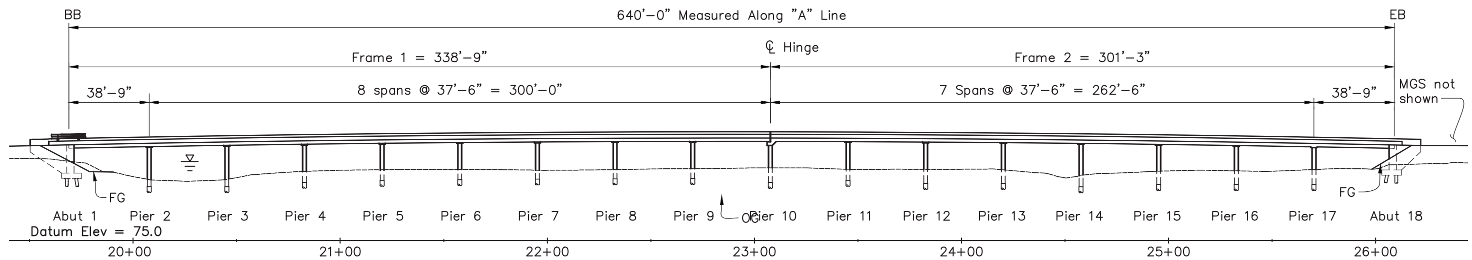
RANCHO CORDOVA, CA 95670
P: 916.368.9181



PROFILE GRADE
NO SCALE



ELEVATION
1" = 30'

INDEX TO PLANS

Sheet No.	Title
1	GENERAL PLAN
2	GENERAL NOTES
3	DECK CONTOURS
4	FOUNDATION PLAN No. 1
5	FOUNDATION PLAN No. 2
6	ABUTMENT LAYOUT
7	ABUTMENT DETAILS
8	PIER LAYOUT
9	PIER DETAILS
10	TYPICAL SECTION
11	DECK REINFORCEMENT No. 1
12	DECK REINFORCEMENT No. 2
13	TUBULAR BICYCLE RAILING DETAILS
14	LOG OF TEST BORINGS

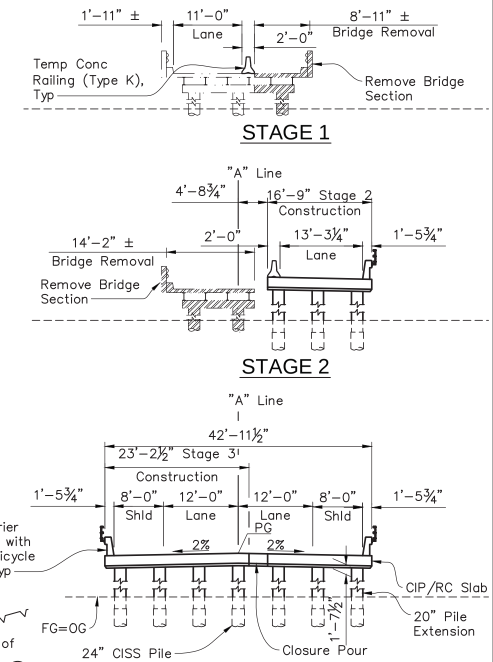
Notes & Legend:

1. Paint "Br No. 12CXXXX"
2. Paint "Ord Ferry Road Bridge"
3. Structural Concrete, Approach Slab (Type EQ)
4. MGS see Road Plans

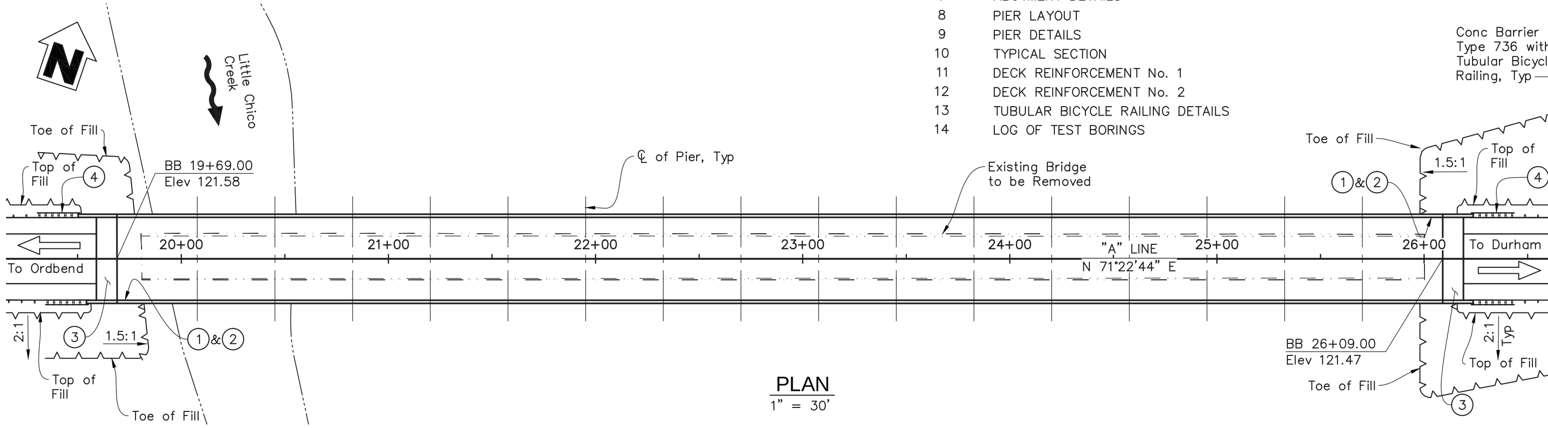
— · — Denotes Existing Bridge to be Removed

Indicates Highwater Elevation

Indicates Direction of Travel



TYPICAL SECTION
1" = 10'



PLAN
1" = 30'

DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	J. CRUZ	
DETAILS	P. KENNEY	
QUANTITIES		

LOAD & RESISTANCE FACTOR DESIGN — LIVE LOADING: HL93 W/"LOW-BOY" AND PERMIT DESIGN VEHICLE

	BY	CHECKED
LAYOUT	J. CRUZ	
SPECIFICATIONS	----	PLANS AND SPECS COMPARED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE: POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK

GENERAL PLAN

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

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REVISION DATES

SHEET 1 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Bridge\B02850a-a-gp01.dwg

USERNAME Patrickk
DATE PLOTTED 4/13/2018 9:20:18 AM
TIME PLOTTED 9:20:18 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		2	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER   DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Maxwell Katt
No. C74940
Exp. ....
CIVIL
STATE OF CALIFORNIA

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RANCHO CORDOVA, CA 95670
P: 916.368.9181

CALTRANS STANDARD PLANS DATED MAY 2015

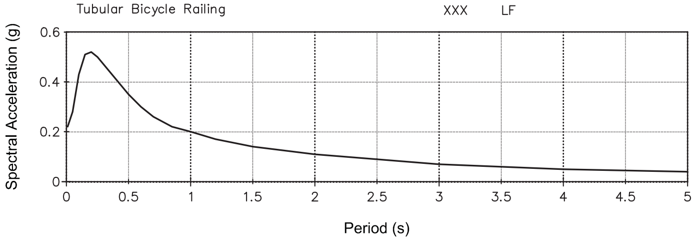
A3A	Abbreviations (sheet 1 of 3)
A3B	Abbreviations (sheet 2 of 3)
A3C	Abbreviations (sheet 2 of 3)
A10A	Legend – Lines and Symbols (sheet 1 of 5)
RSP A10B	Legend – Lines and Symbols (sheet 2 of 5)
A10C	Legend – Lines and Symbols (sheet 3 of 5)
A10D	Legend – Lines and Symbols (sheet 4 of 5)
A10E	Legend – Lines and Symbols (sheet 5 of 5)
A10F	Legend – Soil (Sheet 1 of 2)
A10G	Legend – Soil (Sheet 2 of 2)
A62C	Limits of Payment for Excavation and Backfill– Bridge
B0–1	Bridge Details
B0–3	Bridge Details
B0–13	Bridge Details
B2–8	Pile Details – Class 200
B6–21	Joint Seals (Maximum Movement Rating = 2")
RSP B9–4	Structure Approach – Type EQ (10)
RSP B9–5	Structure Approach – Slab Details
RSP B9–6	Structure Approach – Drainage Details
RSP B11–56	Concrete Barrier Type 736

Detail No.
Standard Plan Sheet No.

RSP
Detail No.
Revised Standard Plan Sheet No.

QUANTITIES

Structure Excavation (Bridge)	XXX	CY
Structure Excavation (Type D)	XXX	CY
Structure Backfill (Bridge)	XXX	CY
Furnish Piling (Class 200) (Alternative W)	XXX	LF
Drive Pile (Class 200) (Alternative W)	XXX	EA
Furnish 24" Cast–In–Steel Shell Concrete Pile	XXX	LF
Structural Concrete, Bridge Footing	XXX	CY
Structural Concrete, Bridge	XXX	CY
Structural Concrete, Bridge (Polymer Fiber)	XXX	CY
Joint Seal (MR=2")	XXX	LF
Bar Reinforcing Steel (Bridge)	XXX	LB
Bridge Removal	LUMP	SUM
Concrete Barrier Type 736	XXX	LF
Structural Concrete, Approach Slab (Type EQ)	XXX	CY
Tubular Bicycle Railing	XXX	LF



ACCELERATION RESPONSE SPECTRA CURVE

No Scale

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 6th edition with Interims through 2013, and the Caltrans Amendments, preface dated 2014.

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), version 1.7, dated April 2003.

DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE LOADING: HL93 and permit design load.

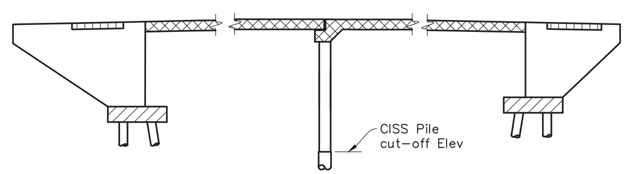
SEISMIC LOADING:
Soil profile V_{S30} =275 m/s
Moment Magnitude M_{max} =6.7
Peak Ground Acceleration = 0.25 g

CONCRETE:
f_y = 60,000 psi
f'_c = 3,600 psi
n = 8

STRUCTURAL STEEL:
Steel Pipe Piles: ASTM A847
CISS Steel Pipe Piles: ASTM A847

ABBREVIATIONS

SW Soil Wall



Structural Concrete, Bridge Footing

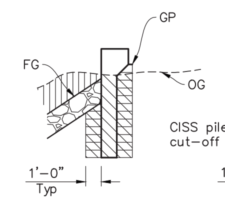
Structural Concrete, Bridge

Structural Concrete, Bridge (Polymer Fiber) (f'c=3.6 ksi at 28 days)

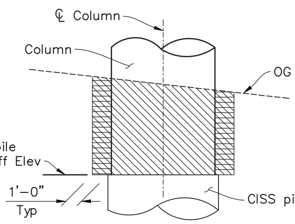
Structural Concrete, Approach Slab Type EQ(10)

CONCRETE STRENGTH AND TYPE LIMITS

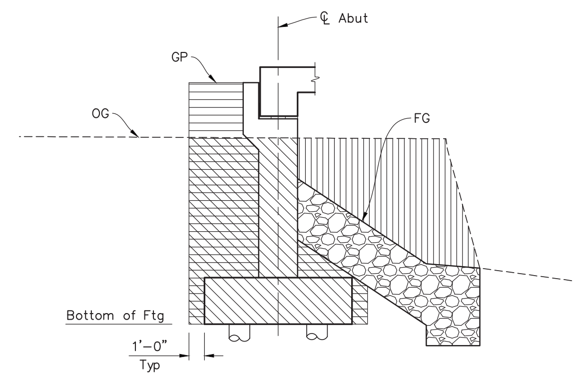
No Scale



WINGWALL TYPICAL SECTION



COLUMN TYPICAL SECTION



ABUTMENT TYPICAL SECTION

Indicates Structure Excavation (Bridge)
Indicates Structure Excavation (Type D) for all piers

Indicates Structure Backfill (Bridge)

Indicates Rock Slope Protection, see Road Plans

Roadway Excavation

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL

No Scale

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

DESIGN	BY J. CRUZ	CHECKED
DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK

GENERAL NOTES

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 2 OF 14

FILE S:\Client\BUTTE\B02–850 Ord Ferry\500–Design\505 – CADD Files\Bridge\B02850a–b–gnote.dwg

USERNAME Patrickk
DATE PLOTTED 4/13/2018 9:20:29 AM
TIME PLOTTED 9:20:29 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		3	XX

65% SUBMITTAL

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REGISTERED PROFESSIONAL ENGINEER Maxwell Katt No. C74940 Exp. CIVIL STATE OF CALIFORNIA

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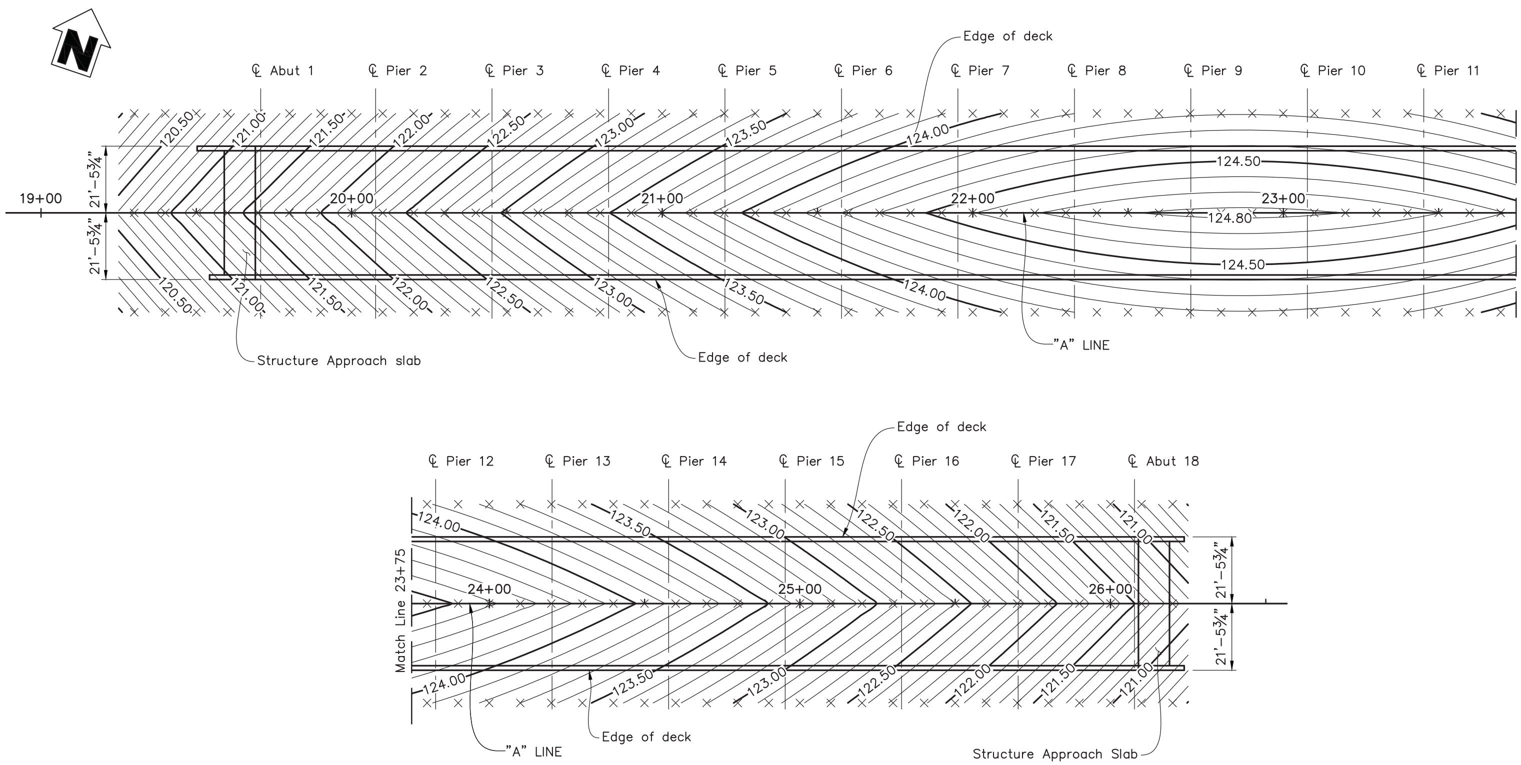
RANCHO CORDOVA, CA 95670
P: 916.368.9181



PLAN
1" = 20'

Notes:

X = 10' intervals along station line

Contours Intervals = 0.10'

Contours do not include camber

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY J. CRUZ	CHECKED
DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12C0052
POST MILE POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK

DECK CONTOURS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 3 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Bridge\B02850a-d-dc01.dwg

DATE PLOTTED 4/13/2018 9:20:38 AM
TIME PLOTTED 9:20:38 AM
USERNAME Patrickk

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		4	XX

65% SUBMITTAL

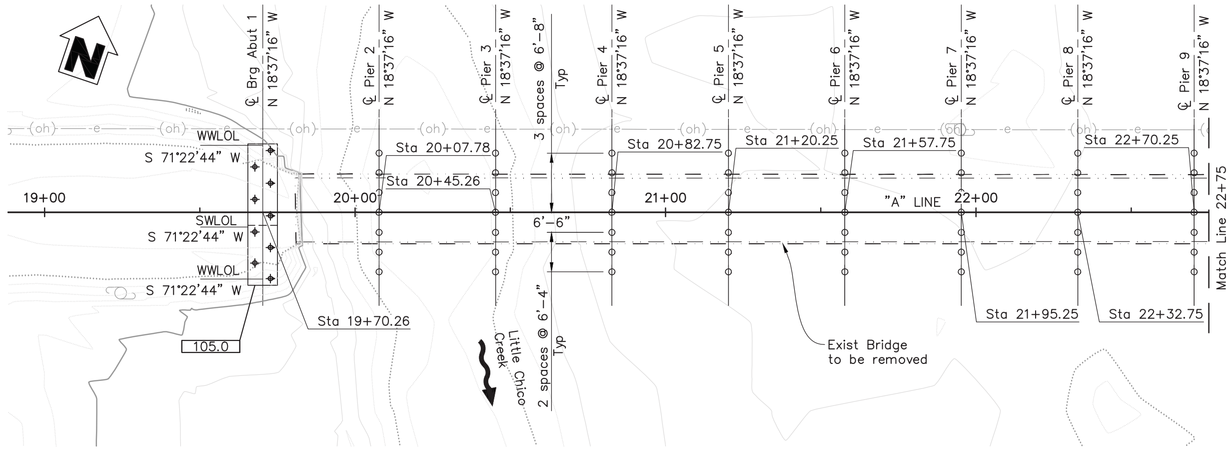
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER Maxwell Katt No. C74940 Exp. CIVIL STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181



HYDROLOGIC SUMMARY

Drainage area: 74.5 Square Miles

	Design Flood	Base Flood
Frequency (years)	100	50
Discharge (cubic feet per second)	3,900	3,600
Water Surface Elev at Bridge (ft)	117.3	116.9

Flood plain data based upon information available when the plans were prepared and are shown to meet Federal requirements. The accuracy of said information is not warranted by the County and interested or affected parties should make their own investigations.

SURVEY CONTROL DATA

NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION	STATION	OFFSET
1	2356019.771	6581813.714	113.46	B.C.M.	'A" 30+77.54	70.17' Rt
102	2355595.349	6580395.649	114.54	¾ REBAR	"A" 15+98.19	19.57' Rt
104	2355714.286	6580738.250	116.18	¾ REBAR	"A" 19+60.83	16.25' Rt
105	2355956.574	6581349.933	115.17	¾ REBAR	"A" 26+17.86	18.03' Lt

SCOUR DATA TABLE

SUPPORT No.	LONG-TERM (DEGRADATION AND CONTRACTION)	SHORT-TERM (LOCAL) SCOUR DEPTH (ft)
Abut 1	1.0	N/A
Pier 2	1.0	3.2
Pier 3	1.0	3.1
Pier 4	1.0	2.2
Pier 5	1.0	2.2
Pier 6	1.0	2.1
Pier 7	1.0	2.1
Pier 8	1.0	1.9
Pier 9	1.0	1.7

PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	NOMINAL DRIVING RESISTANCE (kips)	CUT-OFF ELEVATION (ft)
		COMPRESSION	TENSION				
Abut 1	Class 200 Alt W	420	N/A	55.0(1), 75.0(2)	55	420	105.42
Pier 2	24" CISS	400	N/A	40.0(1), 70.0(3)	40	400	101
Pier 3	24" CISS	360	N/A	45.0(1), 70.0(3)	45	360	101
Pier 4	24" CISS	360	N/A	45.0(1), 70.0(3)	45	360	102.5
Pier 5	24" CISS	360	N/A	45.0(1), 70.0(3)	45	360	104
Pier 6	24" CISS	360	N/A	40.0(1), 70.0(3)	40	360	104
Pier 7	24" CISS	360	N/A	40.0(1), 75.0(3)	40	360	104
Pier 8	24" CISS	360	N/A	40.0(1), 70.0(3)	40	360	104
Pier 9	24" CISS	400	N/A	40.0(1), 70.0(3)	40	400	104

Notes: Design Tip Elevation is controlled by the following demands:
(1) Compression, (2) Tension, (3) Lateral Loads.
Support locations denoted as follows:
(L) Left Structure, (M) Median Structure, (R) Right Structure

Legend:

- ⌖ Indicates 6V:1H battered Class 200 Alt W pipe pile
- ⌖ Indicates vertical pile Class 200 Alt W pipe pile
- ○ Indicates 24" CISS pile
- XXX.X Indicates bottom of footing elevation

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY J. CRUZ	CHECKED	
DETAILS	BY P. KENNEY	CHECKED	
QUANTITIES	BY	CHECKED	

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE: POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK
FOUNDATION PLAN NO. 1

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 4 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Bridge\B02850a-e-fpl01.dwg

USERNAME Juanc

DATE PLOTTED 4/13/2018 9:20:51 AM

TIME PLOTTED 9:20:51 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		5	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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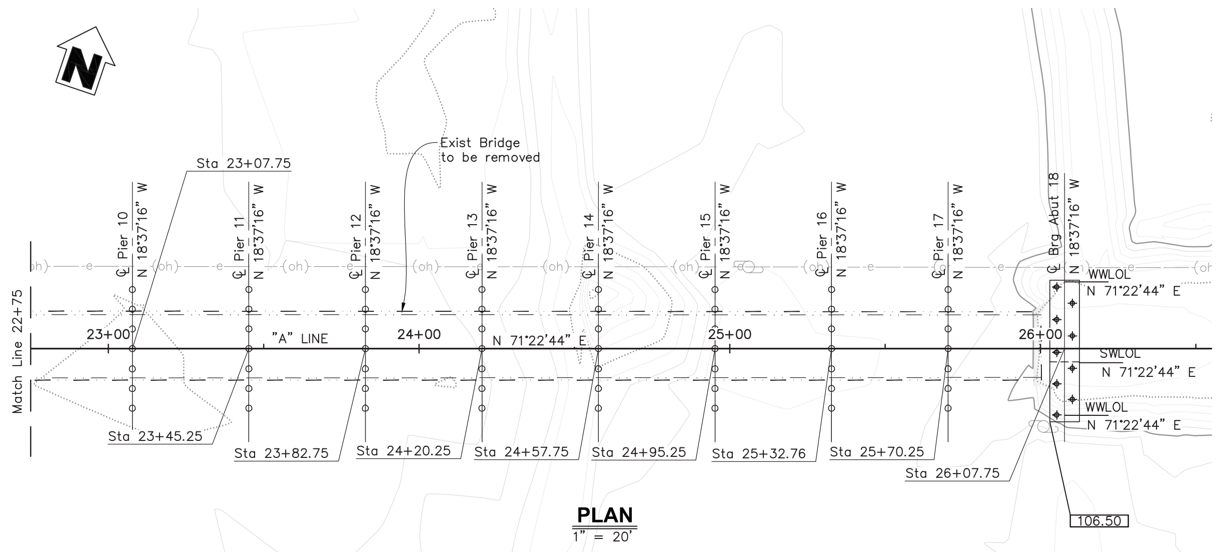
REGISTERED PROFESSIONAL ENGINEER Maxwell Katt No. C74940 Exp. .... CIVIL STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181



PLAN
1" = 20'

SCOUR DATA TABLE

SUPPORT No.	LONG–TERM (DEGRADATION AND CONTRACTION)	SHORT–TERM (LOCAL) SCOUR DEPTH (ft)
Pier 10	1.0	1.8
Pier 11	1.0	2.0
Pier 12	1.0	2.0
Pier 13	1.0	2.0
Pier 14	1.0	2.8
Pier 15	1.0	2.4
Pier 16	1.0	2.1
Pier 17	1.0	2.1
Abut 18	1.0	N/A

PILE DATA TABLE

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	NOMINAL DRIVING RESISTANCE (kips)	CUT-OFF ELEVATION (ft)
		COMPRESSION	TENSION				
Pier 10	24" CISS	330	N/A	45.0(1), 70.0(3)	45.0	330	103
Pier 11	24" CISS	380	N/A	50.0(1), 70.0(3)	50.0	380	104
Pier 12	24" CISS	360	N/A	50.0(1), 70.0(3)	50.0	360	102.5
Pier 13	24" CISS	360	N/A	50.0(1), 70.0(3)	50.0	360	102.5
Pier 14	24" CISS	360	N/A	50.0(1), 70.0(3)	50.0	360	102
Pier 15	24" CISS	360	N/A	50.0(1), 70.0(3)	50.0	360	102
Pier 16	24" CISS	360	N/A	50.0(1), 70.0(3)	50.0	360	102
Pier 17	24" CISS	400	N/A	45.0(1), 70.0(3)	45.0	400	102
Abut 18	Class 200 Alt W	320	N/A	60.0(1), 75.0(3)	60.0	320	106.92

Notes: Design Tip Elevation is controlled by the following demands:
(1) Compression, (2) Tension, (3) Lateral Loads.
Support locations denoted as follows:

Legend:

- Indicates 6V:1H battered Class 200 Alt W pipe pile
- Indicates vertical pile Class 200 Alt W pipe pile
- ○ Indicates 24" CISS pile
- XXX.X Indicates bottom of footing elevation

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY J. CRUZ	CHECKED
DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE
POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK
FOUNDATION PLAN NO. 2

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 5 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Bridge\B02850a-e-fpl02.dwg

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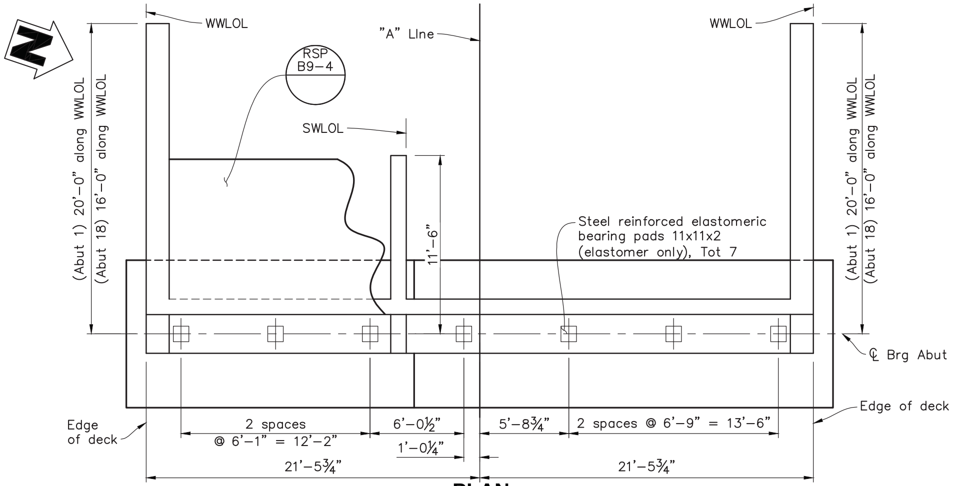
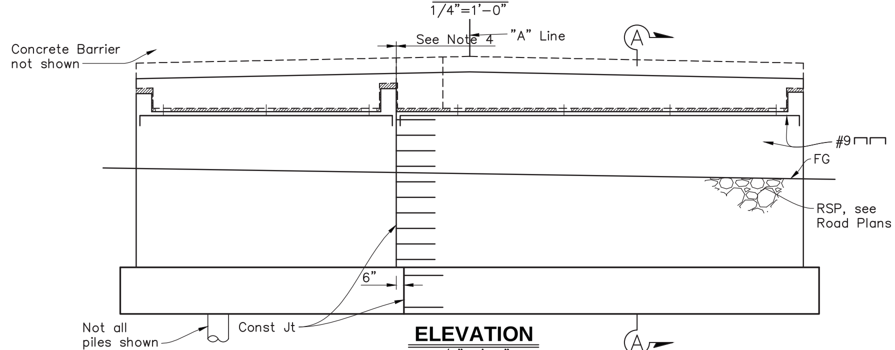
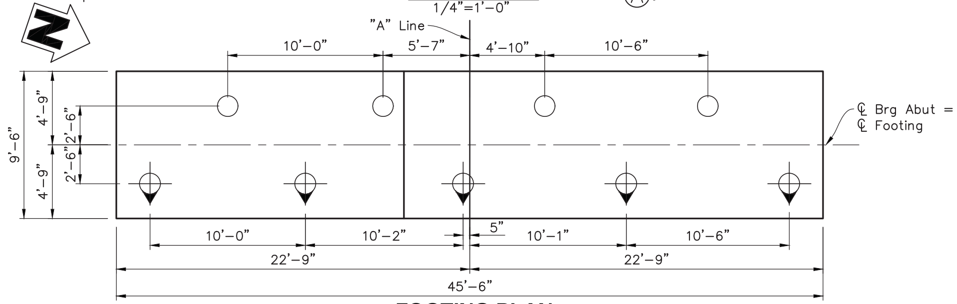
DATE PLOTTED 4/13/2018 9:21:04 AM
USERNAME Juanc



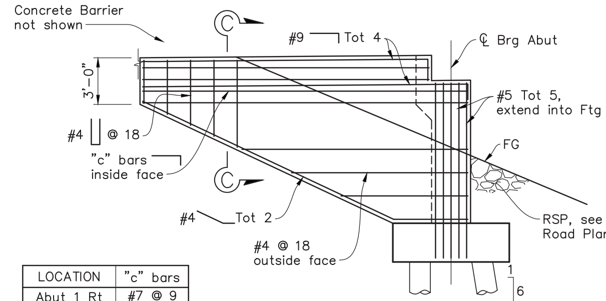
PLAN
1/4"=1'-0"



ELEVATION
1/4"=1'-0"

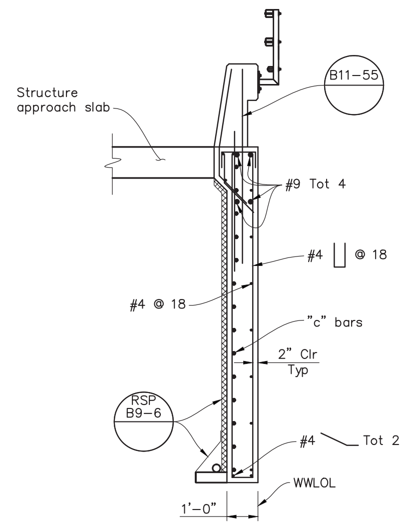


FOOTING PLAN
1/4"=1'-0"

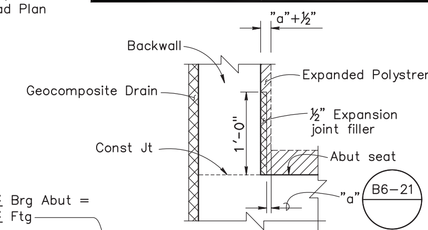


LOCATION	"c" bars
Abut 1 Rt	#7 @ 9
Abut 1 Lt	#9 @ 9
Abut 18 Rt	#7 @ 9
Abut 18 Lt	#7 @ 9

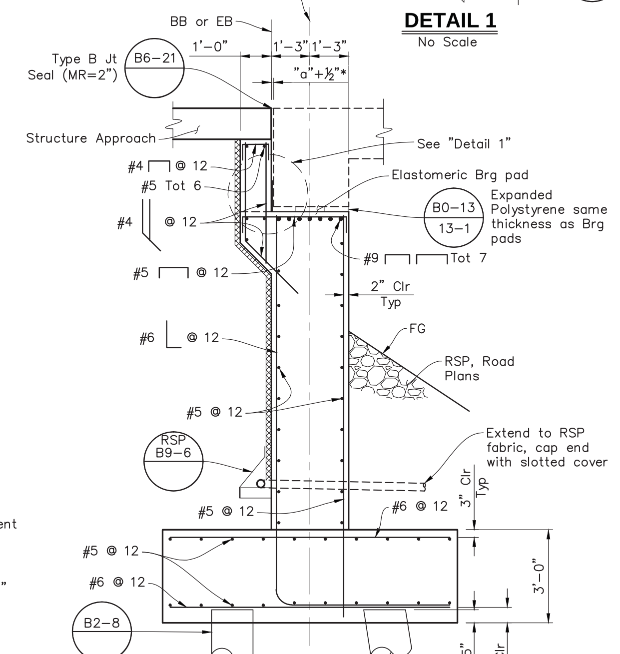
WINGWALL ELEVATION B0-1
1/4"=1'-0"



SECTION C-C
1/2"=1'-0"



DETAIL 1
No Scale



SECTION A-A
1/2"=1'-0"

Notes:

1. Abutment 1 shown, Abutment 2 similar.
2. For sections and details not shown, see "Abutment Details" sheet,
3. For Elastomeric Bearing Pad, see "Abutment Details" sheet.
4. Extend footing and abutment reinforcement 2'-6" beyond construction joint to lap with Stage II construction.

* For "a", see "Joint Seal Assembly (Maximum Movement = 2")" detail.

Legend:

Indicates 6V:1H battered pile   Indicates vertical pile

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		6	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER   DATE

PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
Maxwell Katt
No. C74940
Exp.
CIVIL
STATE OF CALIFORNIA

QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY J. CRUZ	CHECKED
DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE
POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK

ABUTMENT LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00   CONTRACT NO.: 0000

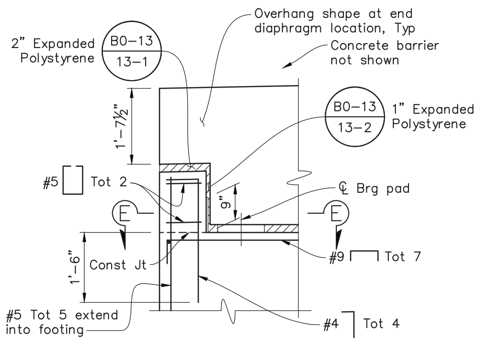
DISREGARD PRINTS BEARING EARLIER REVISION DATES   REVISION DATES   SHEET 6 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 – CADD Files\Bridge\B02850a-f-a01_l01.dwg

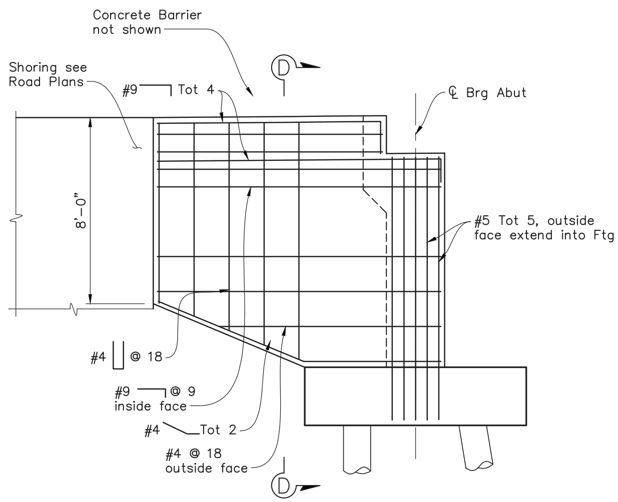
TIME PLOTTED 9:21:13 AM
DATE PLOTTED 4/13/2018 9:21:13 AM
USERNAME Juanc

Notes:

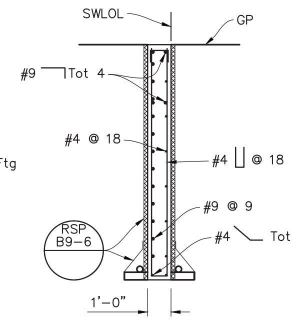
1. Abut 1 SW shown Abut 18 SW similar



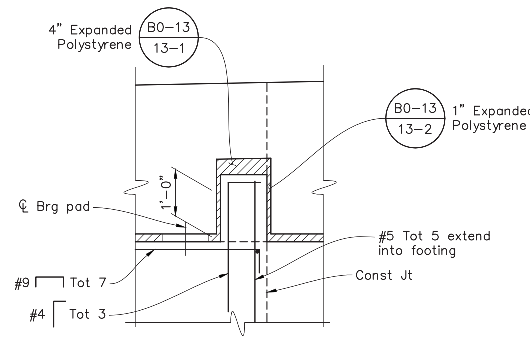
EXTERIOR SHEAR KEY
3/4" = 1'-0"



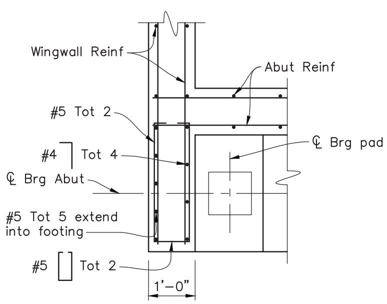
SOILWALL ELEVATION
3/8"=1'-0"



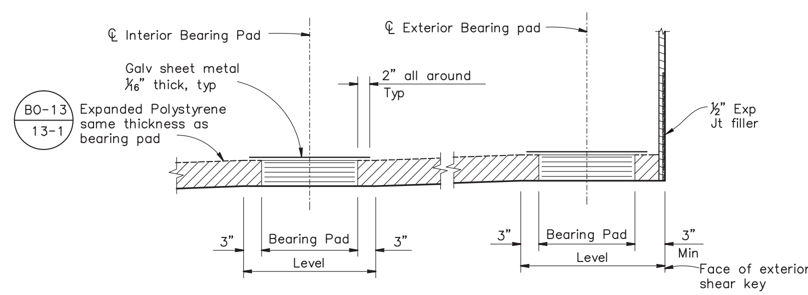
SECTION D-D
3/8" = 1'-0"



INTERIOR SHEAR KEY
3/4" = 1'-0"

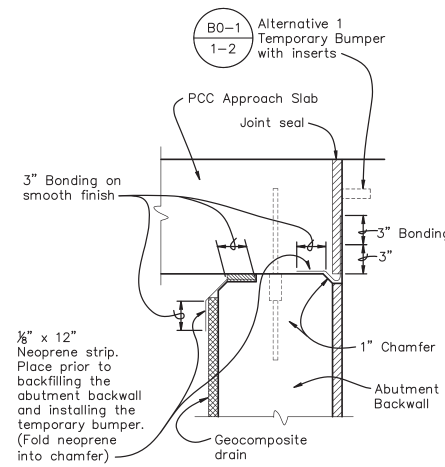


SECTION E-E
3/4" = 1'-0"



Note: Coat top of Bearing Pad with silicon grease prior to placing sheet metal.

BEARING PAD DETAIL
No Scale



JOINT PROTECTION DETAIL
No Scale

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		7	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Maxwell Katt No. C74940 Exp. CIVIL STATE OF CALIFORNIA

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QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY J. CRUZ	CHECKED
DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE: POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK
ABUTMENT DETAILS

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 7 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Bridge\B02850a-f-a01dt01.dwg

USERNAME Juanc DATE PLOTTED 4/13/2018 9:21:17 AM TIME PLOTTED 9:21:17 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		8	XX

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

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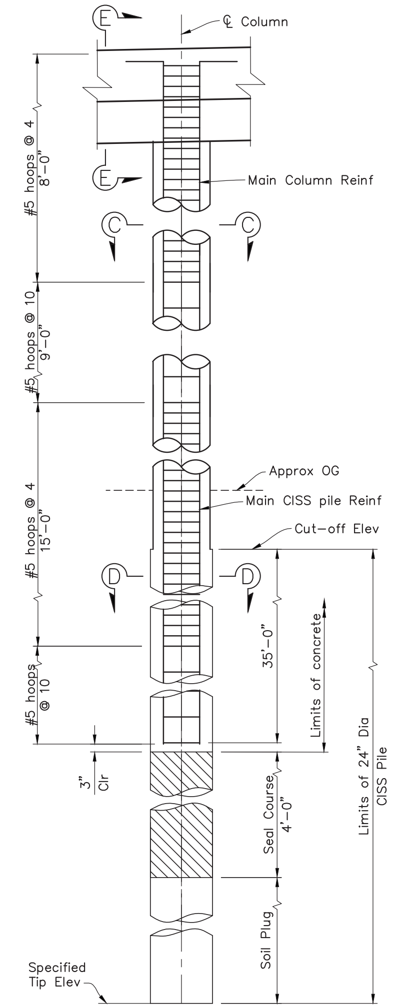
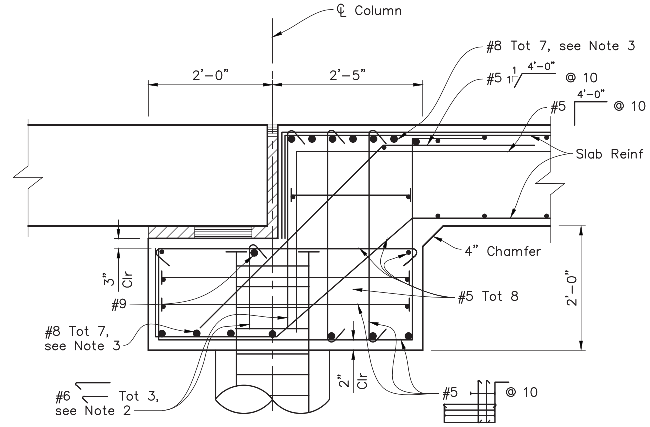


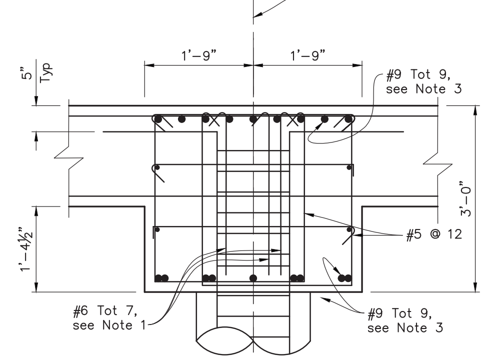
ELEVATION
1/2"=1'–0"



PIER 10
SECTION E-E
1"=1'–0"

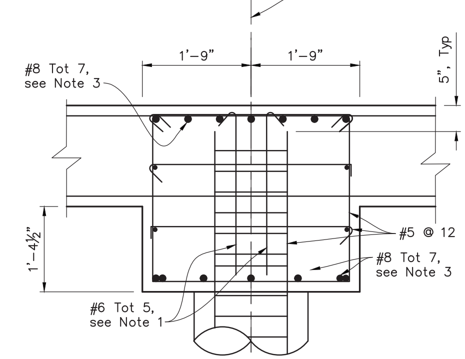
Notes:

1. Hook J bars onto longitudinal main slab reinforcement. All J bars to be placed directly above each column.
2. Hook J bars onto traverse main bent reinforcement. All J bars to be placed directly above each column.
3. All #8 and #9 bent reinforcement to be service spliced only.
4. All hoops shall be "Ultimate" butt spliced continuous.



Note: Pier 2 shown. Piers 8, 9, 11, 16 & 17 similar.

PIER 2
SECTION E-E
1"=1'–0"



Note: Pier 3 shown. Piers 3–7 & 12–15 similar.

PIER 3
SECTION E-E
1"=1'–0"

DESIGN OVERSIGHT
SIGN OFF DATE

DESIGN BY J. CRUZ CHECKED
DETAILS BY P. KENNEY CHECKED
QUANTITIES BY CHECKED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12C0052
POST MILE
POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK

PIER LAYOUT

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 00
PROJECT NUMBER & PHASE: 00 CONTRACT NO.: 0000

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET 8 OF 14

FILE S:\Client\BUTTE\B02-850 Ord Ferry\500-Design\505 - CADD Files\Bridge\B02850a-i-p01_lo01.dwg

TIME PLOTTED 9:21:22 AM
DATE PLOTTED 4/13/2018 9:21:22 AM
USERNAME Juanc

65% SUBMITTAL

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Maxwell Katt No. C74940 Exp. .... CIVIL STATE OF CALIFORNIA

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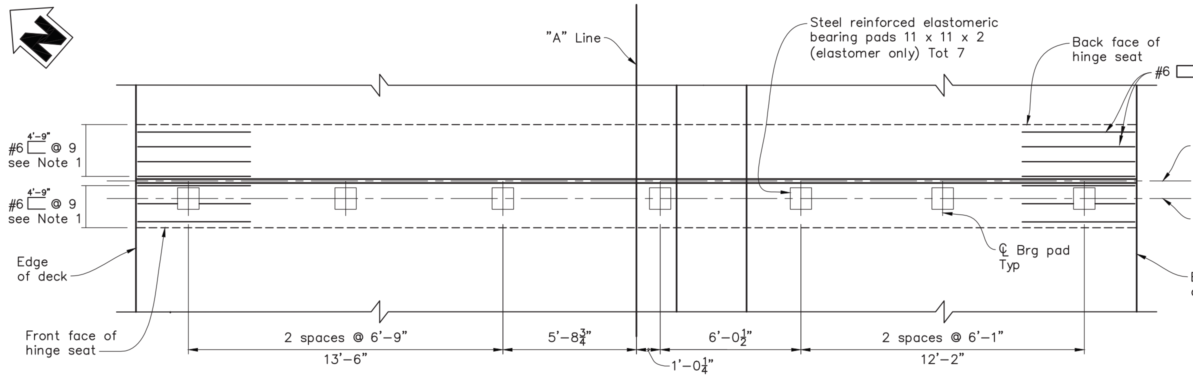
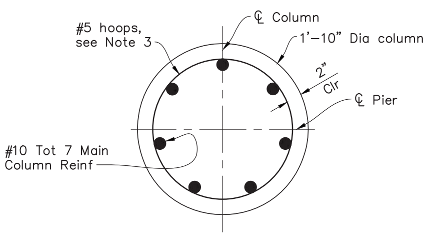
QUINCY ENGINEERING
11017 COBBLEROCK DRIVE, SUITE 100
RANCHO CORDOVA, CA 95670
P: 916.368.9181

Notes:

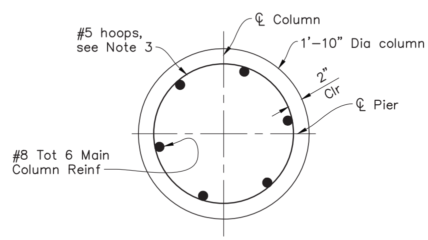
1. U–bars may be vertically bundled with the main bent reinforcement.
2. Hook "J" bars to main longitudinal reinforcement.
3. All hoops shall be "Ultimate" butt splice continuous.



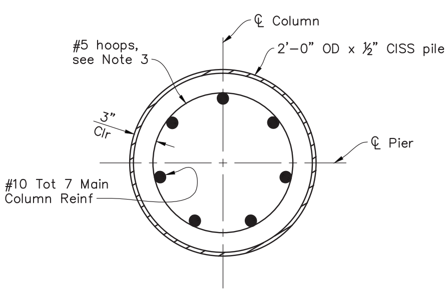
PIER 10 PLAN
3/8"=1'–0"



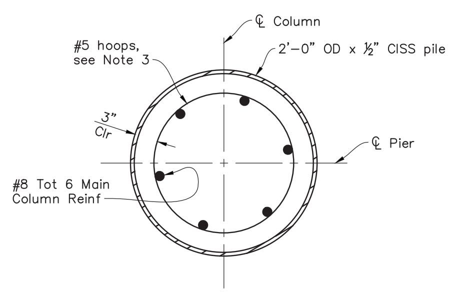
(Piers 2, 8, 9, 11, 16, 17)
SECTION C-C
1 1/2"=1'–0"



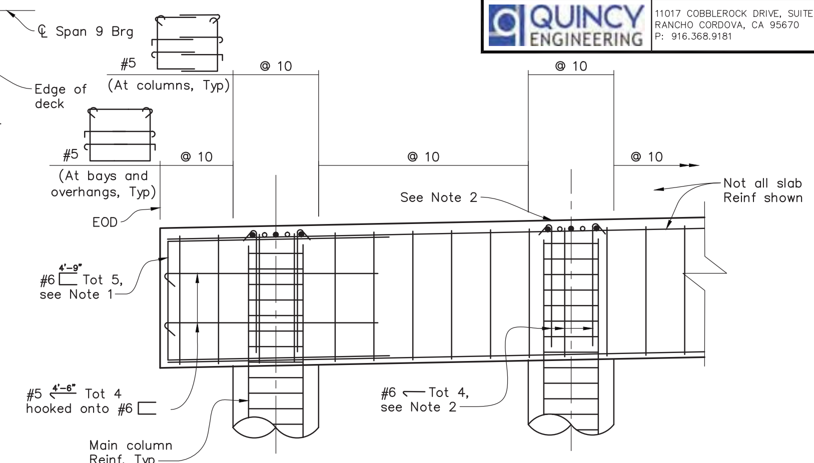
(Piers 3–7, 10, 12–15)
SECTION C-C
1 1/2"=1'–0"



(Piers 2, 8, 9, 11, 16, 17)
SECTION D-D
1 1/2"=1'–0"



(Piers 3–7, 10, 12–15)
SECTION D-D
1 1/2"=1'–0"



Note: Pier 3 shown, Piers 4–7 & 12–15 similar

PIER 3 CAP DETAIL
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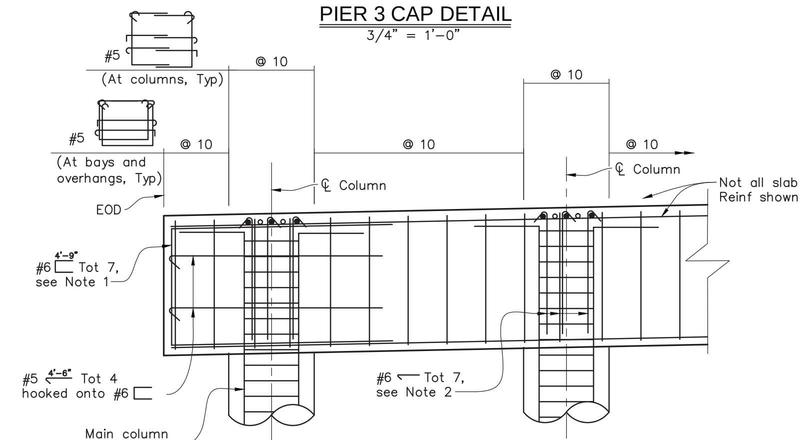

Note: Pier 2 shown, Piers 8, 9, 11, 16 & 17 similar

PIER 2 CAP DETAIL
3/4" = 1'–0"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	TOTAL PROJECT	10	XX

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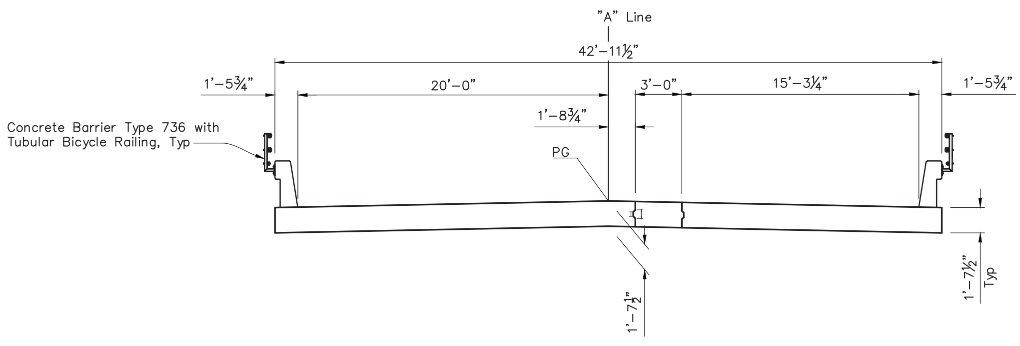

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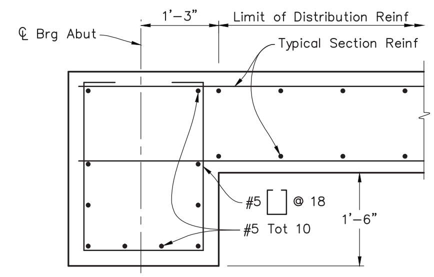

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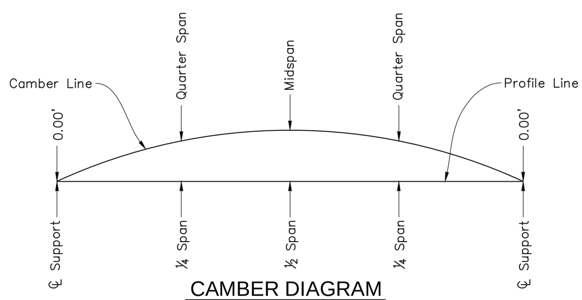
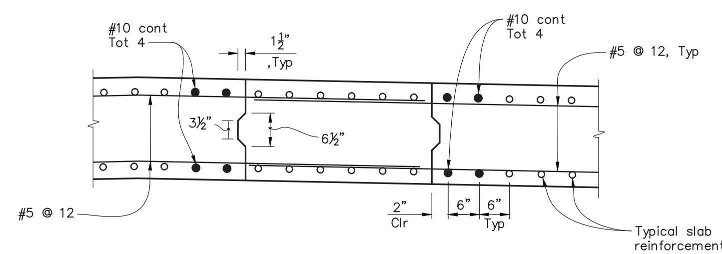


CAMBER DIAGRAM



CLOSURE POUR DETAIL
1"=1'–0"

	Span 1 (ft)	Span 2 (ft)	Span 3–7 (ft)	Span 8 (ft)	Span 9–10 (ft)	Span 11 (ft)	Span 12–15 (ft)	Span 16 (ft)	Span 17 (ft)
Quarter Spans	0.06	0.01	0.03	0.01	0.06	0.01	0.03	0.01	0.06
Mid Spans	0.09	0.02	0.04	0.02	0.09	0.02	0.04	0.02	0.09

CAMBER VALUE TABLE
No Scale

Note: Values do not include allowances for false work settlement.

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN	BY J. CRUZ	CHECKED
DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE
BUTTE COUNTY
DEPARTMENT OF TRANSPORTATION

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK
TYPICAL SECTION

DESIGN DETAIL SHEET (ENGLISH) (REV.7/16/10)

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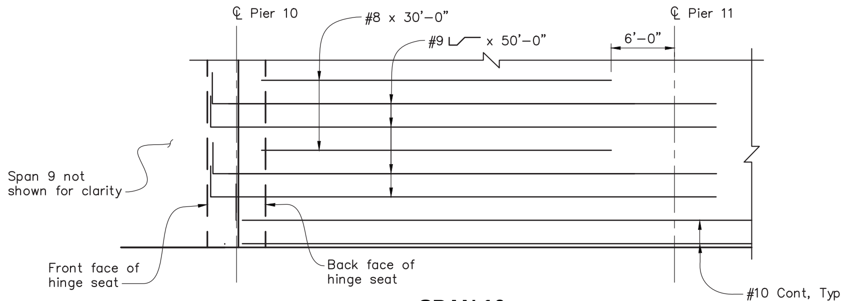
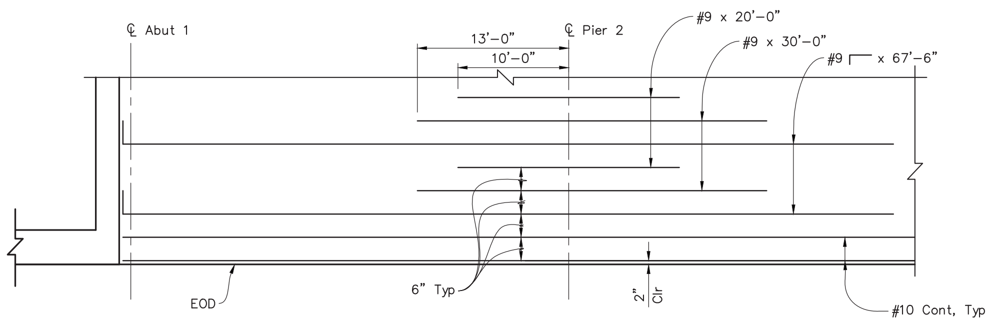
RANCHO CORDOVA, CA 95670
P: 916.368.9181

Notes:

1. For additional steel reinforcing, see "Deck Reinforcement No 2".

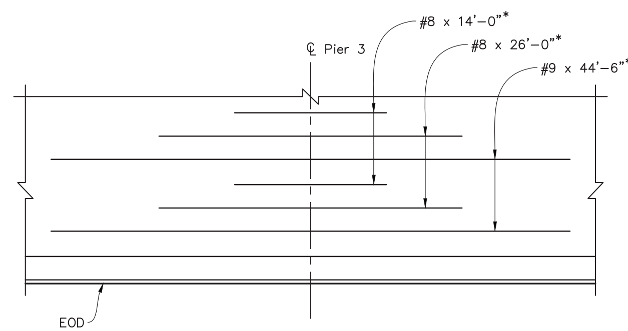


SPAN 10
BOTTOM SLAB REINFORCEMENT
No Scale



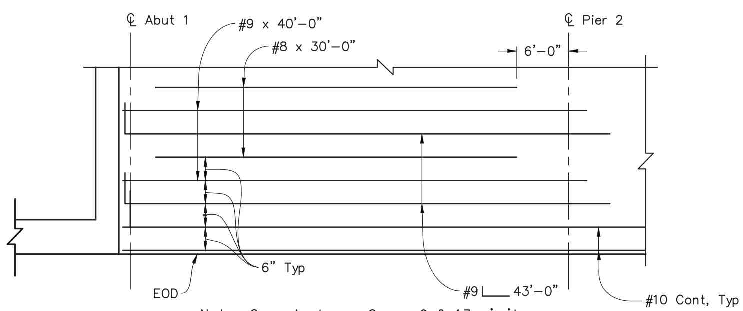
Note: Pier 2 shown, Piers 9, 11 & 17 similar

PIER 2
TOP SLAB REINFORCEMENT
No Scale



* Reinf is centered about the pier
Notes: Pier 3 shown, Pier 4-8 & 12-16

PIER 3
TOP SLAB REINFORCEMENT
No Scale



Note: Span 1 shown, Spans 9 & 17 similar

SPAN 1
BOTTOM SLAB REINFORCEMENT
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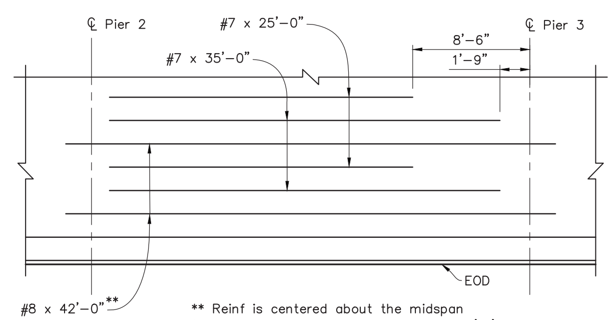

** Reinf is centered about the midspan
Note: Span 2 shown, Spans 3-8 & 11-16 similar

SPAN 2
BOTTOM SLAB REINFORCEMENT
No Scale

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DETAILS	BY P. KENNEY	CHECKED
QUANTITIES	BY	CHECKED

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DEPARTMENT OF TRANSPORTATION

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PROJECT ENGINEER

BRIDGE NO. 12C0052
POST MILE
POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK

DECK REINFORCEMENT NO. 1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR		12	XX

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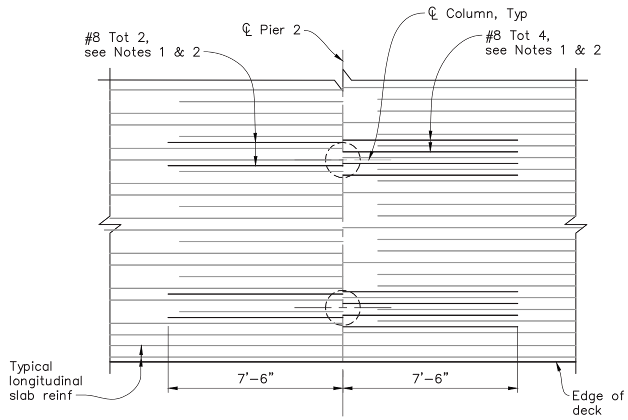
RANCHO CORDOVA, CA 95670
P: 916.368.9181

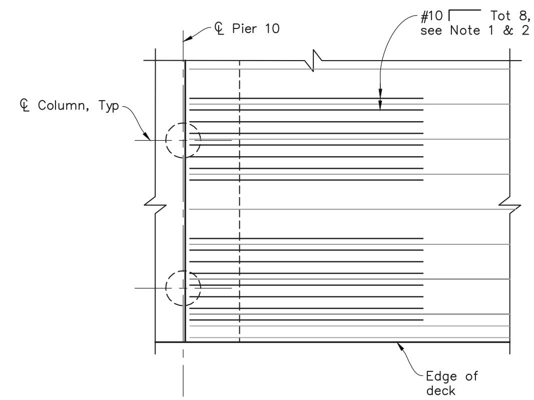
Notes:

1. All additional reinforcement steel groups to be centered about the piers.
2. All additional reinforcement steel to be placed within 2'-3" of centerline of column.



Note: Pier 2 shown, piers 3-9 & 11-17 similar

PIER 2
ADDITIONAL SLAB REINFORCEMENT
3/8"=1'-0"



PIER 10
ADDITIONAL SLAB REINFORCEMENT
3/8"=1'-0"

DESIGN OVERSIGHT	DESIGN	BY J. CRUZ	CHECKED	PREPARED FOR THE BUTTE COUNTY DEPARTMENT OF TRANSPORTATION
SIGN OFF DATE	DETAILS	BY P. KENNEY	CHECKED	
	QUANTITIES	BY	CHECKED	

Max Katt
PROJECT ENGINEER

BRIDGE NO. 12CXXXX
POST MILE
POST MILE

ORD FERRY ROAD OVER LITTLE CHICO CREEK
DECK REINFORCEMENT NO. 2

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PROJECT NUMBER & PHASE: 00
CONTRACT NO.: 0000

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REVISION DATES

SHEET 12 OF 14

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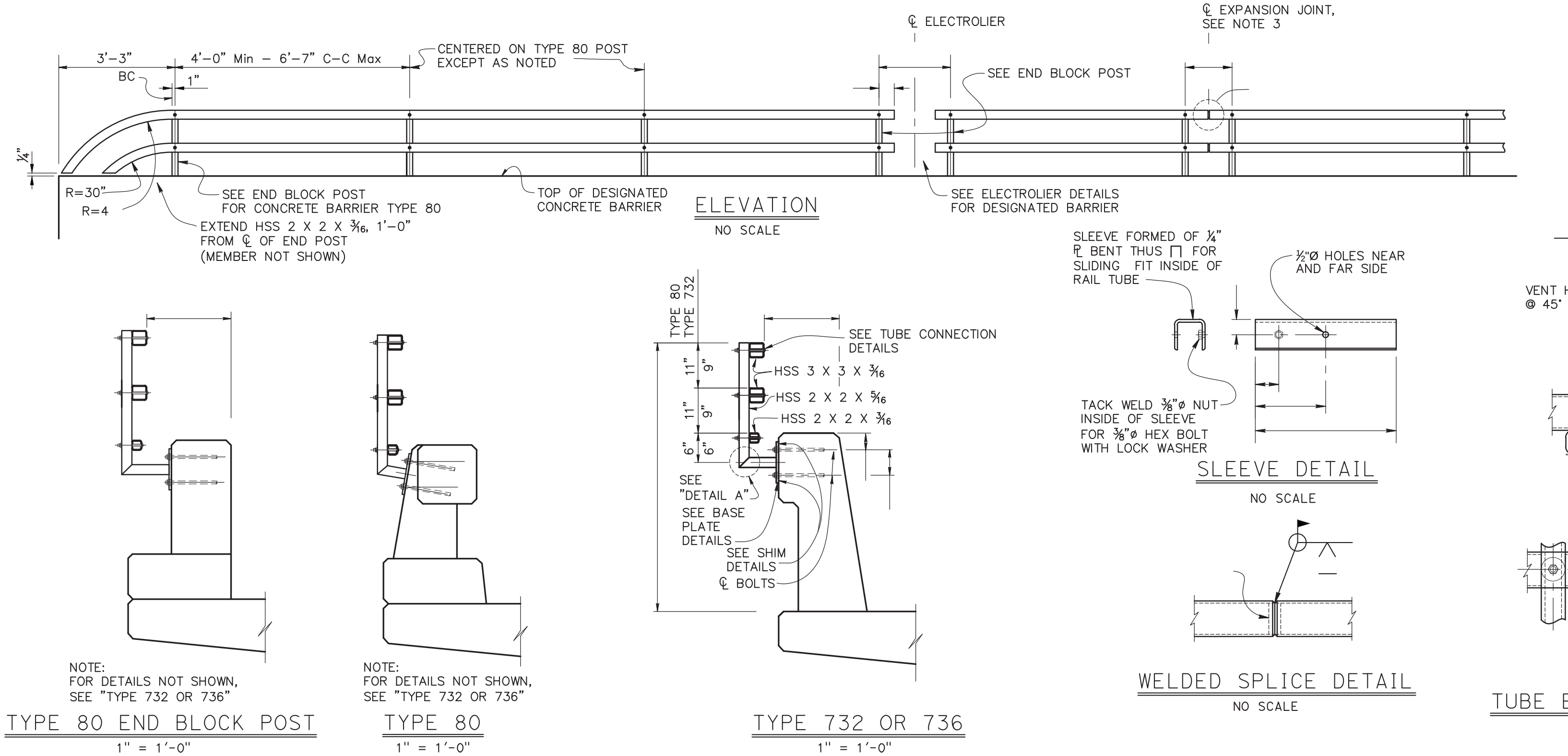

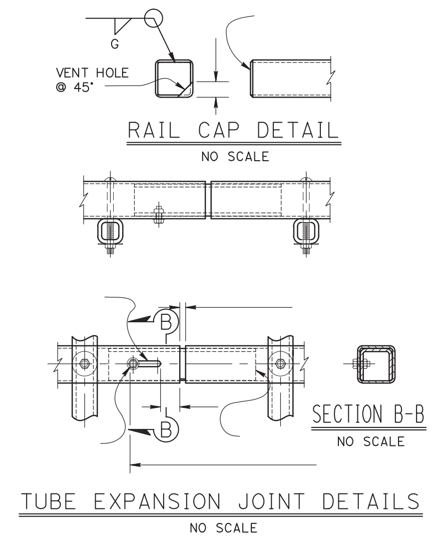

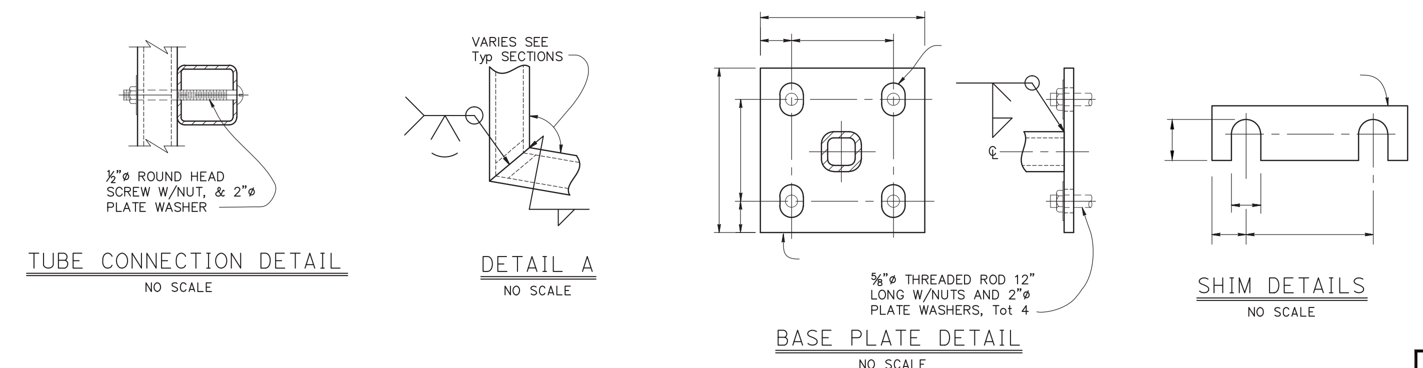

NOTES:

1. POST MUST BE NORMAL TO RAILING.
2. RAIL TUBES MUST BE SHOP BENT OR FABRICATED TO FIT HORIZONTAL CURVE WHEN RADIUS IS LESS THAN 950'.
3. TUBE EXPANSION JOINTS MUST BE LOCATED IN THE TUBES SPANNING DECK OR WALL JOINTS. INCREASE JOINT WIDTH IN TUBES TO MATCH EXPANSION JOINT WIDTH AND INCREASE SLEEVE LENGTH CORRESPONDINGLY.
4. TOP RAIL TUBE MUST BE CONTINUOUS OVER NOT LESS THAN TWO POSTS EXCEPT A SHORT POST SPACING IS PERMITTED NEAR DECK OR WALL JOINTS, ELECTROLIERS, OR OTHER RAIL DISCONTINUITIES AS NOTED.
5. SEE PROJECT PLANS FOR LIMITS OF TUBULAR BICYCLE RAILING.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But	CR	Post Mile Total Project	13	XX

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REGISTERED CIVIL ENGINEER — DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MAXWELL KATT — No. C74940 — Exp. — CIVIL — STATE OF CALIFORNIA

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The Registered Civil Engineer for the project is responsible for the selection and proper application of the component design and any modifications shown.

ORD FERRY ROAD OVER CHICO CREEK

CONCRETE BARRIER TYPE 80, 732 & 736

TUBULAR BICYCLE RAILING DETAILS

REVISED BRIDGE STANDARD DETAILS

xs16-035 — FILE NO.

October_2014 — APPROVAL DATE

The components of the Bridge Standard Details have been prepared under the responsible charge of the Technical Owner, a registered civil engineer in the State of California

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 12C0052
POST MILE B26312

Refer to: http://www.dot.ca.gov/hq/esc/techpubs/manual/bridgemanuals/bridge-standard-detail-sheets/index.html

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REVISION DATES: 8/2/12, 10-1-14, 7-14-16

SHEET 13 OF 14

ATTACHMENT B

NATURAL ENVIRONMENT STUDY

ORD FERRY ROAD AT LITTLE CHICO CREEK BRIDGE REPLACEMENT PROJECT

Natural Environment Study

Butte County, California
Section 36, Township 21N, Range 1W
Ord Ferry, CA Quadrangle
District 03-BUT-Ord Ferry
BRLS-5912(103)

March 2018

CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

Butte County, California

Section 36, Township 21N, Range 1W

Caltrans District 3

Federal Project Number BRLS-5912(103)

Prepared By: Jody Gallaway Date: 6/8/18

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Reviewed By: ______ Date: June 7, 2018

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Butte County Department of Public Works
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Recommended for Approved By: ______ Date: 7/10/18

Brooks Taylor, District Biologist
(530) 740-4807
North Region Environmental Planning M-1
Caltrans, District 3

Approved By: Laura Loeffler Date: 7/10/18

Laura Loeffler, Branch Chief
(530) 741-4592
North Region Environmental Planning M-1
Caltrans, District 3

Summary

Butte County (County) and the California Department of Transportation (Caltrans) are proposing to replace the Ord Ferry Road Bridge (No. 12C0242) over Little Chico Creek. The Ord Ferry Road at Little Chico Creek Bridge Replacement project (project) is located in a rural area of Butte County, approximately 4 miles west of Dayton Road near the Town of Dayton. A 2016 Caltrans appraisal showed the existing bridge to be Structurally Deficient with a sufficiency rating of 17.8. The purpose of the project is to replace the deficient bridge with a reliable structure to provide a safe crossing that meets current standards. In order to keep the bridge and roadway open during construction, a staged construction schedule will be necessary. This staged construction schedule will require 2 construction seasons with construction being suspended during the winter months.

Land within the Biological Survey Area (BSA) includes barren gravel roadway, annual grassland habitat, riverine, valley foothill riparian, and valley oak woodland habitat. During the site visit, 14 invasive plant species recognized by the U.S. Department of Agricultural (USDA) Natural Resource Conservation Service (NRCS) and/or the California Invasive Plant Council (Cal-IPC) were identified within the BSA. Special-status species that have the potential to occur within the BSA include a variety of bird and raptor species protected by the Migratory Bird Treaty Act (MBTA), the federally threatened and state endangered western yellow-billed cuckoo (*Coccyzus americanus*), the federal and state threatened giant garter snake (GGS) [*Thamnophis gigas*], the state threatened Swainson's hawk (*Buteo swainsoni*), the tri-colored blackbird (*Agelaius tricolor*) which is listed as a candidate species by the state and is a state species of special concern, and 2 state species of special concern including the western pond turtle (*Emys marmorata*) and western red bat (*Lasiurus blossevillii*). Also, during sustained high flows, there is potential for federal and state listed anadromous fish to enter the streams within the BSA including the Central Valley (CV) steelhead (*Oncorhynchus mykiss*) and Central Valley (CV) spring run Chinook salmon (*Oncorhynchus tshawytscha*).

With the implementation of avoidance and minimization measures, the project will have no effect on the western yellow-billed cuckoo; however, the project may affect, and is likely to adversely affect CV steelhead, CV spring-run Chinook salmon, and GGS. Appropriate steps to prevent the spread of invasive and noxious plants and their seeds to and from the project site will be implemented. Mitigation for impacts to jurisdictional waters of the U.S. (WOTUS) will be addressed through the purchase of credits at a U.S. Army Corps of

Engineers (Corps) approved mitigation bank or payment to a Corps approved in-lieu fund. Additionally, a CDFW §1602 Streambed Alteration Agreement, Regional Water Quality Control Board (RWQCB) §401 Water Quality Certification permit, Central Valley Flood Protection Board (CVFPB) encroachment permit, and a Corps Nationwide 14 §404 permit shall be obtained for the project. In addition, all trees removed with a diameter at breast height (DBH) of four (4) inches or greater will be mitigated for on-site at a 3:1 ratio and all disturbed soils will be seeded using a native grass seed mix.

Table of Contents

1 Introduction 1
Project History 1
Project Description 4
Biological Study Area: 4
Proposed Bridge Structure: 4
Roadway Approaches: 6
In-Channel Work and temporary access road: 6
Staging Areas, Rights of Way, and Utilities: 8
Construction Equipment and Schedule: 8
wildlife passage: 8
2 Study Methods 9
Regulatory Requirements 9
Studies Required 16
Personnel and Survey Dates 17
Biological Habitat Assessment 17
Botanical Habitat Assessment 18
Protocol Level Rare Plant Survey 18
Agency Coordination and Professional Contacts 19
Limitations That May Influence Results 19
3 Results: Environmental Setting 20
Description of the Existing Biological and Physical Conditions 20
Riverine 22
Valley Foothill Riparian 22
Deciduous Orchard 22
Annual Grassland 23
Regional Species and Habitats and Natural Communities of Concern 23
4 Results: Biological Resources, Discussion of Impacts and Mitigation 30
Habitats and Natural Communities of Special Concern 30
Special Status Plant Species 30
Special Status Animal Species Occurrences 34
Anadromous Fish 34
Giant Garter Snake 39
Western Pond Turtle 44
Swainson's Hawk 45
Tri-colored blackbird 47
Western Yellow Billed Cuckoo 48
Migratory Birds 50
Western Red Bat 53
5 Results: Permits and Technical Studies for Special Laws or Conditions 55
Federal Endangered Species Act Consultation Summary 55
Federal Fisheries and Essential Fish Habitat Consultation Summary 55
California Endangered Species Act Consultation Summary 55
Wetlands and Other Waters Coordination Summary 56
Invasive Species 56
Wildlife Migratory Corridor 57
6 References 62

List of Figures

Figure 1. Regional Location Map 2
Figure 2. Project Location Map 3
Figure 3. Biological Study Area Map 5
Figure 4. CNDDB Occurrences Map 10
Figure 5. Habitat Map 21
Figure 6. GGS Habitat Impacts Map 40

List of Tables

Table 1. Impacts to Waters of the United States 7
Table 2. Listed and Candidate Species Potentially Occurring or Known to Occur in the Ord Ferry Road at Little Chico Creek Bridge Replacement Project BSA. 24
Table 3. GGS Permanent and Temporary Impacts to Upland and Aquatic Habitat and Total Acres to be Mitigated or Required Action. 43
Table 4. Invasive Plant Species Identified within the BSA. 58

List of Appendices

Appendix A........ Species Lists
Appendix B........ Species Observed During the 2017 Site Visits
Appendix C........ Draft Delineation of Waters of the US Map
Appendix D........ Project Location Photos

List of Abbreviated Terms

ADT	Average Daily Traffic
APE	Area of Potential Effect
BCAG	Butte County Association of Governments
BSA	Biological Study Area
BMP	Best Management Practices
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CISS	Cast-In-Steel-Shell
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	United States Army Corps of Engineers
County	Butte County
CRPR	California Rare Plant Rank
CV	Central Valley
CWA	Clean Water Act
DBH	Diameter at Breast Height
DPS	Distinct Population Segment
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FRFH	Feather River Fish Hatchery
GGS	Giant Garter Snake
GIS	Geographic Information System

HBP	Highway Bridge Program
IPaC	Information for Planning and Conservation
MBTA	Migratory Bird Treaty Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Quality Act
NES	Natural Environmental Study
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
OHWM	Ordinary High Water Mark
PCE	Primary Constituent Element
RPW	Relatively Permanent Water
RSP	Rock Slope Protection
RWQCB	Regional Water Quality Control Board
SPP	Spill Prevention Plan
SSC	State Species of Special Concern
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOTUS	Waters of the United States

1 Introduction

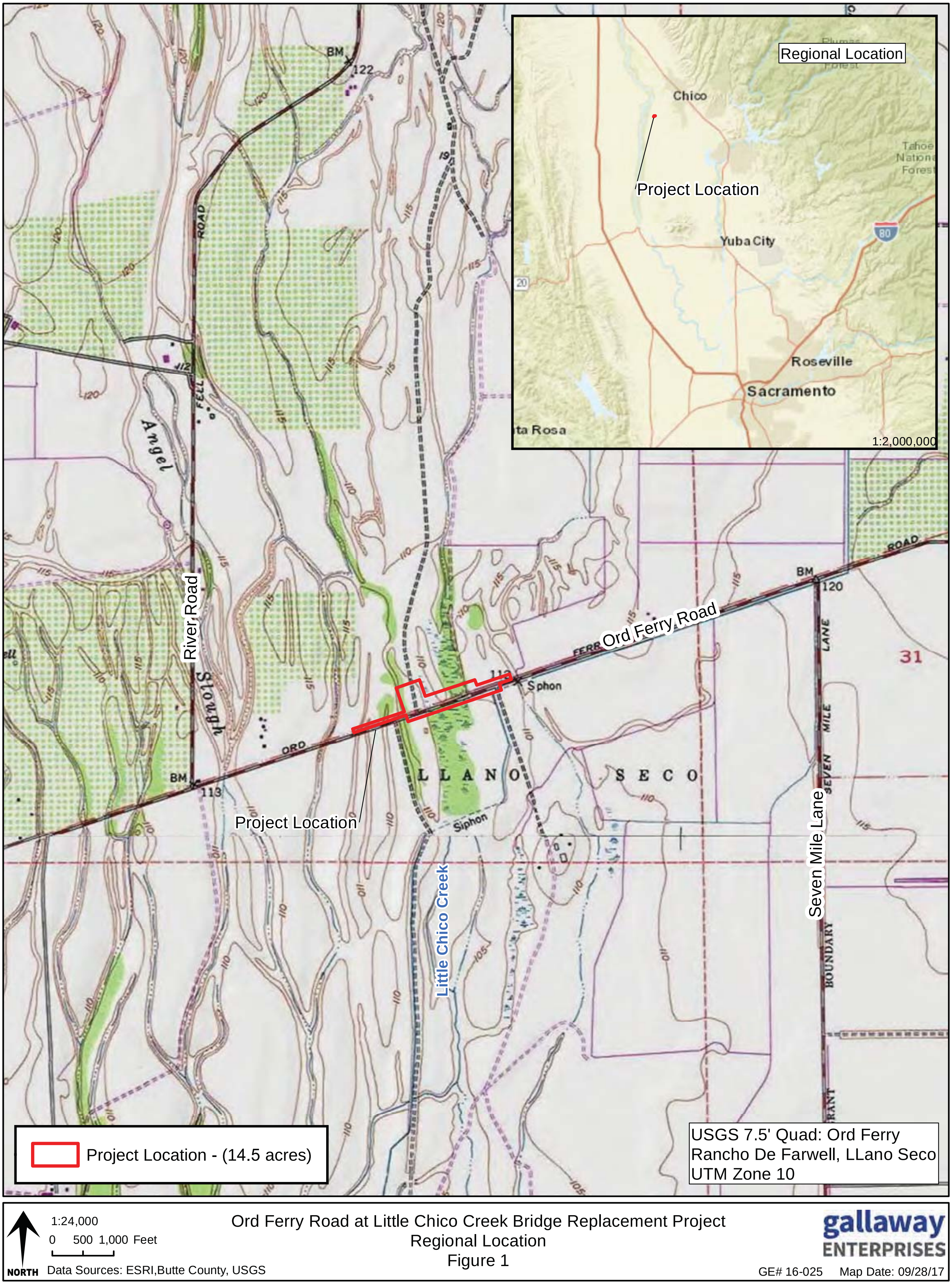
The purpose of the Ord Ferry Road at Little Chico Creek Bridge Replacement project (project) is to replace the structurally deficient Ord Ferry Road Bridge over Little Chico Creek (Bridge No. 12C-0242) with a reliable structure to provide a safe crossing that meets current standards (**Figure 1: Regional Location Map, Figure 2: Project Location Map)**. The purpose of this Natural Environment Study (NES) is to evaluate potential project impacts to special status species and their habitats within the project vicinity.

Project History

The Project is located in Butte County, California on Ord Ferry Road which is a major thoroughfare between Butte and Glenn Counties. Traffic is primarily local agricultural though there is some interregional traffic between the City of Chico and points south. Federal transportation funding will account for 88.53% of the funds for this project and 11.47% will be provided by local match as administered by Caltrans. Caltrans will be the lead agency for NEPA compliance through delegation from FHWA and the County, the owner of the project, will be the lead agency for CEQA compliance. Butte County will be the maintaining agency of the proposed bridge structure.

The existing 620'± long bridge is composed of continuous steel stringers staggered over thirty-three short spans less than 19'± long each and carrying traffic on a reinforced concrete deck with concrete curb and metal beam guard railing. The substructure supports are several different element types varying in age and condition including reinforced concrete pier walls, reinforced concrete columns and cast-in-steel shell column extensions. It appears that the current bridge was constructed by connecting and supplementing two separate shorter length bridges for spans 1-5 and spans 19 through 33. Original abutments and bents were retained and incorporated, intermediate abutments were converted into Piers 6 and 19, and additional supports added to connect the bridges for span 6 through 18.

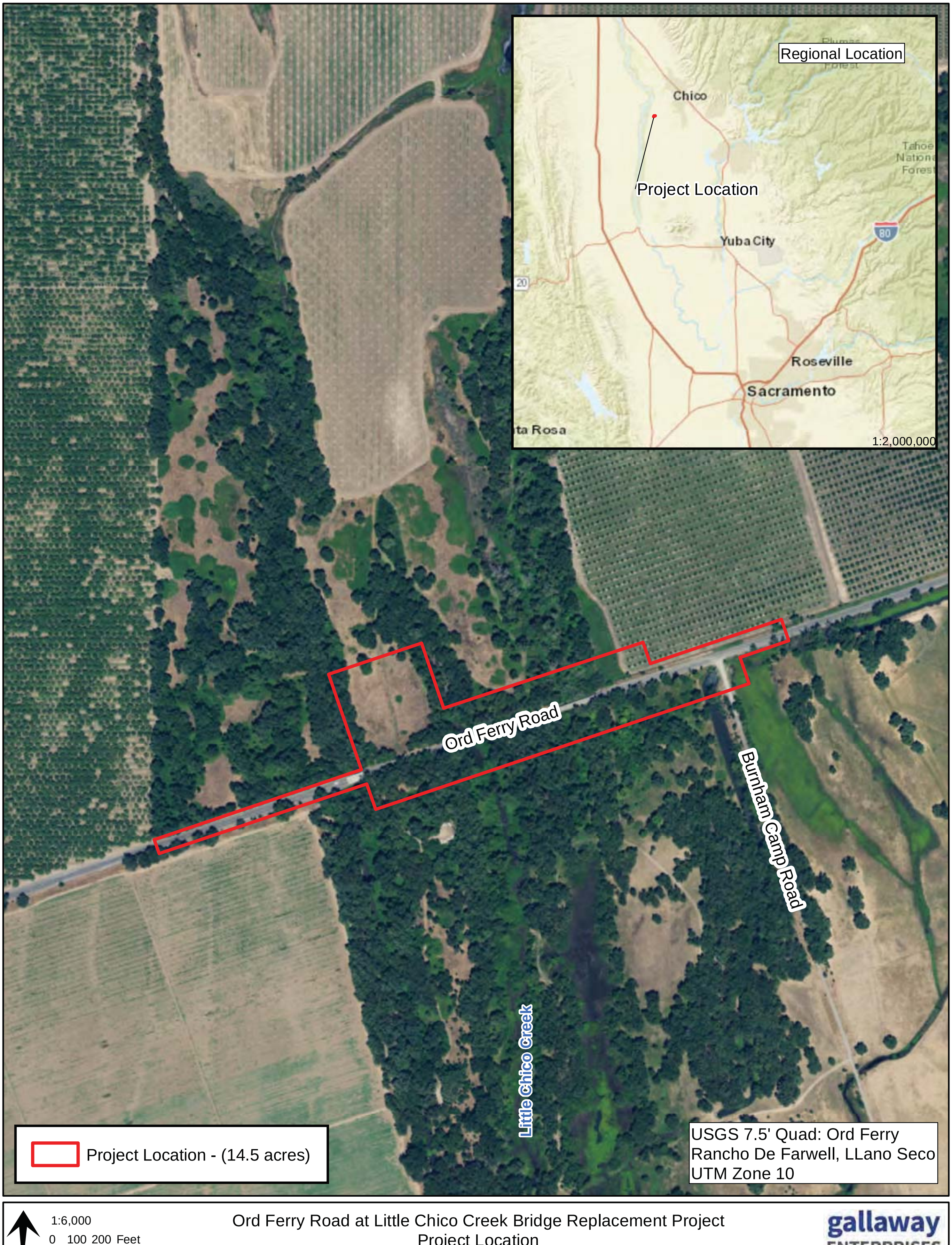
As-built plans date the current superstructure to 1949 when new steel stringers, continuous over two spans and staggered at every other bent, were placed over existing steel bent beams. A center reinforced concrete column support was added to each bent to supplement the older steel jacketed concrete columns. Foundation types for all the substructure elements is unknown but appears likely to be some form of spread footing. It is also noteworthy that there are several exposed, older driven timber piles within the creek



Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Regional Location
Figure 1

gallaway ENTERPRISES

GE# 16-025 Map Date: 09/28/17



Data Sources: ESRI,Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Project Location
Figure 2

gallaway ENTERPRISES

GE# 16-025 Map Date: 12/06/17

throughout the length of the existing bridge. This timber piles could have been from an even older bridge or possibly remaining from previous construction activities. A 2016 Caltrans appraisal showed the existing bridge to be Structurally Deficient with a sufficiency rating of 17.8 making it eligible for replacement with federal transportation funds administered by Caltrans. This bridge has the lowest Sufficiency Rating of any bridge in Butte County and has been programmed for replacement.

The horizontal alignment of Ord Ferry Road at the project location is relatively straight and traverses through the riparian area of Little Chico Creek. The existing roadway and bridge is 20’ wide which is far too narrow for the 3,437 ADT that was measured by the Butte County Association of Governments (BCAG) in 2013/2014 west of Aguas Frias Road. The existing bridge has a long history of traffic issues between oncoming vehicles. Local farmers as well as Butte County Public Works staff have identified incidents where oncoming vehicles have collided with farm implements, with large semi-trucks, and with other oncoming traffic. Farm implements routinely take up 16’ of the 20’ width on this 620’ long bridge making it critical that oncoming traffic recognize and yield to avoid a collision.

Project Description

BIOLOGICAL STUDY AREA:

The Biological Study Area (BSA) is the area in which biological surveys are conducted and where all construction and staging will occur (**Figure 3: Biological Study Area**). The BSA for this project is identical to the area of potential effect (APE) for the project and encompasses a total of 14.5 acres.

PROPOSED BRIDGE STRUCTURE:

The proposed new bridge will replace the existing structures on the current, existing alignment. It will be approximately 640 feet long by approximately 43 feet wide and carry 2 twelve-foot traffic lanes and 2 eight-foot shoulders. The cast-in-place reinforced concrete slab bridge is expected to be composed of seventeen spans arranged in two frames with an intermediate hinge. The intermediate supports are expected to be small diameter pile extensions founded on cast-in-steel-shell (CISS) piles. The CISS pile shafts will be driven utilizing a crane and pile hammer. Bridge abutments are anticipated to be reinforced concrete seat style abutments founded on driven 16-inch piles; likely steel H-piles or

1:4,800
0 100 200 Feet
NORTH
Data Sources: ESRI,Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Biological Survey Area
Figure 3

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GE# 16-025 Map Date: 12/06/17

small diameter steel pipe piles. Impact pile driving will be required for installation for these bridge abutment piles. The bridge superstructure construction within the floodplain will utilize cast-in-place methodology with traditional concrete forms and temporary supports consisting of falsework beams, timber bents, and timber pads. Falsework construction will be relatively simple due to the short 37.5' spans on the new bridge and with Little Chico Creek being relatively dry during the construction season. The Contractor will be required to submit detailed falsework plans and calculations for approval of the Engineer before construction any portions of the falsework or temporary structures.

ROADWAY APPROACHES:

Ord Ferry Road will be widened to 40 feet for a length of approximately 400' feet to the west and 500' to the east of the proposed bridge. At both ends of the bridge, the road surface (Asphalt Concrete pavement) will be tapered to match the existing cross section. The new approach roadway will conform to the existing Hogsback Drain Bridge located 400' southwest of the existing Ord Ferry bridge. Fill will need to be imported to provide for a smooth vertical transition from the new bridge deck level to the existing roadway grade. Existing electrical, telephone, and fiber optic utilities located on the west side of the Ord Ferry Road will need to be relocated as part of the project.

Staging of the bridge and roadway approach construction is required to keep the road open to conventional traffic during construction operations. The first construction stage would reduce the existing bridge to a single 11' traffic lane and demolish a portion of the existing bridge. A portion of the new bridge would then be constructed with a lane approximately 13' wide provided for traffic to be moved onto the new bridge portion. The remainder of the existing bridge would be removed with the remainder of the new bridge constructed in its place. This staged bridge construction alternative would require two construction seasons and approximately 18 months of single lane traffic control utilizing a temporary traffic signal system.

IN-CHANNEL WORK AND TEMPORARY ACCESS ROAD:

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection (RSP) is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 25 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high water mark (OHWM) will be a portion of the new bridge supports and removal of the old bridge supports. A quantity estimate of both temporary fill materials required for construction and permanent features within Little Chico Creek in **Table 1**. The superstructure of the new bridge will be positioned to allow 100 year flood flows to pass under the new bridge with a minimum of 2 feet of freeboard per the Central Valley Flood Protection Board criteria. The Contractor will need to construct a temporary access road just north of the existing bridge to accommodate construction vehicle traffic and oversized farm equipment during the staged bridge construction. Farm equipment greater than the Stage 1 and Stage 2 bridge width regularly use Ord Ferry Road during the typical construction season and will need to be detoured through the construction zone. The more conventional county road detour for these oversized vehicles is approximately 18 miles and would include travel through the Chico city limits and is not feasible.

The temporary access road will need to be installed from May 1st through October 31st in both seasons of construction to complete the project in two construction seasons. As part of the temporary access road a clear water diversion using appropriately sized culverts and clean river gravel will be installed in Little Chico Creek. Shorter durations for the temporary access road will result in a third season of construction and a second over winter for the construction site. Traffic on Ord Ferry Road would then be under traffic control with the single lane detour for a longer duration. The temporary road including all culverts will be removed on or before October 31 of each construction season. The site will be stabilized with temporary erosion and sediment controls prior to winter storms.

Table 1. Impacts to Waters of the United States

Type of impact	Cubic yards	Acreage of impact
Piers within OHWM (permanent)	12	0.0013
Piers within wetlands (permanent)	13	0.0055
Concrete removal within OHWM (permanent)	5	0.0011
Concrete removal within wetlands (permanent)	0	0
RSP at abutments (permanent)	140	0.04
Fill of other waters (permanent)	0	0
Fill of wetlands (permanent)	120	0.003
Temporary fill of wetlands for access road	420	0.29

Temporary fill of other waters for access road	340	0.06

STAGING AREAS, RIGHTS OF WAY, AND UTILITIES:

The field to the northwest of the existing bridge will serve as a staging area for equipment and materials. Temporary construction easements will be minimal as the majority of the project will be built within the footprint of the existing bridge. Existing electrical, telephone, and fiber optic utilities located on the west side of the Ord Ferry Road will need to be relocated per current Caltrans procedural guidelines as part of the project.

CONSTRUCTION EQUIPMENT AND SCHEDULE:

It is anticipated that excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, pile driving hammers, and pile driving equipment will be required to construct the new bridge. Construction of bridge foundations will require working with concrete materials including concrete trucks and pumps. For the cast-in-place construction activities, formwork and falsework will be required. It is anticipated that construction will begin in the summer of 2019 and be staged for two (2) construction seasons, required approximately 18 months of single lane traffic control utilizing a temporary traffic system. The first construction stage would reduce the existing bridge to a single 11’ traffic lane and demolish a portion of the existing bridge. A portion of the new bridge would then be constructed with a lane approximately 13’ wide provided for traffic to be moved onto the new bridge portion. The second construction stage would remove the remainder of the existing bridge and construct the remainder of the new bridge.

WILDLIFE PASSAGE:

The project location is within a significant wildlife migration corridor. During construction wildlife, both aquatic and terrestrial, will be allowed to pass through the site at all times. Exclusion fencing will be installed in a manner that does not restrict wildlife movement or direct wildlife to dangerous or unsafe areas. Worker awareness educational training will provide information regarding the various animals, such as deer, porcupines, skunk, deer, turtles, snakes, raccoons, turkeys, and coyotes that are expected to move through the construction area. Open trenches, pits, and other areas within the construction site that could entrap wildlife will be covered during non-construction times.

2 Study Methods

The biological and botanical surveys were conducted by Gallaway Enterprises after consulting the United States Fish and Wildlife Services (USFWS) Information for Planning and Conservation (IPaC) species list, National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) species list, NOAA NMFS Essential Fish Habitat (EFH) mapper database, CDFW Natural Diversity Database (CNDDB) search, and the California Native Plant Societies (CNPS) list of rare and endangered plants gathered for the BSA (**Appendix A: Species Lists**). Additionally, a map was obtained from the CNDDB Geographic Information System (GIS) database, which provided general locations of species that had recorded CNDDB occurrences within a five (5) mile radius of the project location (**Figure 4: CNDDB Occurrences**). Based on the results of the species lists and CNDDB map, appropriate biological and botanical surveys were conducted.

Regulatory Requirements

The following describes federal, state, and local environmental laws and policies that are relevant to the California Environmental Quality Act (CEQA) review process and to this NES.

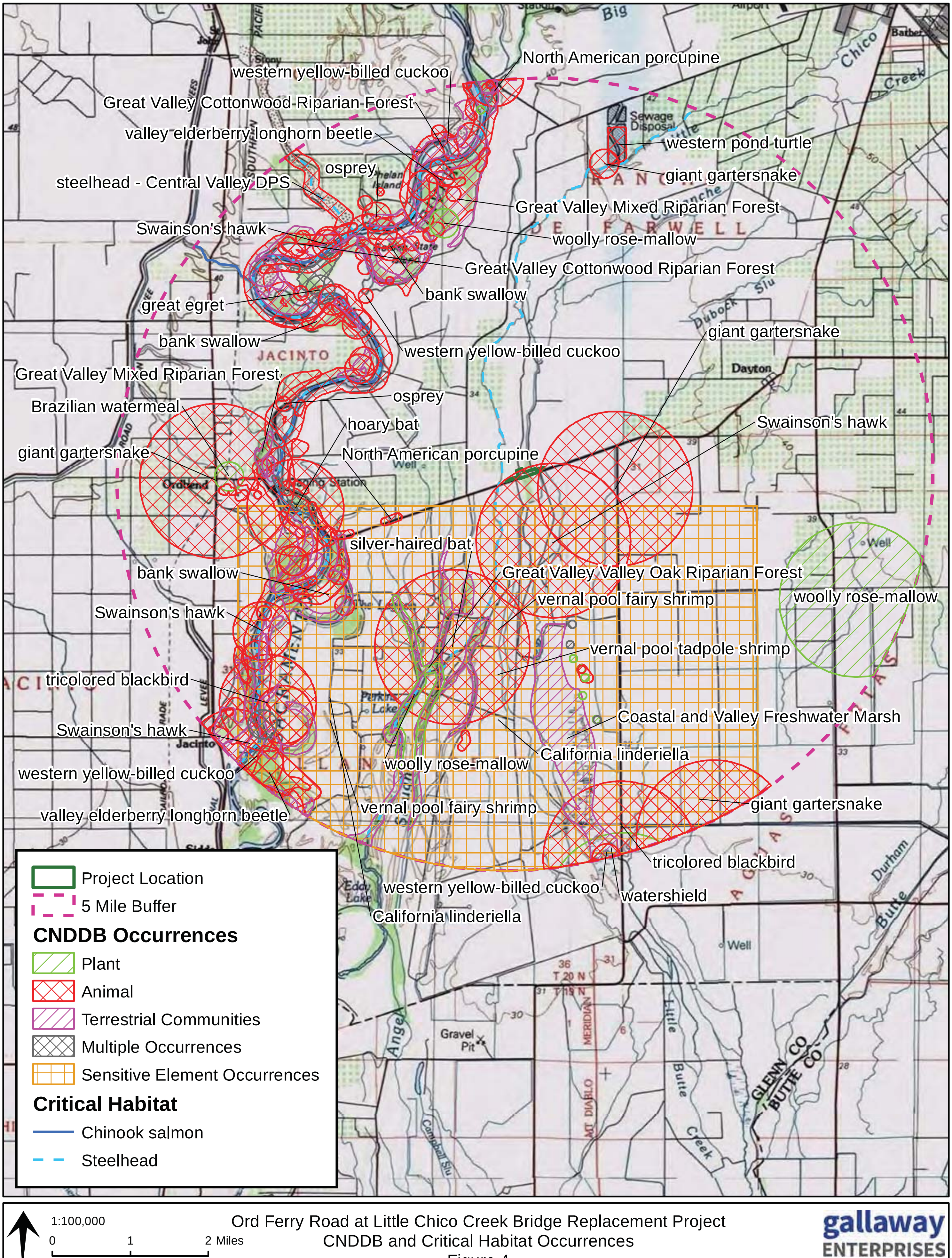
Federal

Federal Endangered Species Act

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

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those



Ord Ferry Road at Little Chico Creek Bridge Replacement Project
CNDDB and Critical Habitat Occurrences
Figure 4

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GE# 16-025 Map Date: 09/28/17

that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

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

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

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

Executive Orders 13112; Prevention and Control of Invasive Species

On February 3, 1999, Executive Order 13112 was signed establishing the National Invasive Species Council. Executive Order 11312 directs all federal agencies to prevent and control introductions of invasive nonnative species in a cost-effective and environmentally sound manner to minimize their economic, ecological, and human health impacts. Executive Order 11312 established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The Invasive Species Council and Advisory Committee oversees and facilitates implementation of the Executive Order, including preparation of a National Invasive Species Management Plan.

Section two (2) of the Executive Order states:

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

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

The Magnuson-Stevens Act

The Magnuson-Stevens Act (MSA) was signed in 1996 and mandates the use of annual catch limits and accountability measures to end overfishing, provide widespread market-based fishery management through limited access privilege programs, and calls for increased international cooperation. The fish off the coasts of the United States, the highly migratory species of the high seas, the species which dwell on or in the Continental Shelf appertaining to the United States, and the anadromous species which spawn in United States Rivers or estuaries, constitute valuable and renewable natural resources and they and their habitats are protected under the MSA. A national program for the conservation and management of the fishery resources of the United States is necessary to prevent overfishing, to rebuild overfished stocks, to insure conservation, to facilitate long-term protection of EFH, and to realize the full potential of the Nation's fishery resources.

Congress defined EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The EFH guidelines further interpret the EFH definition as:

- “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate.
- “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities.
- “necessary” means the habitat required to support a sustainable fishery and the managed species contribution to a healthy ecosystem.
- and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle.

Activities proposed to occur in EFH areas do not automatically require consultation. Consultations are triggered only when the proposed action may adversely affect EFH, and then, only Federal actions require consultation. States are not required to consult. However, if NOAAs National Marine Fisheries Service (NMFS) receives information on a State action that may adversely affect EFH, NMFS is required to provide EFH conservation recommendations to the State agency. States are not required to initiate consultation with NMFS nor respond to its recommendations (NOAAs National Marine Fisheries Service 2011).

State of California

California Endangered Species Act

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

California Environmental Quality Act Guidelines §15380

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

Clean Water Act, Section 401

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

Streambed Alteration Agreement

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

California Fish and Game Code

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

CDFW Incidental Take Permit

Incidental Take Permits (ITP) allow a permittee to take a CESA-listed species if such taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity. These permits are most commonly issued for construction, utility, transportation, and other infrastructure-related projects. Permittees must implement species-specific minimization and avoidance measures, and fully mitigate the impacts of the project. (Fish & G. Code § 2081 (b); Cal. Code Regs., tit. 14, §§ 783.2-783.8)

Central Valley Flood Protection Board Encroachment Permit

Approval by the Central Valley Flood Protection Board (CVFPB) is required for projects or uses which encroach into rivers, waterways, and floodways within and adjacent to federal and State authorized flood control projects and within designated floodways adopted by the CVFPB. You must obtain CVFPB approval before you begin certain uses or construction work, or any proposed project within these areas.

The CVFPB exercises jurisdiction over the levee section, the waterward area between project levees, a minimum 10-foot-wide strip adjacent to the landward levee toe, within 30 feet of the top of the banks of unleveed project channels, and within designated floodways adopted by the CVFPB. Activities outside of these limits which could adversely affect the flood control project are also under CVFPB jurisdiction.

Rare and Endangered Plants

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

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

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

Studies Required

Gallaway Enterprises conducted biological and botanical habitat assessments, EFH evaluation, and protocol level rare plant survey within the BSA. Biological and botanical surveys were conducted following review of the USFWS IPaC report, CNDDB Rarefind 5 report, NOAA NMFS EFH mapper database, CNPS list, and the CNDDB occurrence map (**Figure 4: CNDDB Occurrences**). The project boundary or United States Geological Survey (USGS) "Ord Ferry, CA" 7.5 minute quadrangle in which the project is located were used to derive the agency species lists **(Appendix A: Species Lists)**. Based on the results of the species lists, Gallaway Enterprises conducted a general habitat assessment and protocol level rare plant botanical survey to identify any rare, endangered, threatened, or sensitive species and their habitats that may have the potential to occur within the BSA.

Personnel and Survey Dates

Gallaway Enterprises visited the site on December 1, 2016, June 6, and October 4, 2017. During the visit, biologist, Melissa Murphy, conducted a general biological habitat assessment and EFH Evaluation, and senior botanist and certified arborist, Elena Gregg, conducted a protocol-level rare plant survey for plants with blooming periods the overlapped the survey dates, and a general botanical habitat assessment for plants with blooming periods outside the survey dates.

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

Ms. Murphy has over five years of experience surveying at the protocol and general level for listed reptiles and amphibians including California tiger salamander, giant garter snake (GGS), and California red-legged frog. Ms. Murphy has experience surveying for yellow billed cuckoo, foothill yellow-legged frog, PIT tagging reptiles, assisting in de-watering activities including fish relocation, surveying for nesting birds and raptors, capturing and banding waterfowl, and conducting habitat assessments for listed species. Ms. Murphy has installed bird and bat exclusion at a myriad of projects and works under Gallaway Enterprises' CDFW scientific collecting permit.

BIOLOGICAL HABITAT ASSESSMENT

The biological evaluation was conducted by walking the entire BSA and identifying specific habitat types and elements. If habitat was observed for special-status species it was then evaluated for quality based on vegetation composition and structure, physical features (e.g. water, soils), micro-climate, surrounding area, presence of predatory species and available resources (e.g. prey items, nesting substrates). The undersides of the bridges were also closely inspected for the presence of birds and bats. Biological and botanical species observed within the BSA are listed in **Appendix B**.

BOTANICAL HABITAT ASSESSMENT

A botanical habitat assessment was conducted to access potential for special-status plant species to occur within the BSA. The assessment was conducted by walking in all accessible areas of the BSA and noting the habitat elements present (e.g. soils, geology, hydrology, topography, aspect, elevation, etc.) and vegetation communities present. If present, natural and man-made disturbance patches were noted as well as the successional stage of vegetation within the BSA.

EFH Evaluation

Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Fishery Conservation and Management Act (MSA) §3). The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal Fisheries Management Plan. The MSA requires federal agencies to consult with NMFS on projects that may adversely affect EFH and provide an EFH assessment of potential water bodies within the Project area that may serve as EFH. The Pacific Fishery Management Council manages Chinook and Coho salmonid species under the MSA (Pacific Fishery Management Council 2000). The Sacramento River supports populations of California central valley winter-run, spring-run, fall and late fall-run Chinook salmon, each of which are respectively designated as Evolutionary Significant Units (ESUs), which spawn, breed, feed and grow within the associated system and tributaries. Therefore, the Sacramento River is considered essential fish habitat. An EFH assessment was conducted to determine the potential impacts to EFH by the proposed Project. NOAA's National Marine Fisheries Service EFH database was consulted on March 15, 2018, regarding Little Chico Creek within the Project the BSA. A summary of the EFH database query can be found in **Appendix A: Species Lists.**

PROTOCOL LEVEL RARE PLANT SURVEY

The protocol level rare plant survey was conducted following the initial botanical habitat assessment during the appropriate blooming period for the 7 special-status that were identified as having potential to occur within the BSA. The survey was conducted in accordance with the CDFW November 2009, *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. All accessible areas within the project site were surveyed on foot. A Trimble Geo Explorer 6000 Series GPS Receiver was on hand to record any special-status plant occurrences observed. A list of plant species observed during the survey is included as **Appendix B**.

Agency Coordination and Professional Contacts

A field meeting with Raymond Cooper of Butte County, Jason Jurrens, Max Katt, of Quincy Engineering, Brooks Taylor of Caltrans, and Jody Gallaway of Gallaway Enterprises, was held at the project site on April 6, 2016 to discuss construction methodology and techniques to avoid effects to special-status resources. In early 2018, a series of email correspondence and phone calls regarding the potential for listed fish species to occur within the BSA and required mitigation for impacts to listed fish and their habitats resulted in an onsite meeting on February 8, 2018. Attendees at the meeting included Jody Gallaway, Raymond Cooper, Brooks Taylor, CDFW Fisheries Biologist, Tracy McReynolds, and Jason Jurrens and Max Katt.

Limitations That May Influence Results

There were no limitations that may influence results of the habitat assessment or protocol level rare plant survey.

3 Results: Environmental Setting

Description of the Existing Biological and Physical Conditions

The study area lies within the Northern Central Valley of California. The BSA is surrounded by agricultural land to the east and west and remnant riparian habitat to the north and south.

Study Area

Within the BSA an approximately 620-foot-long existing bridge occurs over Little Chico Creek and a riparian floodway. Little Chico Creek, flows north to south through the BSA, and contains low-flows in the late summer and early fall. Vegetation communities and soils within the BSA are heavily influenced by seasonal flooding and high water table of Little Chico Creek with mid to late successional valley foothill riparian occurring within the creek floodway, and deciduous orchard and annual grassland habitats occurring beyond the immediate riparian zone. All construction related activities will be restricted to the limits of the BSA; therefore, habitat assessments and surveys were restricted to the area within the BSA.

Physical Conditions

The BSA slopes slightly to the south and sits at an elevation of approximately 112 feet above sea level. There are 6 soil map units within the BSA that are recognized by the USDA Natural Resource Conservation Service (NRCS). The soil types found within the BSA are alluvial sediments with silty or clay loam textures (NRCS 2016). The average annual precipitation is 25.84 inches and the average annual temperature is 61.2° F (Western Regional Climate Center 2016). Based on the current CWA definition of WOTUS, there are 15 features that qualify as jurisdictional WOTUS within the BSA. Little Chico Creek is characterized as an “other water.” “Other waters” exhibit an OHWM, bed, bank are regulated by the US Army Corps of Engineers (Corps). Further classification of Little Chico Creek defines it as a Relatively Permanent Water (RPW) which is defined as a tributary that flows for more than 3 months and has a documented hydrologic connection to a Traditionally Navigable Water.

Biological Conditions in the Biological Study Area

The BSA consists of riverine, valley foothill riparian habitat, deciduous orchard and a few open areas of annual grassland (**Figure 5**). The existing roadway is not considered habitat. Habitat types within the BSA are described below based on Mayer and Laudenslayer’s *A Guide to Wildlife Habitats of California* (1988).


Little Chico Creek
Ord Ferry Road

RIVERINE

Little Chico Creek is an intermittent tributary within the Sacramento River watershed, which flows north to south below Ord Ferry Road Bridge within the BSA. Two additional smaller tributaries of Little Chico Creek also occur within the BSA flowing north to south under Ord Ferry Road and 1 irrigation canal occurs on the south side of Ord Ferry Road in the eastern portion of the BSA. Within the BSA, these multiple drainages total 0.72 acres (31,161.6 square feet) (**Appendix C: Draft Delineation of WOTUS Map**). Physical features of the drainages include a mud and gravel bottom, sparse vegetation in the low-flow channel, and relatively dense tree canopy above the low-flow channel. At the time of the site visit water was present in all of the drainages and within Little Chico Creek water depths ranged from 1 to 4 feet deep. Once it leaves the BSA, Little Chico Creek flows in a southerly direction, splits into a series of smaller channels and eventually flows into Angel Slough, then the Sacramento River.

VALLEY FOOTHILL RIPARIAN

Within the OHWM and 100-year floodway of Little Chico Creek, there is a wide corridor of mid- to late successional valley foothill riparian habitat. The majority of the riparian habitat is dominated by a mature tree canopy of valley oak (*Quercus lobata*), however, there are a few shrubby thickets present that were dominated by arroyo willow (*Salix lasiolepis*) and Himalayan blackberry (*Rubus armeniacus*). The valley foothill riparian habitat occurs under the entire expanse of the Ord Ferry Bridge and the transition from this habitat type to adjacent annual grassland and valley oak woodland habitat is abrupt. Valley-foothill riparian habitats provide food, water, migration and dispersal corridors for fish species, and escape, nesting, and thermal cover for an abundance of other wildlife species. Due to the size of the riparian corridor within and adjacent to the BSA, this habitat is used extensively as a migration corridor for large mammals such as deer.

Scattered within the riparian habitat and adjacent to the riparian habitat within the BSA are numerous seasonal wetlands. Seasonal wetlands are non-tidal depressional wetlands classified under the palustrine system. They tend to stay wet or ponded into late spring or early summer months and are typically dominated by generalist wetland plants and emergent wetland plants.

DECIDUOUS ORCHARD

Deciduous orchard occurs within the northeastern corner of the BSA. Deciduous orchards are dominated by tree species that lose their leaves during the winter months. The understory between the rows is typically composed of a variety of grasses and other herbaceous plants including mustards (*Brassica* sp.) or are managed to prevent growth totally or in part through the use of herbicides. Orchards that occur within the BSA include English walnut (*Juglans regia*). Due to the monoculture and maintenance of most orchards, this environment does not support an abundance of breeding wildlife. Species that forage in orchards include a variety of resident and migratory birds such as scrub jays (*Aphelocoma californica*), American crows (*Corvus brachyrhynchos*) and northern mocking birds (*Mimus polyglottos*), and small mammals including California ground squirrels (O*tospermophilus beecheyi*), and western gray squirrels (*Sciurus griseus*).

ANNUAL GRASSLAND

Annual grassland occurs in patches within the upland habitat within the BSA. Annual grasslands occur on open flat to gently rolling lands and are dominated by grasses and annual plants, with the dominant species varying depending on the climate and soils. This habitat type often occurs on its own or as an understory in wooded habitat types. Some of the dominant plant species observed in the annual grassland habitat within the BSA include medusahead (*Elymus caput-medusae*), wild oat (*Avena barbata*), yellow star thistle (*Centaurea solstitialis*), and soft chess (*Bromus hordeaceus*). A variety of ground nesting avian species, reptiles, and small mammals use grassland habitat for breeding, while many other wildlife species only use it for foraging or require other habitat characteristics such as rocky outcroppings, cliffs, caves, or ponds in order to find shelter and cover for escapement (Mayer and Laudenslayer 1988). Common species found in this habitat type include western fence lizards (*Sceloporus occidentalis*), Northern Pacific rattlesnakes (*Crotalus oreganus*), common garter snakes (*Thamnophis elegans*), California ground squirrels, jackrabbits (*Lepus californicus*), western meadowlark (*Sturnella neglecta*), and a variety of raptor and owl species.

Regional Species and Habitats and Natural Communities of Concern

The following special-status species were identified under the USFWS IPaC, CNDDB, NMFS, and the CNPS species lists (**Appendix A: Species Lists**) as having potential to occur within the USGS “Ord Ferry” 7.5 minute and surrounding quadrangles. Species that have the potential to occur within the BSA are based on suitable habitat within the BSA, CNDDB occurrences within a five-mile radius of the BSA, and observations made during biological and botanical surveys. A summary of special-status species and their potential to occur within the BSA is provided in **Table 2**.

Table 2. Listed and Candidate Species Potentially Occurring or Known to Occur in the Ord Ferry Road at Little Chico Creek Bridge Replacement Project BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Potential to Occur/Rationale
SENSITIVE NATURAL COMMUNITIES					
Great Valley valley oak riparian forest	N/A	SNC	Large corridors of riparian forest dominated by valley oaks	A	None. Valley oak riparian forest is present within the BSA; however, this CDFW designated SNC does not occur in the BSA.
PLANTS					
Brazilian watermeal	*Wolffia brasiliensis*	CNPS 2B.3	Assorted shallow freshwater marshes and swamps. Blooming Period (BP): Apr.-Dec.	A	None. Not observed during protocol-level surveys.
California beaked-rush	*Rhynchospora californica*	CNPS 1B.1	Freshwater mashes, swamps, bogs, fens, meadows, and seeps. BP: May-Jul.	A	None. Range above 147 feet elevation and not observed during protocol-level surveys.
California satintail	*Imperata brevifolia*	CNPS 2B.1	Scrub habitats, alkali meadows and seeps, and mesic riparian scrub. BP: Sep.-May.	A	None. Not observed during protocol-level surveys.
Silky cryptantha	*Cryptantha crinita*	CNPS 1B.2	Gravelly and cobbly streambeds. BP: Apr.-May.	A	None. Not observed during protocol-level surveys.
Slender-leaved pondweed	*Stuckenia filiformis ssp. alpina*	CNPS 2B.2	Assorted shallow freshwater marshes and swamps. BP: May-Jul.	A	None. Not observed during protocol-level surveys.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Potential to Occur/Rationale
Watershield	*Brasenia schreberi*	CNPS 2B.3	Freshwater marshes and swamps. BP: Jun.-Sep.	A	None. Not observed during protocol-level surveys.
Wooly rose mallow	*Hibiscus lasiocarpos var. occidentalis*	CNPS 1B.2	Freshwater marshes and swamps. Often in riprap on levees. BP: Jun.-Sep.	A	None. Not observed during protocol-level surveys.
INVERTEBRATES					
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	Blue elderberry shrubs in riparian zones.	A	None. There are no elderberry shrubs within the BSA. No effect.
FISH					
Central Valley spring-run chinook salmon	*Oncorhynchus tshawytscha*	FT/ST	Sacramento River and its tributaries.	HP	**Moderate.** Non-natal spring-run Chinook salmon may use the portions of Little Chico Creek within the BSA as rearing habitat during the spring.
Central Valley steelhead	*Oncorhynchus mykiss*	FT	Sacramento and San Joaquin Rivers and their tributaries.	HP	**Known.** Steelhead use Little Chico Creek as a migration corridor and spawn in its upper reaches. Little Chico Creek is designated as critical habitat for steelhead.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Potential to Occur/Rationale
Delta smelt	*Hypomesus transpacificus*	FT/ST	Endemic to the San Francisco Bay and Sacramento–San Joaquin Delta Estuary (Delta). Found only from the San Pablo Bay upstream through the Delta in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties	HA	None. Delta smelt are not known to occur in Butte County; therefore, the project will have no effect on Delta smelt (50 CFR Part 27, April 7, 2010). Therefore, the Project will have no effect on this species.
Sacramento River winter-run Chinook	*Oncorhynchus tshawytscha*	FE/SE	Sacramento River.	HA	None. Little Chico Creek is not within this Evolutionary Significant Unit (ESU) range; therefore, the Project will have no effect on this species.
Southern Distinct Population Segment (sDPS) of North American Green Sturgeon	*Acipenser medirostris*	FT	Spawning habitat in Sacramento, Klamath and Rogue Rivers.	HA	None. There is no suitable habitat within the BSA; therefore, the Project will have no effect on this species.
MAMMALS					

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Potential to Occur/Rationale
Pallid bat	*Antrozous pallidus*	SSC	Colonial species; roosts in small crevices in buildings, bridges, and hollow trees. Common in dry environments.	A	Low. There is poor habitat under the bridge within the BSA due to the height of the bridge and no bats observed during field surveys.
Western red bat	*Lasiurus blossevillii*	SSC	Solitary species; roosts in trees often in riparian forests and occasionally oak woodlands	HP	**Moderate**. There is marginal habitat within the riparian forest present within the BSA.
REPTILES & AMPHIBIANS					
California red-legged frog	*Rana draytonii*	FT/ SSC	Inhabits quiet pools of streams, marshes, and occasionally ponds.	A	None. There is no suitable breeding habitat within the BSA and CRLFs have been extirpated from the Central Valley since 1960 (USFWS 2002). No effect.
Giant garter snake	*Thamnophis gigas*	FT/ST	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes ponds, sloughs, small lakes, and there associated uplands. (sea level - 400 ft elevation)	HP	**High**. There is suitable aquatic habitat for GGS present and CNDDB occurrences in close proximity to the BSA. May affect, and is likely to adversely affect.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Potential to Occur/Rationale
Western pond turtle	*Emys marmorata*	SSC	Artificial ponds, pond margins vegetated by heavy riparian and shrub growth.	HP	**<u>High</u>**. The drainages present provide suitable aquatic habitat for pond turtles in the BSA
BIRDS					
Bald Eagle	*Haliaeetus leucocphealus*	FP	Coast, large lakes and river systems, with open forests with large trees and snags.	A	<u>None</u>. No nesting habitat within or adjacent to the BSA.
California black rail	*Laterallus jamaicensis coturniculus*	ST/FP	Densely vegetated tidal and freshwater emergent wetlands	A	<u>None</u>. Not found on the valley floor, occupy fresh emergent wetland habitat in the foothills, delta and coast. No effect.
Swainson's Hawk	*Buteo swainsoni*	ST	Open grasslands, shrublands and agricultural fields, often near riparian forests.	HP	**<u>High</u>**. There is suitable nesting habitat and marginal foraging habitat present in the BSA.
Tri-colored blackbird	*Agelaius tricolor*	SC/SSC	Fresh emergent wetlands, blackberry brambles, agricultural fields and grasslands.	HP	**<u>Moderate</u>**. The fresh emergent wetland and blackberry patches provides marginal habitat within the BSA.

Common Name	Scientific Name	Status	General Habitat Description	Habitat Present / Absent	Potential to Occur/Rationale
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FT/SE	Open woodlands, riparian areas, orchards and moist, overgrown thickets	HP	**Moderate**. There is suitable nesting habitat, CNDDB occurrences within 5 miles of the BSA, and critical habitat within 1.5 miles. No effect.
Code Designations					
Absent [A] - no habitat present and no further work needed. Habitat Present [HP] -habitat is, or may be present. The species may be present. Present [P] - the species is present. Critical Habitat [CH] - project footprint is located within a designated critical habitat unit, but does not necessarily mean that appropriate habitat is present. Status: Federal Endangered (FE); Federal Threatened (FT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Candidate (SC), State Species of Special Concern (SSC); California Native Plant Society (CNPS); Sensitive Natural Community (SNC)					

4 Results: Biological Resources, Discussion of Impacts and Mitigation

Habitats and Natural Communities of Special Concern

There are no CDFW designated natural communities of special concern within or adjacent to the BSA. However, a wide corridor of valley oak riparian forest does occur within the BSA.

It is anticipated that a narrow strip of riparian forest within the County's right-of-way will be removed in order to construct the new bridge and temporary access road. Approximately 37 trees will need to be removed in order to construct the new bridge and temporary access road. All removed trees shall be mitigated for at a 3:1 ratio on-site. Trees to be replanted will represent the species of trees that are removed.

There are 15 features that qualify as jurisdictional WOTUS within the BSA including 3 seasonal wetlands, 7 riparian wetlands, and 5 drainages including Little Chico Creek. Project activities will result in 0.29 acre of temporary impacts to wetlands and 0.06 acre to other waters. Project activities will result in direct impacts to 0.05 acre of wetlands and 0.02 acre of other waters. A Draft Delineation of WOTUS Map is included as **Appendix C**.

Special Status Plant Species

Based on the results of the habitat assessment conducted, the BSA was determined to contain potentially suitable habitat for 7 special-status plant species (**Table 2**). Protocol-level botanical surveys were conducted in 2017 for these 7 plant species within the BSA. Based on the results of the protocol-level surveys conducted, no special-status plant species were observed within the BSA.

CV Steelhead Critical Habitat

Little Creek is designated as critical habitat for CV steelhead by NMFS (70 FR 52488). The ESA requires that critical habitat be designated for all species listed under the ESA. Critical habitat is designated for areas that provide essential habitat elements that enable a species survival and which are occupied by the species during the species listing under the ESA. Areas outside of the species range of occupancy during the time of its listing can also be determined as critical habitat if the agency decides that the area is essential to the conservation of the species.

Survey Results

Little Chico Creek within the BSA provides a migration/emigration corridor and non-natal rearing habitat. The freshwater migration corridor and freshwater rearing sites are critical habitat primary constituent elements (PCE) that provide adult migration, and juvenile refuge, mobility and survival, and are essential to the conservation of steelhead. There is no spawning habitat within the BSA (pers. comm. January 23, 2018. Tracy McReynolds, CDFW Fisheries Biologist).

Project Impacts

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 25 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high water elevation will be a portion of the new bridge supports and removal of the old bridge supports.

A clear water diversion using appropriately sized culverts and clean river gravel will be installed in Little Chico Creek as part of the temporary road. The temporary road including all culverts will be removed on or before October 31st of each construction season. The site will be stabilized with temporary erosion and sediment controls prior to winter storms. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Tree removal is localized and constitutes a minor temporary impact that is completely off-set by restoring the area after construction. In addition, disturbance of the streambed and banks during the installation of the clear water diversion may lead to temporary increases in turbidity. The project may affect, but it not likely to adversely modify CV steelhead critical habitat.

Beneficial Effects

The project will have beneficial affects to CV steelhead critical habitat by removing direct net increase in migration and rearing habitat within the Little Chico Creek flood plain through removal of piers. Clean gravel used to construct the stream diversion will remain providing a benefit to aquatic organisms.

Avoidance and Minimization Efforts

The following are avoidance and minimization measures recommended in order to avoid and minimize impacts to critical habitat.

- If flowing water is present, a silt screen shall be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen shall be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.
- An erosion control plan that incorporates erosion control BMPs shall be created and implemented prior to the wet season (November 1 – April 1) in order to avoid sediment from entering into WOTUS.
- BMPs shall be implemented that are necessary to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs will include permanent and temporary erosion control measures, including use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, and ultimately seeding and revegetating.
- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.
- All fueling and/or equipment maintenance shall occur 50 feet from all water bodies and riparian areas. Any chemical spill within the active channel of the Little Chico Creek will be reported to NMFS, CDFW and other appropriate resource agencies within 48 hours.
- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) shall be developed and implemented by the contractor. Spill prevention measures will include stockpiling absorbent booms, staging hazardous materials at least 50 feet away from WOTUS, and maintaining and checking construction equipment to prevent fuel and lubrication leaks. SWPPP measures will utilize applicable BMPs such as use of silt fences, straw bales, other methods necessary to minimize storm water discharge associated with construction activities.
- The contractor should have absorbent booms available within 50 feet of the live channel during all in channel work to be further prepared for quick containment of any spills within or adjacent to Little Chico Creek.

Compensatory Mitigation

Impacts to CV steelhead critical habitat will be temporary. Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities. Portions of the streambed of Little Chico Creek disturbed by construction activities will be restored to a pre-construction condition. The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Trees will be mitigated for onsite and in-kind at a 3:1 ratio.

Cumulative Effects

There are no foreseeable projects or activities that could have an effect on CV steelhead critical habitat within the BSA; therefore, there will be no cumulative impacts.

CV Spring-Run Chinook EFH

Essential fish habitat means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Fishery Conservation and Management Act (MSA) §3). The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal Fisheries Management Plan. The MSA requires federal agencies to consult with NMFS on projects that may adversely affect EFH and provide an EFH assessment of potential water bodies within the Project area that may serve as EFH. The Pacific Fishery Management Council manages Chinook and Coho salmonid species under the MSA (Pacific Fishery Management Council 2000). The Sacramento River supports populations of California central valley winter-run, spring-run, fall and late fall-run Chinook salmon, each of which are respectively designated as ESUs, which spawn, breed, feed and grow within the associated system and tributaries. Therefore, the Sacramento River is considered essential fish habitat.

Survey Results

An EFH assessment was conducted to determine the potential impacts to EFH by the proposed Project. NOAA’s National Marine Fisheries Service EFH database was consulted on March 15, 2018, regarding Little Chico Creek within the Project BSA. A summary of the EFH database query can be found in Appendix A.

Project Impacts

There is no spring run Chinook EFH within the BSA; therefore, the Project will have no effect on EFH.

Avoidance and Minimization Efforts

There is no spring-run Chinook EFH within the BSA; therefore, the implementation of avoidance and minimization measures are not necessary.

Compensatory Mitigation

There is no compensatory mitigation recommended for CV spring-run Chinook EFH because EFH does not occur within the BSA.

Cumulative Effects

There is no EFH within the BSA; therefore, cumulative effects are not anticipated.

Special Status Animal Species Occurrences

ANADROMOUS FISH

Central Valley (CV) spring-run Chinook salmon ESU are threatened under the ESA and the CESA. The CV spring-run Chinook salmon ESU includes all naturally spawned populations in the Sacramento River and its tributaries as well as fish from the Feather River Fish Hatchery (FRFH) spring-run Chinook program (NMFS (a) August 11, 2012). CV spring-run Chinook are currently distributed throughout the Sacramento River and its tributaries as far north as the Keswick Dam. They enter into the Sacramento River from the San Francisco Bay around March through September to spawn. CV spring-run Chinook typically enter into freshwater systems as immature fish and hold within stream systems for several months before spawning. Spawning occurs from August through October. Fry emerge and disperse to downstream habitats where they hide within gravel substrates. When fry become larger they move into other areas of the stream that offer larger refugia such as, woody debris, calm channels, undercut banks, and fallen trees. Juveniles migrate to delta, bay and estuary environments at all sizes. Some juveniles migrate immediately while others take time to grow in freshwater systems before migrating into brackish and salt water environments.

Central Valley steelhead Distinct Population Segments (DPS) are threatened under the ESA. The CV steelhead DPS includes all natural spawning anadromous populations of steelhead in the Sacramento and San Joaquin Rivers and their tributaries, excluding steelhead found in the San Francisco Bay and San Pablo Bay and their associated tributaries. There are also two artificial populations that are included within the CV steelhead DPS which are from the Coleman Fish Hatchery program and the FRFH program (NMFS August 1, 2012). The CV steelhead DPS is currently distributed throughout the Sacramento River, northern portions of the San Joaquin River and into the far reaches of their associated tributaries. They enter into freshwater systems from August through April and hold until flows are high enough to migrate into the far reaches of tributaries. CV steelhead typically spawn from December to

April and unlike Pacific salmon, do not die after spawning. Their smaller size allows them to access the far reaches of tributaries where their preferred spawning grounds occur. Records have shown that CV steelhead spawning is concentrated in the far reaches of tributaries, most notably in the northern accessible tributaries of the Sacramento River (NMFS 2009). When fry emerge, they disperse to shallow bank margins for refuge. Fry utilize coarse cobble substrates during their first stages of development. As juvenile steelhead get larger they begin to move into faster currents and deeper pools. Juvenile steelhead enter into salt water environments typically after one to three years of growth in their freshwater environments (U.S Department of the Interior 2008).

Current threats facing anadromous fish include loss of historic spawning habitat, degradation of current stream habitat and threats to genetic integrity (NMFS 2009).

Survey Results

The stretch of Little Chico Creek within the BSA has been designated by the USFWS as critical habitat for CV steelhead (70 FR 52488 (September 02, 2005)) (**Figure 4**). Migration into Little Chico Creek would come from Angels Slough, which is a tributary of Butte Creek, which in turn is a tributary of the Sacramento River. However, Angels Slough does not have a year-round flow. Therefore, migration of anadromous fish into Little Chico Creek can only occur during high flows when all the downstream tributaries are flowing and have a direct hydrologic connection to the Sacramento River. Further, many of the PCEs of critical habitat for CV steelhead are lacking within the BSA. The stretch of Little Chico Creek within the BSA lacks spawning gravel since the substrate within the bed of the creek is primarily mud and silt, the water quantity is insufficient, and there is a lack of suitable rearing sites such as large rocks/boulders, side channels, undercut banks, and aquatic vegetation.

Although there is no spawning or adult migration habitat present, the BSA does offer suitable rearing and emigration habitat for non-natal juveniles during the late fall through late spring months (i.e. November 1 – June 30) when water levels are high and water temperatures are cool. During the summer months (i.e. July 1-October 31), the intermittent hydrology, still water, and warm temperatures within the BSA make Little Chico Creek unsuitable habitat for any lifestage of salmonid including Cv spring-run Chinook (pers. comm. January 23, 2018. Tracy McReynolds, CDFW Fisheries Biologist). Therefore, if Little Chico Creek contains water between May 1-June 30 then there is a potential for non-natal juveniles to be present. If during this time the creek is flowing the non-natal juveniles have the ability to escape harm’s way by migrating up- or downstream; however, given the intermittent nature of Little Chico Creek, any non-natal juveniles that fail to leave the BSA before the creek stops flowing for the year would be trapped and eventually perish.

Project Impacts

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 25 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high water elevation will be a portion of the new bridge supports and removal of the old bridge supports. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain.

The Project will be completed over two (2) years. The Contractor will need to construct a temporary access road just north of the existing bridge to accommodate construction vehicle traffic and oversized farm equipment during the staged bridge construction. Farm equipment greater than the Stage 1 and Stage 2 bridge width regularly use Ord Ferry Road during the typical construction season and will need to be detoured through the construction zone.

The temporary access road will need to be installed from May 1 through October 31 in both seasons of construction to complete the project in two construction seasons. Shorter durations for the temporary access road will result in a third season of construction and a second over winter for the construction site. A clear water diversion including appropriately sized culverts and clean river gravel within Little Chico Creek is anticipated. The temporary road and culverts will be removed during the winter between the construction season.

Avoidance and Minimization Efforts

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- The temporary access road will need to be installed from May 1st through October 31st in both seasons of construction to complete the project in two construction seasons. Shorter durations for the temporary access road will result in a third season of construction and a second over winter for the construction site.

- If water is present within the BSA between May 1st and October 31st then a clear water diversion using appropriately sized culverts will be installed in Little Chico Creek. The temporary road including culverts will be removed on or before October 31^{st} of each construction season. A qualified biologist shall monitor the construction site during placement and removal of stream diversions to ensure that any harm or loss of salmonids is minimized and documented.

- If water is present and the clear water is installed between May 1^{st} and June 30^{th} when listed salmonids have the potential to be present, then a qualified biologist will perform fish relocation prior to the installation of the clear water diversion.

- The qualified biologist with expertise in the areas of anadromous salmonid biologist, including handling, collecting, and relocating salmonids; salmonid habitat relationships; and biological monitoring shall perform fish relocation. Fish relocation will be performed in a manner which minimizes all potential risks to CV steelhead and CV spring run Chinook.

    a. Electrofishing, if used, shall be performed by a qualified biologist and conducted according to the NMFS Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act.

- Any pile driving that occurs between May 1^{st} and June 30^{th} will occur on land and at least 10 meters from Little Chico Creek. If flowing water is present, a silt screen shall be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen shall be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.

- An erosion control plan that incorporates erosion control BMPs shall be created and implemented prior to the wet season (November 1 – April 1) in order to avoid sediment from entering into WOTUS.

- BMPs shall be implemented that are necessary to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs will include permanent and temporary erosion control measures, including use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, and ultimately seeding and revegetating.

- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.
- All fueling and/or equipment maintenance shall occur 50 feet from all water bodies and riparian areas. Any chemical spill within the active channel of the Little Chico Creek will be reported to NMFS, CDFW and other appropriate resource agencies within 48 hours.
- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) shall be developed and implemented by the contractor. Spill prevention measures will include stockpiling absorbent booms, staging hazardous materials at least 50 feet away from WOTUS, and maintaining and checking construction equipment to prevent fuel and lubrication leaks. SWPPP measures will utilize applicable BMPs such as use of silt fences, straw bales, other methods necessary to minimize storm water discharge associated with construction activities.
- The contractor should have absorbent booms available within 50 feet of the live channel during all in channel work to be further prepared for quick containment of any spills within or adjacent to Little Chico Creek.

Compensatory Mitigation

Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities. Portions of the streambed of Little Chico Creek disturbed by construction activities will be restored to a pre-construction condition. The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season. Thirty-seven (37) trees with a DBH of 4 inches or greater will removed from the Little Chico Creek floodplain. Trees will be mitigated for onsite and in-kind at a 3:1 ratio.

Cumulative Effects

No cumulative effects to CV spring-run Chinook salmon or CV steelhead are expected due to the implementation of the avoidance and mitigation measures discussed above. It is uncertain if there will be future projects on Little Chico Creek that correlate with the timing of the project. No other projects within Little Chico Creek are known.

GIANT GARTER SNAKE

Giant garter snakes are listed as threatened under the ESA and CESA. They are the largest species of garter snake. Dull yellow striping, wide head and commonly distinguishes GGS from other common species of garter snake. GGSs are found in the wetlands of the Sacramento and San Joaquin Valleys from Chico, Butte County to Mendota Wildlife Area, Fresno County. Suitable habitat includes marshes, sloughs, back waters of rivers, irrigation canals, drainage canals, agricultural wetlands, flooded rice fields and occasionally streams with low gradient and slow to stagnant waters. GGSs breed from March to April and females give birth to live young from July to early September. Current threats facing the GGS is urbanization, flood control and canal maintenance, grazing and agricultural practices, wetland management for water fowl, invasive species and natural gas exploration (USFWS 2012).

Survey Results

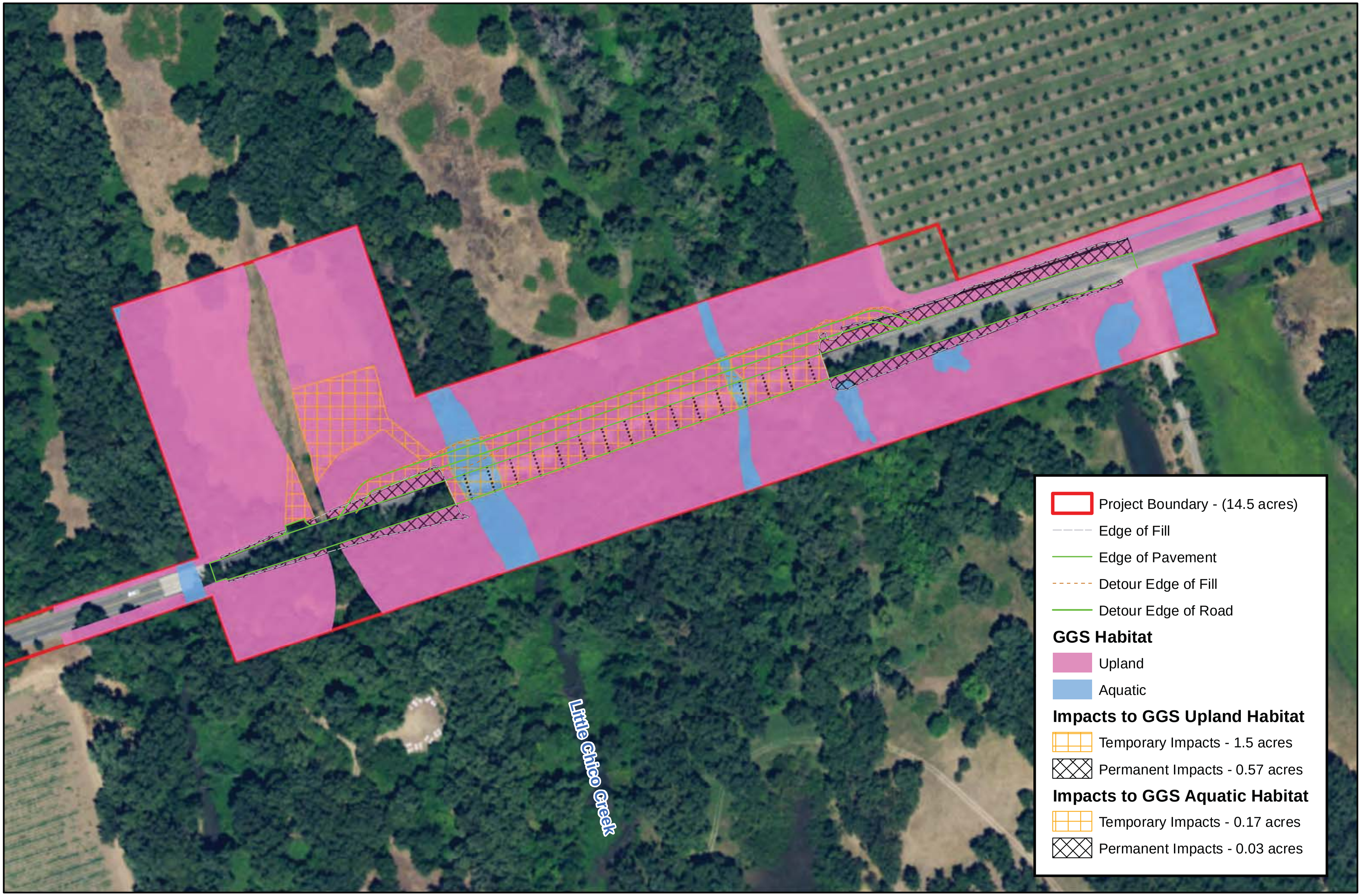
Suitable habitat components or PCEs for GGS consist of (1) adequate water during the snake's active season, (2) emergent herbaceous wetland vegetation for escapement and foraging, (3) grassy banks and openings in waterside vegetation for basking, and (4) higher elevation upland habitat for cover and refuge from flooding (USFWS 2012). There is suitable aquatic and upland habitat that contains the PCEs for GGS within and surrounding the BSA. In addition, there are numerous GGS CNDDB occurrences within 5 miles of the BSA, including one that is adjacent to the east of the BSA (CNDDB occurrence # 396).

Aquatic Habitat

Suitable aquatic habitat for GGS consists of marshes, sloughs, ponds, small lakes, low gradient streams, irrigation ditches and agricultural wetlands (e.g. rice fields) (USFWS 2012). The BSA contains suitable aquatic habitat for GGS in the form of Little Chico Creek, two tributaries of Little Chico Creek, an irrigation canal, and a fresh emergent wetland in the eastern end of the BSA. Water is present in these areas during the GGS's active season (Gallaway Enterprises personal observation) and wetland vegetation was observed along the edges of the creeks for foraging and refuging GGS.

Upland Habitat

Suitable upland habitat for GGS consists of habitat adjacent to suitable aquatic habitat. Suitable upland habitat often contains low growing vegetation, exposed canopy and small mammal burrows or other forms of refuge (e.g. rip rap, broken concrete etc.) (USFWS



Data Sources: ESRI, USDA NAIP
Imagery: 07/13/17, Quincy Engineering, Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
GGS Habitat Effects
Figure 6

gallaway ENTERPRISES

GE# 16-025 Map Date: 12/13/17

2012). The BSA contains suitable upland habitat for GGS. The adjacent land includes remnant riparian forest, wetlands, annual grassland, and deciduous orchards.

Project Impacts

Construction activities resulting in temporary and permanent impacts to GGS aquatic and upland habitat GGS will occur and are depicted in **Figure 6**. The project may affect, and is likely to adversely affect GGS. To ensure no direct take of GGS occur due to the proposed project, the following avoidance and minimization measures will be implemented.

Avoidance and Minimization Efforts

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- A qualified biologist shall conduct a pre-construction survey 24 hours before any vegetation removal or ground disturbance activities are conducted within GGS aquatic and upland habitat. Whenever a lapse in construction activity within GGS habitat of 2 weeks or more has occurred, the area will be re-surveyed.

- A qualified biologist shall be onsite to monitor for GGS during all vegetation removal and initial ground disturbing activities within GGS habitat. The biological monitor will assist the contractor in avoiding disturbance to burrows in the upland habitat during the GGS active period. After the initial ground disturbing activities have been completed, the biological monitor will conduct weekly checks of the site to ensure compliance with the conservation measures.

- All project related ground disturbances to GGS habitat shall occur in the GGS active season May 1st through October 31st. The GGS active season typically ends on October 1st, however in the event that there is constant activity, including constant ground and noise disturbances, that will preclude snakes from the project area, the GSS active season will extend to October 31st.
- Snake exclusion fencing may be installed in areas that may result in inadvertently entrapping snakes and other wildlife, such as trenches, open pits, and dewatered areas. Fence location shall be designated by the qualified biologist. Snake exclusion fencing shall be installed after vegetation removal has occurred in GGS suitable habitat areas so as not to trap any refuging snakes within the project area during vegetation removal. The fence must be maintained throughout the duration of the project and removed upon completion of the project. The exclusion fencing will be

inspected regularly by the biological monitor to ensure they are being properly maintained.

- All excavated areas more than 1 foot deep that could entrap GGS and will be left open overnight will be covered or, if covering the excavated area is not feasible, than the excavated area will be provided with one or more escape ramps.

- Tightly woven fiber netting (mesh size less than 0.25 in), coconut coir matting, or similar material will be used for erosion control purposes. Plastic microfilament or wire mesh in straw waddles or erosion control blankets will not be used. The edge of the erosion control materials will be buried in the ground to prevent GGS from crawling underneath the material.

- If a GGS is observed at any time during project activities then construction shall stop within 100 feet of the observation and the qualified biologist and/or resident engineer shall be contacted immediately for further guidance.

- If there is incidental take of a GGS during project activities then a qualified biologist and/or resident engineer shall be contacted immediately and the USFWS and CDFW shall be notified within 24 hours and consulted for further guidance.

- A Worker Environmental Awareness Training Program for construction personnel shall be conducted by a qualified biologist for all personnel that will be within the project area for more than 30 minutes, prior to the commencement of their responsibilities. The program shall provide workers with information on their responsibilities with regard to avoiding impacts to GGS. An overview of the life-history of the GGS, information on take prohibitions, protections afforded these species under the ESA, and an explanation of the relevant terms and conditions.

- All vegetation clearing within 200 feet of the banks of suitable GGS aquatic habitat will be limited to the smallest area feasible and equipment movement will be limited to designated haul routes and staging areas. Avoided GGS habitat will be flagged for avoidance.

- All temporarily disturbed GGS habitat will be restored to pre-project conditions.

Compensatory Mitigation

The project will permanently and temporarily impact upland GGS habitat. To mitigate permanent and temporary impacts to GGS upland habitat the following is recommended.

- Permanent loss of GGS habitat will be compensated by purchasing creation credits at the Sutter Basin Conservation Bank or at another USFWS approved mitigation bank with a service area that accommodates the project location. Credits shall be purchased prior to the start of construction. **Table 3** shows the amount of credits that will need to be purchased.

- Temporary disturbance to snake habitat shall be restored to pre-project conditions within one (1) year of completion of construction.
    - Restoration and monitoring shall follow the USFWS *Guidelines for Restoration and/or Replacement of Giant Garter Snake Habitat* (1997). If restoration is unsuccessful, as determined by the USFWS, consultation will be reinitiated.

Cumulative Effects

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

Table 3. GGS Permanent and Temporary Impacts to Upland and Aquatic Habitat and Total Acres to be Mitigated or Required Action.

Impacted Habitat	Acres	Mitigation Ratio	Required Action	Acres to be Mitigated
Upland Permanent	0.57	1:1	Purchase Credits at an Approved USFWS GGS Mitigation Bank	0.57
Upland Temporary	1.5	N/A	Restore/Monitor	1.5
Aquatic Permanent	0.03	3:1	Purchase Credits at an Approved USFWS GGS Mitigation Bank	0.09
Aquatic Temporary	0.17	N/A	Restore/Monitor	0.17
			Total Mitigation Acres	**2.33**

WESTERN POND TURTLE

The western pond turtle is a SSC in California. Western pond turtles are drab darkish colored turtles with a yellowish to cream colored head. They range from the Washington Puget Sound to the California Sacramento Valley. Suitable aquatic habitats include slow moving to stagnant water, such as back waters and ponded areas of rivers and creeks, semi-permanent to permanent ponds and irrigation ditches. Preferred habitats include features such as hydrophytic vegetation, for foraging and cover, and basking areas to regulate body temperature. In early spring through early summer, female turtles begin to move over land in search for nesting sites. Eggs are laid on the banks of slow moving streams. The female digs a hole approximately four inches deep and lays up to eleven eggs. Afterwards the eggs are covered with sediment and are left to incubate under the warm soils. Eggs are typically laid between March and August (Zeiner et. al. 1990). Current threats facing the western pond turtle include loss of suitable aquatic habitats due to rapid changes in water regimes and removal of hydrophytic vegetation.

Survey Results

Suitable western pond turtle habitat occurs within Little Chico Creek and the other drainages present in the BSA when water is present in these drainages. In addition, there is one western pond turtle CNDDB occurrences within five miles of the BSA and turtles were observed on site. The western pond turtle occurrence is in the ponds at the Chico Municipal Sewage Treatment Plant along Little Chico Creek, approximately 4 miles upstream of the BSA (occurrence number 1,224, CNDDB 2017).

Project Impacts

With the implementation of avoidance and minimization measures there will be no direct or indirect impacts to western pond turtles. Direct and indirect impacts to western pond turtles will be avoided by conducting a survey immediately prior to in-stream work, relocating turtles as needed, and creating non-disturbance buffers if turtle nests are discovered.

Avoidance and Minimization Efforts

The following are avoidance and minimization measures recommended in order to avoid and minimize potential impacts to western pond turtle:

- Immediately prior to conducting in-stream work, a qualified biologist shall conduct a survey to determine the presence or absence of western pond turtles. If western pond turtles are observed where they could be potentially impacted by project activities, as determined by the on-site biologist, then work shall not be conducted within 100 feet of the sighting until the turtle(s) have left the project site or a qualified biologist has relocated the turtle(s) immediately outside of the project site.

- If turtle eggs are uncovered during construction activities, then all work shall stop within a 25 feet radius of the nest and the on-site biologist should be notified immediately. The 25-foot buffer should be marked with identifiable markers that do not consist of fencing or materials that my block the migration of young turtles to the water or attract predators to the nest site. No work will be allowed within the 25 foot buffer until the turtle eggs have hatched or the nest fails.
- All portions of the project site that could result in inadvertently trapping turtles, such as open pits, trenches, and de-watered areas will be covered and/or exclusion fencing will be installed to prevent turtles from entering these areas.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to western pond turtle will occur.

Cumulative Effects

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

SWAINSON'S HAWK

Swainson's hawk are State listed as threatened. They are found throughout the western part of the United States and from Canada to Mexico. Swainson's hawks are a fairly large, slender hawk with three different color morph displays. The most common morph in northern California is the dark morph which demonstrates black to dark brown under coverts and flight feathers. Suitable habitat includes open grasslands or agricultural fields that are adjacent to a riparian forest or oak woodland. Swainson's hawks primarily nest in riparian forests next to open fields that provide foraging opportunities. Nesting and courtship begin in April. Current threats facing the Swainson's hawk are loss of nesting and foraging habitat, change in agricultural regimes, pesticides, poaching and human disturbances (CDFW 1994).

Survey Results

There were no Swainson's hawks observed nesting or foraging within or adjacent to the project site during the biological surveys; however, there are suitable nesting trees within the BSA. There are large oak trees within the riparian corridor that provide suitable nesting habitat. The surrounding area to the north, east and west contain mostly orchards, which is not considered suitable foraging habitat, however, patches of annual grassland within the BSA and south of the BSA provide nearby foraging habitat. Furthermore, there are multiple CNDDB records of Swainson's hawk nesting within 5 miles of the BSA.

Project Impacts

There will be no impacts to Swainson's hawks with the implementation of avoidance and minimization measures. There will be no impacts to Swainson's hawk foraging habitat. The portion of the BSA that contains open annual grassland is proposed to be used as a staging area for the contractor since there is not enough room to stage within the roadway. There will be no permanent impacts to this area of the BSA. This staging area will be restored to its original pre-construction condition after construction is complete. Direct and indirect impacts to Swainson's hawk nests will be avoided by conducting a pre-construction survey and creating non-disturbance buffers if nesting Swainson's hawks are discovered.

Avoidance and Minimization Efforts

The following recommendations, when implemented, will avoid and minimize impacts to Swainson's hawks:

- If construction is to take place during the nesting season (March 1st – August 31st) then a pre-construction survey for Swainson's hawk will be conducted by a qualified biologist. The survey shall be conducted within seven (7) days prior to the start of construction activities to determine presence or absence of nesting Swainson's hawk.

- If a Swainson's hawk is observed nesting within the project area, or within ¼ mile of the project area, then a ¼ mile to 500-foot radius buffer will be established depending on the nesting pair's level of disturbance around construction equipment. Fencing or other appropriate equipment will be used to indicate the buffer within the County right-of way. Work will not be allowed in the buffer until the young have fledged (able to fly) and are no longer dependent on the nest or the nest fails as determined by a qualified biologist.

- All areas temporarily disturbed by construction activities within the BSA will be re-vegetated and restored to pre-project conditions.

Compensatory Mitigation

There will be no impacts to nesting Swainson's hawks or Swainson's hawk foraging habitat with the implementation of avoidance and minimization measures. No compensatory mitigation is necessary.

Cumulative Effects

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

TRI-COLORED BLACKBIRD

Tri-colored blackbirds are a state candidate species for listing under the CESA and a SSC. They range from southern Oregon through the Central Valley, and coastal regions of California into the northern part of Mexico. Tri-colored blackbirds are medium size birds with black plumage and distinctive red marginal coverts, bordered by whitish feathers. Suitable habitat includes open grasslands, agricultural fields, blackberry brambles and marshes. Tri-colored blackbirds nest in large colonies within agricultural fields, marshes with thick herbaceous vegetation or in clusters of large blackberry bushes. They are nomadic migrators so documenting occurrence at any location does not mean that they will necessarily return to that area. Current threats facing tri-colored blackbirds include loss of habitat due to land conversion, increased predation through human disturbances, and fluctuating water regimes (Churchwell et al. 2005).

Survey Results

There is suitable nesting habitat within the BSA where dense patches of blackberry brambles occur. Further, there are two tri-colored blackbird CNDDB occurrences within 5 miles of the BSA (Occurrence 109 and 260, CNDDB 2017). No tri-colored blackbirds were observed during the biological evaluation.

Project Impacts

With the implementation of avoidance and minimization measures there will be no direct or indirect impacts to tri-colored blackbird.

Avoidance and Minimization Efforts

While there were no tri-colored blackbirds observed within the BSA during the site visit, there is suitable habitat present within the BSA which will likely be impacted by construction activities. The following are recommended avoidance and minimization measures for tri-colored blackbird:

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

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to tri-colored blackbird will occur.

Cumulative Effects

There are no current or planned projects that will have cumulative effects on tri-colored blackbirds that occur within the project BSA.

<u>WESTERN YELLOW BILLED CUCKOO</u>

The yellow-billed cuckoo is federally listed as threatened and is listed as endangered by the State. Yellow-billed cuckoos are medium sized, slender, long-tailed birds that require large blocks of riparian forest habitat. In California, yellow-billed cuckoos are primarily found in expansive riparian forests associated with the Sacramento River. They primarily feed on caterpillars and katydids, when available, but will also feed on tree frogs, cicadas, grasshoppers and other insects. The development of the young is very rapid, with a breeding cycle of 17 days from egg-laying to fledging. The USFWS designated critical habitat in 2014 and critical habitat occurs within 1.5 miles from the project site (79 FR 48547 48652, August, 15, 2014).

Survey Results

The BSA contains a wide corridor of riparian habitat that is in close proximity to the Sacramento River and could provide nesting habitat for western yellow-billed cuckoos. There are many western yellow billed cuckoo CNDDB occurrences along the Sacramento River corridor within 5 miles of the BSA. Occurrence 13 is the closest occurrence to the BSA at approximately 2.85 miles (CNDDB 2017).

In 2015, the USFWS approved a survey protocol for the western yellow-billed cuckoo, which requires that surveyors obtain an ESA 10(a)1(A) recovery permit before a survey is conducted (Halterman et al. 2015). Obtaining a 10(a)1(A) recovery permit takes a minimum of 6 months to obtain. The USFWS also does not allow assumption of presence of western yellow-billed cuckoos. These restrictions make it challenging to conduct presence/absence surveys on projects that might be constructed many years after the environmental documentation is completed. It also presents challenges with analyzing project impacts and developing appropriate mitigation measures.

Protocol level surveys were not conducted nor will they be needed. Western yellow-billed cuckoos are late spring migrants, with typical nesting between late June and late July. Site mobilization and vegetation removal necessary to construct the project will be performed prior to May 15 and construction activities will stay continuous into the western yellow-billed cuckoo nesting season which would preclude the birds from nesting near the construction site. Western yellow-billed cuckoos may already have been precluded from nesting in or near the site due to the heavy volume of traffic on Ord Ferry Road.

Project Impacts

The project will have no effect on western yellow-billed cuckoos or their habitat. Construction activities will require the removal of a narrow strip of riparian vegetation, and could temporarily affect western yellow-billed cuckoo habitat. To ensure no impacts to western yellow-billed cuckoos occur due to the proposed project, the following avoidance and minimization measures will be implemented.

Avoidance and Minimization Efforts

The following recommendations, when implemented, will avoid and minimize impacts to this species:

- Any vegetation removal and/or ground disturbance activities will take place prior to the western yellow-billed cuckoo nesting season (June 15-August 15).

- Construction activities will remain constant from May 1 throughout the western yellow-billed cuckoo nesting season, thus deterring birds from nesting in or near the project area.

- There shall be no staging or ground disturbance activities outside of the BSA.

- Trees removed greater than 4 inches DBH will be re-planted on site at a 3:1 ratio with like kind trees and the project site will be restored to pre-project conditions.

Compensatory Mitigation

No compensatory mitigation will be required since the implementation of the avoidance and minimization measures discussed above will ensure that no impacts to western yellow billed cuckoo will occur.

Cumulative Effects

No cumulative effects to western yellow billed cuckoo will occur, since the project will have no effect on the western yellow billed cuckoo.

MIGRATORY BIRDS

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

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

Survey Results

The riparian habitat within the BSA provides nesting habitat for a variety of migratory bird and raptor species including the yellow breasted chat. During the field survey, no old bird nests were found under the Ord Ferry Road Bridge, however it is possible for cliff swallows, barn swallows, and black phoebes, which commonly nest on the sides or pillars of bridges to occupy the area. A pre-construction survey is recommended prior to construction activities to determine potential locations of active avian species nests within or in close proximity of the BSA.

Avoidance and Minimization Efforts

To avoid impacts to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and the CFGC, the following avoidance and minimization measures are recommended.

<u>The following are avoidance and minimization measures for California avian species of special concern and species protected under the MBTA and the CFGC.</u>

- Any vegetation removal and/or ground disturbance activities should take place during the avian non-breeding season (September 1 – January 31).
- If construction is to begin within the avian breeding season (February 1 – August 31) then a migratory bird and raptor survey shall be conducted within the BSA by a qualified biologist. A qualified biologist shall:
    - Conduct a survey for all birds protected by the MBTA and CFGC within seven (7) days prior to construction activities, and map all nests located within 200 feet of construction areas;
    - Develop buffer zones around active nests as recommended by a qualified biologist. Construction activity shall be prohibited within the buffer zones until the young have fledged or the nest fails. Nests shall be monitored at least once per week and a report submitted to the County monthly.

  - o If construction activities stop for more than ten (10) days then another migratory bird and raptor survey shall be conducted within seven (7) days prior to the continuation of construction activities.

- All staging and construction activity will be limited to designated areas within the BSA and designated routes for construction equipment shall be established in order to limit disturbance to the surrounding area.

<u>The following are recommended exclusion and monitoring activities to avoid and minimize impacts to avian species protected under the MBTA and CFGC that have the potential to nest on the existing Ord Ferry Road bridge.</u>

- The removal of the current Ord Ferry Road bridge should be conducted during the avian non-breeding season (September 1 – January 31) so as to avoid impacts to avian species that may potentially nest on the bridge.

- If the current Ord Ferry Road bridge cannot be removed prior to the avian breeding season (February 1 – August 31) then the following exclusion and monitoring activities shall take place.

  <u>Exclusion</u>

  - ▪ All avian nests should be removed from the bridge prior to February 1, if construction will begin after March 1, so as to deter avian species from nesting on the bridge.

  - ▪ Any exclusionary devices that are deemed necessary in order to prevent avian species from nesting on the existing bridge should be established by a qualified biologist prior to February 1. Exclusionary devices shall be maintained by the County or a qualified biologist until the current bridge is removed or the end of the avian breeding season.

  <u>Monitoring</u>

  - ▪ Weekly, or as necessary, monitoring or additional exclusion activities will be conducted by a qualified biologist on the current Ord Ferry Bridge after February 1 until the current bridge is removed or the end of the avian breeding season (August 31).

Project Impacts

With the implementation of avoidance and minimization measures specified above there will be no direct or indirect impacts to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and CFGC.

Compensatory Mitigation

There will be no compensatory mitigation necessary for project activities in regards to avian species of special concern (i.e. yellow breasted chat) or avian species protected under the MBTA and CFGC.

Cumulative Effects

There are no foreseeable new actions that have potential to threaten migratory birds within the BSA or contribute to cumulative effects of migratory bird species.

WESTERN RED BAT

The western red bat can be found in California from Shasta County to the Mexican border, west of the Sierra Nevada/Cascade crest and deserts. The species is typically associated with riparian areas and prefers sites with a mosaic of habitats that includes trees for roosting and open areas for foraging. Western red bats typically roost solitarily in dense tree foliage; however, nursery colonies may include many females and their young. Females become pregnant in spring and give birth within 80-90 days. They forage over a wide assortment of habitat types for a variety of insects, but primarily feed on moths.

There has been an increase in awareness regarding declining bat populations across the United States. Some species of bats are now recognized as SSC in California. Bats have little to no regulatory protection and are largely protected under the CEQA process. The CEQA states that "No projects which would cause significant environmental effects should be approved as proposed if there are feasible alternatives or mitigation measures that would lessen those effects."

According to the CEQA, impacts to biological resources are considered "significant" if, among other things, a proposed project will:

1. 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 CDFW or USFWS;

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS;

3. 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.

The destruction or disturbance of a bat maternity roost is considered a significant impact under the CEQA definition of “significant”. If significant impacts to a maternity bat roosting colony are found then project alternatives and mitigation measures should be implemented.

Survey Results

There is suitable roosting habitat for western red bats within the riparian habitat present in the BSA.

Avoidance and Minimization Efforts

To avoid impacts to western red bats and other tree roosting bat species, the following avoidance and minimization measures are recommended.

1. Removal of trees and any trimming of trees within the BSA shall occur outside of the pupping season for western red bats (i.e. when females give birth and raise young). For the purposes of implementation of this measure, the pupping season is considered to be from April 15 through August 15.

Project Impacts

With the implementation of avoidance and minimization measures specified above there will be no direct or indirect impacts to western red bats or other roosting bat species.

Compensatory Mitigation

There will be no compensatory mitigation required for bat species of special concern, including western red bats.

Cumulative Effects

There are no foreseeable new actions that have potential to threaten western red bats within the BSA or contribute to cumulative effects of bat species.

5 Results: Permits and Technical Studies for Special Laws or Conditions

Federal Endangered Species Act Consultation Summary

The USFWS was contacted in April 2016 and March of 2018, for a list of endangered, threatened, sensitive and rare species, and their habitats within the project's BSA. The NMFS was contacted to obtain a list of endangered and threatened fish species and critical habitat.

The proposed project has been determined to have no effect on Conservancy fairy shrimp, valley elderberry longhorn beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, California red-legged frog, delta smelt, green sturgeon, Sacramento River winter-run Chinook salmon, or western yellow-billed cuckoo. However, the project may affect, and is likely to adversely affect GGS, CV steelhead, and CV spring-run Chinook salmon. In addition, the project may affect, but is not likely to adversely modify CV steelhead critical habitat.

As a result of impacts to federally listed species due to the proposed project, Caltrans will initiate formal consultation with the USFWS and NMFS for impacts to CV spring run Chinook, CV steelhead, and GGS and to obtain concurrence that there will be no impacts to the federally listed species listed above.

Federal Fisheries and Essential Fish Habitat Consultation Summary

An EFH assessment was conducted to determine the potential impacts to EFH by the proposed Project. NOAA's National Marine Fisheries Service EFH database was consulted on March 15, 2018, regarding Little Chico Creek within the Project BSA. There is no EFH located within the BSA, therefore, the Project will have no effect on EFH and consultation is not required.

California Endangered Species Act Consultation Summary

The CDFW was contacted in December of 2016 and March of 2018, for a list of endangered, threatened, sensitive and rare species, and their habitats within the project's BSA. The list was later referenced to determine appropriate biological and botanical surveys and potential species occurrence within the project BSA. The County will obtain an Incidental Take Permit or consistency determination authorizing activities that may impact CV spring run Chinook salmon or GGS habitat or have the potential to take CV spring run Chinook or GGS.

Wetlands and Other Waters Coordination Summary

Gallaway Enterprises conducted a Delineation of WOTUS within the BSA.

The project site was surveyed on-foot by Gallaway Enterprises staff on December 1, 2016 and April 12 and October 4, 2017 to identify potentially jurisdictional features. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the United States Army Corps of Engineers Wetlands Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (2008). The boundaries of non-tidal, non-wetland waters, when present, were delineated at the OHWM as defined in 33 Code of Federal Regulations (CFR) 328.3 and further described in the U.S. Army Corps of Engineers *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (2008). The OHWM represents the limit of Corps jurisdiction over non-tidal waters (e.g., streams and ponds) in the absence of adjacent wetlands (33 CFR 328.04) (Curtis, et. al. 2011).

A number of wetland and other water features will be impacted by the project activities. As there are jurisdictional other waters that will be impacted by project activities, a CDFW §1602 Streambed Alteration Agreement, RWQCB §401 Water Quality Certification permit and a Corps Nationwide §404 14 permit are necessary. The project will result in 0.29 acre of temporary impacts and 0.05 acre of permanent impacts to jurisdictional wetlands and 0.06 acre (69.8 linear feet) of temporary and 0.02 acre (292.2 linear feet) of permanent impacts to other waters. Mitigation for impacts to jurisdictional WOTUS will be addressed through the purchase of credits at a Corps approved mitigation bank or payment to a Corps approved in-lieu fund.

Invasive Species

Many non-native plant species occur in California's natural lands. Some of these non-natives have become naturalized and are relatively benign; however, there are a number of these non-natives that are considered highly invasive. The non-native plants that are considered invasive are tracked and ranked by their invasiveness by the United States Department of Agricultural (USDA) Natural Resource Conservation Service (NRCS) and the California

Invasive Plant Council (Cal-IPC). Within the BSA 14 invasive plant species were observed that are included on the USDA and/or Cal-IPC invasive and noxious weed plant list as having a moderate or higher degree of invasiveness in California **(Table 4)**. It is recommended that general best management practices (BMP) be implemented prior and during construction activities as recommended under the Cal-IPC Preventing the Spread of Invasive Plants: Best Management Practices for Transportation and Utility Corridors (2012). The following are the recommended general BMP's under Cal-IPC.

- Schedule activities to minimize potential for introduction and spread of invasive plants.
- Designate specific areas for cleaning tools, vehicles, equipment, clothing and gear.
- Designate waste disposal areas for invasive plant materials, and contain invasive plant material during transport.
- Plan travel routes to avoid areas infested with invasive plants.
- Clean tools, equipment, and vehicles before transporting materials and before entering and leaving worksites.
- Clean clothing, footwear and gear before leaving infested areas.
- Prepare worksites to limit the introduction and spread of invasive plants.
- Minimize soil and vegetation disturbance.

Wildlife Migratory Corridor

The BSA is a known travel corridor for migratory deer and other wildlife species. As such, the design of the project should allow for unhindered movement of wildlife under the bridges. ESA and exclusion fencing will be installed in a manner that does not restrict wildlife movement or direct wildlife to dangerous or unsafe areas. Worker awareness educational training will provide information regarding the various animals, such as deer, porcupines, skunk, deer, turtles, snakes, raccoons, turkeys, and coyotes that are expected to move through the construction area. Open trenches, pits, and other areas within the construction site that could entrap wildlife will be covered during non-construction times.

Table 4. Invasive Plant Species Identified within the BSA.

Scientific Name	Common Name	Ecology	CAL-IPC	USDA California State
Avena barbata	Wild Oats	Winter annual grass that grows in every grassland area in California. It does well in sandy/poor soils, often on the roadsides. It is one of the annual grasses that was introduces as a forage species and has replaced the native perennial grasses.	Moderate	N/A
Brassica nigra	Black mustard	Winter annual herb that grows allelopathic chemicals that prevent germination of native plants. The spread of this species can increase frequency of fires in chaparral and coastal sage scrub, changing these habitats to annual grassland.	Moderate	N/A
Bromus diandrus	Ripgut brome	Annual grass that has displaced much of the native grass throughout California. It becomes very dry and flammable during the dry season, increasing wildfire frequency, leading to conversion of shrubland and woodland to grassland. This species is reported to hybridize with downy and red brome.	Moderate	N/A

Scientific Name	Common Name	Ecology	CAL-IPC	USDA California State
Carduus pycnocephalus	Italian thistle	Winter annual forb widely distributed in open disturbed sites, roadsides, pastures, annual grasslands and waste areas.	Moderate	C list
Centaurea solstitialis	Yellow star-thistle	Winter annual invading 12 million acres in California. This species inhabits open hills, grasslands, open woodlands, fields, roadsides, and rangelands. It is considered one of the most serious rangeland weeds as it propagates rapidly by seed, and one large plant can produce 75,000 seeds.	High	CW
Cirsium vulgare	Bull thistle	Perennial or biennial forb widespread in California. Common in coastal grasslands, edges of marshes, in meadows and wet areas, and in forest openings below 7,000 feet. Invades recently or repeatedly disturbed areas.	Moderate	N/A
Cynodon dactylon	Bermuda grass	Creeping perennial grass commonly used in garden plantings as turf species. Readily escapes to natural lands, particularly in riparian and wet areas.	Moderate	C list

Scientific Name	Common Name	Ecology	CAL-IPC	USDA California State
Festuca perennis	Italian ryegrass	Annual grass found throughout California except in desert ecosystems. It prefers areas with fertile, well-drained soils, including roadsides, fields, orchards and vineyards. It is commonly cultivated for erosion control, pasture forage, and turf.	Moderate	N/A
Ficus carica	Edible fig	Shrub to tree. Multiple cultivars present, but research is underway to determine which of the cultivars are invasive.	Moderate	N/A
Lythrum hyssopifolium	Hyssop loosestrife	Perennial forb that invades wetlands, including seasonal wetlands, ditches and cultivated fields. Tolerates some salinity but is sensitive to heavy frost.	Moderate	N/A
Mentha pulegium	Pennyroyal	Perennial forb in the mint family. Found in flooded or seasonally wet areas in the Sierra foothills, Central Valley, and coastal communities in California.	Moderate	N/A
Phalaris aquatica	Harding grass	Perennial grass found throughout California since it has been used widespread as a forage species and for re-vegetating after fires. Typically found along roadsides and grasslands.	Moderate	

Scientific Name	Common Name	Ecology	CAL-IPC	USDA California State
Rubus armeniacus	Himalayan blackberry	Sprawling, evergreen shrub found throughout much of northern California. Often associated with moist areas and riparian areas.	High	N/A
Torilis arvensis	Hedge-parsley	Occurs in disturbed habitats throughout California. The mature fruit has small hooks that cling to clothing, hair, or fur, facilitating long distance dispersal.	Moderate	N/A

CODE DESIGNATIONS

Limited – ecological impacts are minor or not enough information; low to moderate rates of invasiveness; distribution is generally limited, but these species may be locally persistent and problematic.

Moderate – Ecological impacts are substantial, but not sever; moderate to high rates of dispersal but establishment dependent on ecological disturbance; limited to widespread distribution.

High – Ecological impacts sever; moderate to high rates of dispersal and establishment; widely distributed.

CW = C List (noxious weeds)

6 References

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Appendix A – Species Lists

United States Fish and Wildlife Service, IPaC

National Marine Fisheries Service

California Department of Fish and Game Natural Diversity Database

California Native Plant Society

Essential Fish Habitat Mapper

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE RareFind

Query Summary:
Quad IS (Ord Ferry (3912168) OR Nord (3912178) OR Richardson Springs (3912177) OR Hamilton City (3912261) OR Glenn (3912251) OR Foster Island (3912271) OR Chico (3912167) OR Llano Seco (3912158) OR Nelson (3912157))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Other Status	Habitats
Agelaius tricolor	tricolored blackbird	Birds	ABPBXB0020	951	13	None	Candidate Endangered	G2G3	S1S2	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Freshwater marsh, Marsh & swamp, Swamp, Wetland
Anthicus antiochensis	Antioch Dunes anthicid beetle	Insects	IICOL49020	6	1	None	None	G1	S1	null	null	Interior dunes
Anthicus sacramento	Sacramento anthicid beetle	Insects	IICOL49010	13	2	None	None	G1	S1	null	IUCN_EN-Endangered	Interior dunes
Antrozous pallidus	pallid bat	Mammals	AMACC10010	411	1	None	None	G5	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority	Chaparral, Coastal scrub, Desert wash, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Riparian woodland, Sonoran desert scrub, Upper montane coniferous forest, Valley & foothill grassland
Ardea alba	great egret	Birds	ABNGA04040	41	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Ardea herodias	great blue heron	Birds	ABNGA04010	147	2	None	None	G5	S4	null	CDF_S-Sensitive, IUCN_LC-Least Concern	Brackish marsh, Estuary, Freshwater marsh, Marsh & swamp, Riparian forest, Wetland
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Dicots	PDFAB0F8R3	18	4	None	None	G2T1	S1	1B.1	BLM_S-Sensitive	Meadow & seep, Valley & foothill grassland, Wetland
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1957	6	None	None	G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Coastal prairie, Coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, Valley & foothill grassland
Balsamorhiza macrolepis	big-scale balsamroot	Dicots	PDAST11061	50	1	None	None	G2	S2	1B.2	BLM_S-Sensitive,	Chaparral, Cismontane

											USFS_S-Sensitive	woodland, Ultramafic, Valley & foothill grassland
Branchinecta conservatio	Conservancy fairy shrimp	Crustaceans	ICBRA03010	43	5	Endangered	None	G2	S2	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta lynchi	vernal pool fairy shrimp	Crustaceans	ICBRA03030	765	17	Threatened	None	G3	S3	null	IUCN_VU-Vulnerable	Valley & foothill grassland, Vernal pool, Wetland
Branchinecta mesovallensis	midvalley fairy shrimp	Crustaceans	ICBRA03150	128	1	None	None	G2	S2S3	null	null	Vernal pool, Wetland
Brasenia schreberi	watershield	Dicots	PDCAB01010	33	1	None	None	G5	S3	2B.3	null	Marsh & swamp, Wetland
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2460	29	None	Threatened	G5	S3	null	BLM_S-Sensitive, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern	Great Basin grassland, Riparian forest, Riparian woodland, Valley & foothill grassland
Campylopodiella stenocarpa	flagella-like atractylocarpus	Bryophytes	NBMUS84010	3	1	None	None	G5	S1?	2B.2	null	Cismontane woodland
Castilleja rubicundula var. rubicundula	pink creamsacs	Dicots	PDSCR0D482	30	2	None	None	G5T2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland, Meadow & seep, Ultramafic, Valley & foothill grassland
Clarkia gracilis ssp. albicaulis	white-stemmed clarkia	Dicots	PDONA050J1	32	1	None	None	G5T2T3	S2S3	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Chaparral, Cismontane woodland, Ultramafic
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Marsh	CTT52410CA	60	7	None	None	G3	S2.1	null	null	Marsh & swamp, Wetland
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	155	21	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Sensitive, NABCI_RWL-Red Watch List, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Riparian forest
Cryptantha crinita	silky cryptantha	Dicots	PDBOR0A0Q0	57	1	None	None	G2	S2	1B.2	BLM_S-Sensitive, USFS_S-Sensitive	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland, Valley & foothill grassland
Delphinium recurvatum	recurved larkspur	Dicots	PDRAN0B1J0	100	1	None	None	G2?	S2?	1B.2	BLM_S-Sensitive	Chenopod scrub, Cismontane woodland, Valley & foothill grassland
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	Insects	IICOL48011	271	23	Threatened	None	G3T2	S2	null	null	Riparian scrub
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1322	3	None	None	G3G4	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive	Aquatic, Artificial flowing waters, Klamath/North coast flowing waters, Klamath/North coast standing waters, Marsh & swamp, Sacramento/San Joaquin flowing waters, Sacramento/San

												Joaquin standing waters, South coast flowing waters, South coast standing waters, Wetland
Erethizon dorsatum	North American porcupine	Mammals	AMAFJ01010	508	14	None	None	G5	S3	null	IUCN_LC-Least Concern	Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Lower montane coniferous forest, North coast coniferous forest, Upper montane coniferous forest
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	294	4	None	None	G5T4	S3S4	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority	Chaparral, Cismontane woodland, Coastal scrub, Valley & foothill grassland
Euphorbia hooveri	Hoover's spurge	Dicots	PDEUP0D150	29	1	Threatened	None	G1	S1	1B.2	null	Vernal pool, Wetland
Fritillaria eastwoodiae	Butte County fritillary	Monocots	PMLIL0V060	235	1	None	None	G3Q	S3	3.2	USFS_S-Sensitive	Chaparral, Cismontane woodland, Lower montane coniferous forest, Ultramafic
Fritillaria pluriflora	adobe-lily	Monocots	PMLIL0V0F0	107	6	None	None	G2G3	S2S3	1B.2	BLM_S-Sensitive, SB_RSABG-Rancho Santa Ana Botanic Garden	Chaparral, Cismontane woodland, Ultramafic, Valley & foothill grassland
Great Valley Cottonwood Riparian Forest	Great Valley Cottonwood Riparian Forest	Riparian	CTT61410CA	56	22	None	None	G2	S2.1	null	null	Riparian forest
Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	Riparian	CTT61420CA	68	21	None	None	G2	S2.2	null	null	Riparian forest
Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	Riparian	CTT61430CA	33	10	None	None	G1	S1.1	null	null	Riparian forest
Great Valley Willow Scrub	Great Valley Willow Scrub	Riparian	CTT63410CA	18	7	None	None	G3	S3.2	null	null	Riparian scrub
Haliaeetus leucocephalus	bald eagle	Birds	ABNKC10010	327	2	Delisted	Endangered	G5	S3	null	BLM_S-Sensitive, CDF_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern	Lower montane coniferous forest, Oldgrowth
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Dicots	PDMAL0H0R3	173	12	None	None	G5T3	S3	1B.2	SB_RSABG-Rancho Santa Ana Botanic Garden	Freshwater marsh, Marsh & swamp, Wetland
Imperata brevifolia	California satintail	Monocots	PMPOA3D020	32	1	None	None	G4	S3	2B.1	SB_SBBG-Santa Barbara Botanic Garden, USFS_S-Sensitive	Chaparral, Coastal scrub, Meadow & seep, Mojavean desert scrub, Riparian scrub, Wetland
Juncus	Red Bluff	Monocots	PMJUN011L2	62	1	None	None	G2T2	S2	1B.1	BLM_S-	Chaparral,

leiospermus var. leiospermus	dwarf rush										Sensitive, USFS_S-Sensitive	Cismontane woodland, Meadow & seep, Valley & foothill grassland, Vernal pool, Wetland
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	3	None	None	G5	S3S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Lower montane coniferous forest, Oldgrowth, Riparian forest
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	126	2	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, WBWG_H-High Priority	Cismontane woodland, Lower montane coniferous forest, Riparian forest, Riparian woodland
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	236	4	None	None	G5	S4	null	IUCN_LC-Least Concern, WBWG_M-Medium Priority	Broadleaved upland forest, Cismontane woodland, Lower montane coniferous forest, North coast coniferous forest
Laterallus jamaicensis coturniculus	California black rail	Birds	ABNME03041	303	1	None	Threatened	G3G4T1	S1	null	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, NABCI_RWL-Red Watch List, USFWS_BCC-Birds of Conservation Concern	Brackish marsh, Freshwater marsh, Marsh & swamp, Salt marsh, Wetland
Lepidurus packardi	vernal pool tadpole shrimp	Crustaceans	ICBRA10010	324	23	Endangered	None	G4	S3S4	null	IUCN_EN-Endangered	Valley & foothill grassland, Vernal pool, Wetland
Limnanthes floccosa ssp. californica	Butte County meadowfoam	Dicots	PDLIM02042	21	13	Endangered	Endangered	G4T1	S1	1B.1	SB_RSABG-Rancho Santa Ana Botanic Garden	Valley & foothill grassland, Vernal pool, Wetland
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Dicots	PDLIM02043	54	5	None	None	G4T4	S3	4.2	null	Chaparral, Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland
Linderiella occidentalis	California linderiella	Crustaceans	ICBRA06010	434	14	None	None	G2G3	S2S3	null	IUCN_NT-Near Threatened	Vernal pool
Myotis yumanensis	Yuma myotis	Mammals	AMACC01020	263	2	None	None	G5	S4	null	BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_LM-Low-Medium Priority	Lower montane coniferous forest, Riparian forest, Riparian woodland, Upper montane coniferous forest
Northern Hardpan Vernal Pool	Northern Hardpan Vernal Pool	Herbaceous	CTT44110CA	126	1	None	None	G3	S3.1	null	null	Vernal pool, Wetland
Northern Volcanic Mud Flow Vernal Pool	Northern Volcanic Mud Flow Vernal Pool	Herbaceous	CTT44132CA	7	1	None	None	G1	S1.1	null	null	Vernal pool, Wetland
Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	Fish	AFCHA0209K	31	4	Threatened	None	G5T2Q	S2	null	AFS_TH-Threatened	Aquatic, Sacramento/San Joaquin flowing waters
Oncorhynchus	chinook	Fish	AFCHA0205A	13	1	Threatened	Threatened	G5	S1	null	AFS_TH-	Aquatic,

tshawytscha pop. 6	salmon - Central Valley spring-run ESU										Threatened	Sacramento/San Joaquin flowing waters
Pandion haliaetus	osprey	Birds	ABNKC01010	502	7	None	None	G5	S4	null	CDF_S-Sensitive, CDFW_WL-Watch List, IUCN_LC-Least Concern	Riparian forest
Paronychia ahartii	Ahart's paronychia	Dicots	PDCAR0L0V0	58	2	None	None	G3	S3	1B.1	BLM_S-Sensitive	Cismontane woodland, Valley & foothill grassland, Vernal pool, Wetland
Rana boylii	foothill yellow-legged frog	Amphibians	AAABH01050	1604	3	None	Candidate Threatened	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive	Aquatic, Chaparral, Cismontane woodland, Coastal scrub, Klamath/North coast flowing waters, Lower montane coniferous forest, Meadow & seep, Riparian forest, Riparian woodland, Sacramento/San Joaquin flowing waters
Rhynchospora californica	California beaked-rush	Monocots	PMCYP0N060	9	2	None	None	G1	S1	1B.1	BLM_S-Sensitive	Freshwater marsh, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Wetland
Riparia riparia	bank swallow	Birds	ABPAU08010	297	37	None	Threatened	G5	S2	null	BLM_S-Sensitive, IUCN_LC-Least Concern	Riparian scrub, Riparian woodland
Sidalcea robusta	Butte County checkerbloom	Dicots	PDMAL110P0	34	5	None	None	G2	S2	1B.2	BLM_S-Sensitive	Chaparral, Cismontane woodland
Spea hammondii	western spadefoot	Amphibians	AAABF02020	462	4	None	None	G3	S3	null	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened	Cismontane woodland, Coastal scrub, Valley & foothill grassland, Vernal pool, Wetland
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Monocots	PMPOT03091	21	1	None	None	G5T5	S3	2B.2	null	Marsh & swamp, Wetland
Taxidea taxus	American badger	Mammals	AMAJF04010	544	1	None	None	G5	S3	null	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern	Alkali marsh, Alkali playa, Alpine, Alpine dwarf scrub, Bog & fen, Brackish marsh, Broadleaved upland forest, Chaparral, Chenopod scrub, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Desert dunes, Desert wash, Freshwater marsh, Great Basin grassland, Great Basin scrub, Interior

												dunes, Ione formation, Joshua tree woodland, Limestone, Lower montane coniferous forest, Marsh & swamp, Meadow & seep, Mojavean desert scrub, Montane dwarf scrub, North coast coniferous forest, Oldgrowth, Pavement plain, Redwood, Riparian forest, Riparian scrub, Riparian woodland, Salt marsh, Sonoran desert scrub, Sonoran thorn woodland, Ultramafic, Upper montane coniferous forest, Upper Sonoran scrub, Valley & foothill grassland
Thamnophis gigas	giant gartersnake	Reptiles	ARADB36150	365	15	Threatened	Threatened	G2	S2	null	IUCN_VU-Vulnerable	Marsh & swamp, Riparian scrub, Wetland
Tuctoria greenei	Greene's tuctoria	Monocots	PMPOA6N010	48	3	Endangered	Rare	G1	S1	1B.1	null	Vernal pool, Wetland
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	482	2	Endangered	Endangered	G5T2	S2	null	IUCN_NT-Near Threatened, NABCI_YWL-Yellow Watch List	Riparian forest, Riparian scrub, Riparian woodland
Wolffia brasiliensis	Brazilian watermeal	Monocots	PMLEM03020	6	3	None	None	G5	S1	2B.3	null	Marsh & swamp, Wetland

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

33 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3912271, 3912178, 3912177, 3912261, 3912168, 3912167, 3912251 3912158 and 3912157;

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
Astragalus pauperculus	depauperate milk-vetch	Fabaceae	annual herb	Mar-Jun	4.3	S4	G4
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Azolla microphylla	Mexican mosquito fern	Azollaceae	annual / perennial herb	Aug	4.2	S4	G5
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	2B.3	S3	G5
Calycadenia oppositifolia	Butte County calycadenia	Asteraceae	annual herb	Apr-Jul	4.2	S3	G3
Campylopodiella stenocarpa	flagella-like atractylocarpus	Dicranaceae	moss		2B.2	S1?	G5
Castilleja rubicundula var. rubicundula	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	Apr-Jun	1B.2	S2	G5T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Clarkia gracilis ssp. albicaulis	white-stemmed clarkia	Onagraceae	annual herb	May-Jul	1B.2	S2S3	G5T2T3
Claytonia palustris	marsh claytonia	Montiaceae	perennial herb	May-Oct	4.3	S4	G4
Cryptantha crinita	silky cryptantha	Boraginaceae	annual herb	Apr-May	1B.2	S2	G2
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Erythranthe glaucescens	shield-bracted monkeyflower	Phrymaceae	annual herb	Feb-Aug(Sep)	4.3	S3S4	G3G4
Euphorbia hooveri	Hoover's spurge	Euphorbiaceae	annual herb	Jul-Sep(Oct)	1B.2	S1	G1
Fritillaria eastwoodiae	Butte County fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	3.2	S3	G3Q
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2S3	G2G3
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous	Sep-May	2B.1	S3	G4

			herb				
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	1B.1	S2	G2T2
Limnanthes floccosa ssp. californica	Butte County meadowfoam	Limnanthaceae	annual herb	Mar-May	1B.1	S1	G4T1
Limnanthes floccosa ssp. floccosa	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	4.2	S3	G4T4
Monardella venosa	veiny monardella	Lamiaceae	annual herb	May,Jul	1B.1	S1	G1
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	Apr-Jun	4.3	S4	G4
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Paronychia ahartii	Ahart's paronychia	Caryophyllaceae	annual herb	Feb-Jun	1B.1	S3	G3
Polygonum bidwelliae	Bidwell's knotweed	Polygonaceae	annual herb	Apr-Jul	4.3	S4	G4
Rhynchospora californica	California beaked-rush	Cyperaceae	perennial rhizomatous herb	May-Jul	1B.1	S1	G1
Sidalcea robusta	Butte County checkerbloom	Malvaceae	perennial rhizomatous herb	Apr,Jun	1B.2	S2	G2
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S3	G5T5
Tuctoria greenei	Greene's tuctoria	Poaceae	annual herb	May-Jul(Sep)	1B.1	S1	G1
Wolffia brasiliensis	Brazilian watermeal	Araceae	perennial herb (aquatic)	Apr,Dec	2B.3	S1	G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 22 March 2018].

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From:	Melissa Murphy
To:	nmfwwcrca.specieslist@noaa.gov
Subject:	Ord Ferry Bridge Replacement Project Federal Project Number BRLS-5912(103)
Date:	Thursday, March 15, 2018 2:31:00 PM

Quad Name **Ord Ferry**

Quad Number **39121-F8**

ESA Anadromous Fish

SONCC Coho ESU (T) -

CCC Coho ESU (E) -

CC Chinook Salmon ESU (T) -

CVSR Chinook Salmon ESU (T) - **X**

SRWR Chinook Salmon ESU (E) - **X**

NC Steelhead DPS (T) -

CCC Steelhead DPS (T) -

SCCC Steelhead DPS (T) -

SC Steelhead DPS (E) -

CCV Steelhead DPS (T) - **X**

Eulachon (T) -

sDPS Green Sturgeon (T) - **X**

ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -

CCC Coho Critical Habitat -

CC Chinook Salmon Critical Habitat -

CVSR Chinook Salmon Critical Habitat - **X**

SRWR Chinook Salmon Critical Habitat - **X**

NC Steelhead Critical Habitat -

CCC Steelhead Critical Habitat -

SCCC Steelhead Critical Habitat -

SC Steelhead Critical Habitat -

CCV Steelhead Critical Habitat - **X**

Eulachon Critical Habitat -

sDPS Green Sturgeon Critical Habitat - **X**

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 -

Melissa Murphy
COO/Biologist/QSP
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A DBE certified business dedicated to exceptional client services.

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: March 22, 2018
Consultation Code: 08ESMF00-2018-SLI-1636
Event Code: 08ESMF00-2018-E-04730
Project Name: Ord Ferry Road Bridge Replacement

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: 08ESMF00-2018-SLI-1636

Event Code: 08ESMF00-2018-E-04730

Project Name: Ord Ferry Road Bridge Replacement

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Description: Replace Existing Bridge

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/39.631671612139044N121.93056024208184W

Counties: Butte, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Yellow-billed Cuckoo Coccyzus americanus Population: Western U.S. DPS There is proposed critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas 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 Rana draytonii 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

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* 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 *Desmocerus californicus dimorphus* 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 *Branchinecta conservatio* 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 *Branchinecta lynchi* 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 *Lepidurus packardi* 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

Critical habitats

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

EFH Data Notice: Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional Fishery Management Councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Northwest Regional Office
Southwest Regional Office
Pacific GIS Mapping Tool
Alaska Regional Office

Query Results

Map Scale = 1:72,224
Degrees, Minutes, Seconds: Latitude = 39º37'48" N, Longitude = 121º55'48" E
Decimal Degrees: Latitude = 39.63, Longitude = -121.93

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No EFH was identified at the report location.

Pacific Salmon EFH

Show	Link	HUC Name	Species/Management Unit	Life stage(s) Found at Location	Management Council	FMP
		Butte Creek	Chinook Salmon	All	Pacific	Pacific Coast Salmon Plan

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data. ****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**
Pacific Coastal Pelagic Species, Jack Mackerel, Pacific (Chub) Mackerel, Pacific Sardine, Northern Anchovy - Central Subpopulation, Northern Anchovy - Northern Subpopulation, **Pacific Highly Migratory Species**, Bigeye Thresher Shark - North Pacific, Bluefin Tuna - Pacific, Dolphinfish (Dorado or Mahimahi) - Pacific, Pelagic Thresher Shark - North Pacific, Swordfish - North Pacific, **West Coast Salmon**, All species and stocks

Appendix B - Species Observed during the 2017 Site Visits

Plant Species Observed within the Ord Ferry Project 12/1/16, 6/6/17 & 10/4/17	
Scientific Name	**Common Name**
Abutilon theophrasti	Velvet leaf
Amaranthus sp.	Pigweed
Artemisia douglasiana	California mugwort
Avena barbata	Wild oats
Baccharis salicifolia ssp. salicifolia	Mule's-fat
Brassica nigra	Black mustard
Bromus carinatus	California brome
Bromus diandrus	Rip-gut brome
Capsella bursa-pastoris	Shepard's purse
Carduus pycnocephalus	Italian thistle
Carex barbarae	Valley sedge
Carex praegracilis	Field sedge
Centaurea solstitialis	Yellow star thistle
Cephalanthus occidentalis	Common buttonbush
Chamaemelum fuscatum	Dusky dog fennel
Chenopodium album	Lamb's quarters
Cichorium intybus	Chicory
Cirsium vulgare	Bull thistle
Convulvulus arvensis	Bindweed
Croton setiger	Turkey-mullein
Cynodon dactylon	Bermuda grass
Cyperus eragrostis	Tall nutsedge
Cyperus strigosus	False nutsedge
Daucus carota	Queen Anne's-lace
Eleocharis macrostachya	Pale spike-rush
Epilobium sp.	Willowherb
Epilobium brachycarpum	Tall willowherb
Erigeron bonariensis	South American horseweed
Euphorbia maculata	Spotted spurge
Festuca arundinacea	Tall fescue
Festuca myuros	Rattail fescue
Festuca perennis	Rye-grass
Ficus carica	Wild fig
Fraxinus latifolia	Oregon ash
Galium aparine	Bedstraw
Geranium dissectum	Cut-leaved geranium
Helminthotheca echioides	Bristly ox-tongue
Hordeum murinum	Wall hare barley
Juglans hindsii	Black walnut
Juncus balticus ssp. ater	Baltic rush
Juncus effusus	Pacific rush
Juncus oxymeris	Pointed rush
Kickxia elatine	Sharp-leaved fluellin

Scientific Name	Common Name
Lactuca serriola	Prickly lettuce
Lemna sp.	Duckweed
Leontodon saxatilis	Hawkbit
Lotus corniculatus	Bird's-foot trefoil
Ludwigia peploides ssp. montevidensis	Montevideo waterweed
Lythrum hyssopifolia	Hyssop loosestrife
Malva sp.	Bull mallow
Marah fabacea	California manroot
Mentha arvensis	Wild mint
Mentha pulegium	Pennyroyal
Paspalum dilatatum	Dallisgrass
Paspalum distichum	Knotgrass
Persicaria hydropiperoides	Water pepper
Phalaris aquatica	Harding grass
Phalaris caroliniana	Carolina canarygrass
Phalaris paradoxa	Hood canarygrass
Phytolacca americana	American pokeweed
Plantago lanceolata	English plantain
Polygonum aviculare	Prostrate knotweed
Polypogon monspeliensis	Rabbitsfoot grass
Populus fremontii	Fremont's cottonwood
Portulaca oleracea	Common purslane
Prunus dulcis	Almond
Quercus lobata	Valley oak
Raphanus sp.	Wild radish
Rosa californica	California wild rose
Rubus armeniacus	Himalayan blackberry
Rumex sp.	Sorrel
Rumex crispus	Curly dock
Salix exigua	Sandbar willow
Salix gooddingii	Goodding's black willow
Salix lasiolepis	Arroyo willow
Sambucus nigra ssp. caerulea	Blue elderberry
Schoenoplectus acutus	Hardstem bulrush
Senecio vulgare	Old-man-in-the-Spring
Setaria parviflora	Marsh bristlegrass
Silybum marianum	Milk thistle
Sonchus asper	Sow thistle
Sorghum halepense	Johnsongrass
Spergularia bocconi	Sandspurry
Stachys rigida var. rigida	Rigid hedge nettle
Stellaria media	Common chickweed
Torilis arvensis	Hedge parsley
Toxicodendron diversilobum	Poison oak
Tragopogon sp.	Salsify

Scientific Name	Common Name
Typha latifolia	Cattails
Verbascum blattaria	Moth mullein
Verbena sp.	Vervain
Vicia villosa	Winter vetch
Vitis californica	Wild grape
Xanthium strumarium	Rough cocklebur
Zeltnera venusta	June centaury

Appendix C– Draft Delineation of Waters of the US Map

Draft Delineation of Waters of the U.S.

Other Waters of the U.S.

Label	Cowardin	Type	Designation	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
OW01	R4SB5	Other Waters	RPW/Intermittent	39.63036	-121.93367	33.0	58.9	1942.6	0.04
OW1A	R4SB5	Other Waters	RPW/Intermittent	39.63150	-121.93408	NA	NA	187.0	0.00
OW02	R4SB5	Other Waters	RPW/Perennial	39.63141	-121.92858	39.8	118.0	4701.2	0.11
OW03	R4SB5	Other Waters	RPW/Intermittent	39.63114	-121.93069	17.0	344.6	5857.4	0.13
OW04	R4SB5	Other Waters	RPW/Intermittent	39.63078	-121.93208	60.0	280.9	16856.8	0.39
OW05	R4SB5	Other Waters	NRPW/Ephemeral	39.63175	-121.92880	3.0	538.9	1616.7	0.04
						Other Waters Totals =	1341.3	31161.6	0.72

*acreage is rounded to the nearest 100th

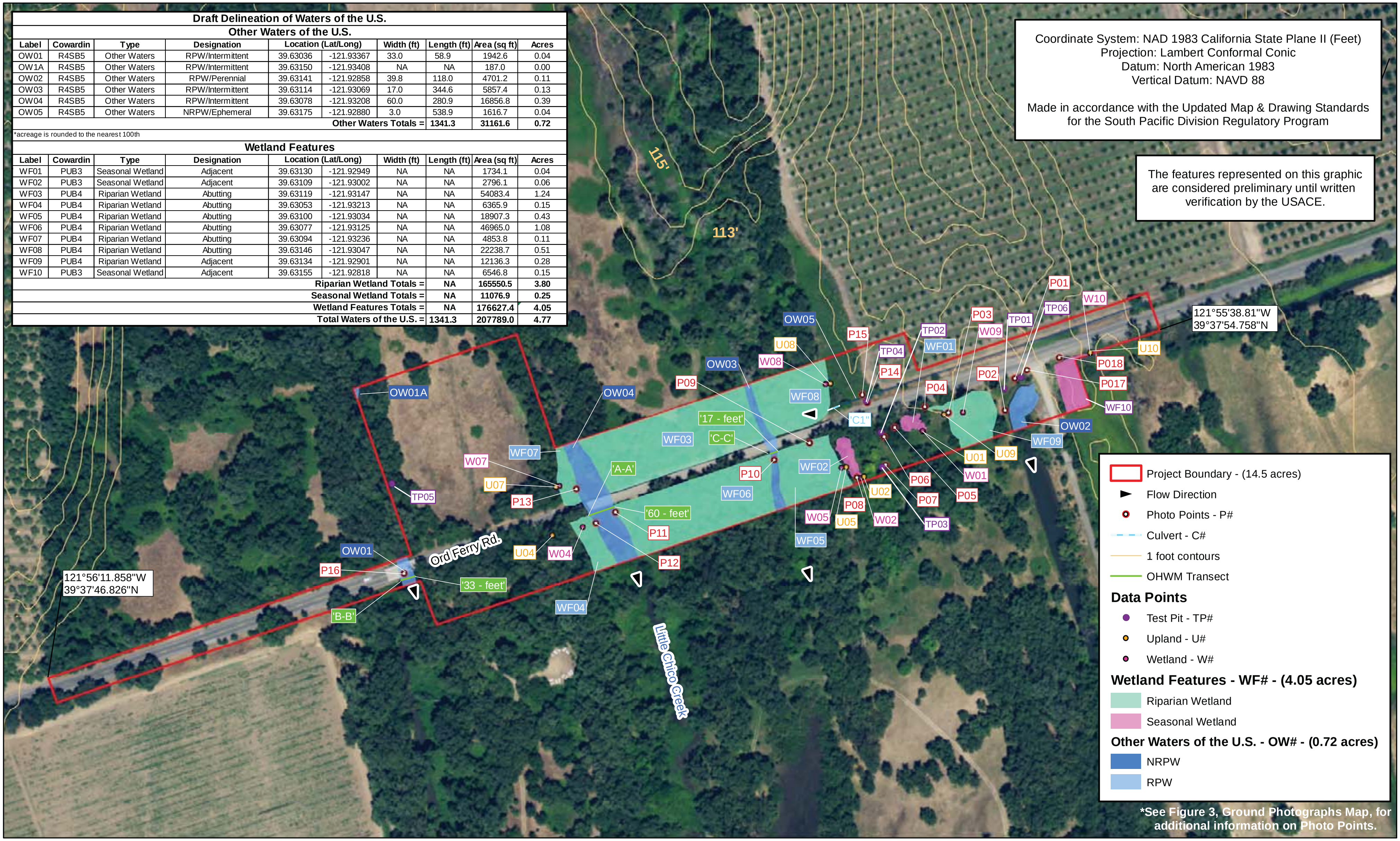
Wetland Features

Label	Cowardin	Type	Designation	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	PUB3	Seasonal Wetland	Adjacent	39.63130	-121.92949	NA	NA	1734.1	0.04
WF02	PUB3	Seasonal Wetland	Adjacent	39.63109	-121.93002	NA	NA	2796.1	0.06
WF03	PUB4	Riparian Wetland	Abutting	39.63119	-121.93147	NA	NA	54083.4	1.24
WF04	PUB4	Riparian Wetland	Abutting	39.63053	-121.93213	NA	NA	6365.9	0.15
WF05	PUB4	Riparian Wetland	Abutting	39.63100	-121.93034	NA	NA	18907.3	0.43
WF06	PUB4	Riparian Wetland	Abutting	39.63077	-121.93125	NA	NA	46965.0	1.08
WF07	PUB4	Riparian Wetland	Abutting	39.63094	-121.93236	NA	NA	4853.8	0.11
WF08	PUB4	Riparian Wetland	Abutting	39.63146	-121.93047	NA	NA	22238.7	0.51
WF09	PUB4	Riparian Wetland	Adjacent	39.63134	-121.92901	NA	NA	12136.3	0.28
WF10	PUB3	Seasonal Wetland	Adjacent	39.63155	-121.92818	NA	NA	6546.8	0.15
						Riparian Wetland Totals =	NA	165550.5	3.80
						Seasonal Wetland Totals =	NA	11076.9	0.25
						Wetland Features Totals =	NA	176627.4	4.05
						Total Waters of the U.S. =	1341.3	207789.0	4.77

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

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

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



1:2,400   0   100   200 Feet   1 inch = 200 feet
NORTH
Data Sources: ESRI, USDA NAIP 2016, Butte County

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Draft Delineation of Waters of the U.S.
Exhibit A

Delineation by: E. Gregg and M. Murphy
Map by: C. Davis & R. Edwards
GE# 16-025
gallaway ENTERPRISES
Map Date: 12/06/2017

Appendix D– Project Location Photos

Site Photographs Taken During the 2017 Field Visits

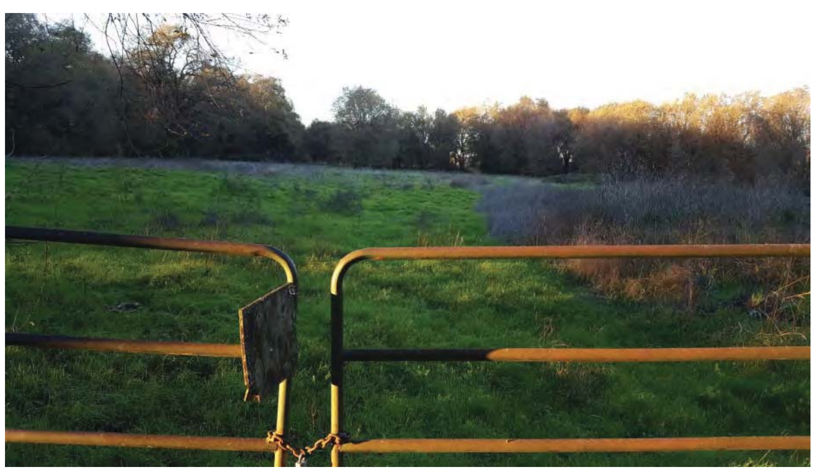
Irrigation Canal (OW 02) looking south

Little Chico Creek (OW 04) looking northwest

Seasonal Wetland (WF 02) looking north


Typical riparian habitat (WF 05) looking northwest


Seasonal Wetland (WF 10) looking southwest


Proposed staging area looking north from Ord Ferry Road

ATTACHMENT C

BIOLOGICAL OPINION (NMFS)

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

Refer to NMFS No: WCR-2018-11046

March 18, 2019

Laura Loeffler
Environmental Branch Chief
District 3
Department of Transportation
703 B Street
Marysville, California 95901

Re: Endangered Species Act Section 7(a)(2) Biological Opinion for the Ord Ferry Bridge Replacement Project on Little Chico Creek.

Dear Ms. Loeffler:

Thank you for your letter on October, 3, 2018, requesting initiation of consultation with the National Marine Fisheries Service (NMFS) pursuant to section 7 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531 et seq.) for the Ord Ferry Bridge Replacement Project (Project) on Little Chico Creek.

This biological opinion (BO) is based on the final biological assessment (BA) for the Project, in Butte County, California. Based on the best available scientific and commercial information, the BO concludes that the Project is not likely to jeopardize the continued existence of the federally listed threatened California Central Valley steelhead (*Oncorhynchus mykiss*) or Central Valley spring-run Chinook salmon (*O. tshawytscha*) and is not likely to destroy or adversely modify their designated critical habitat. NMFS has included an incidental take statement with reasonable and prudent measures and nondiscretionary terms and conditions that are necessary and appropriate to avoid, minimize, or monitor incidental take of listed species associated with the Project.

NMFS recognizes that Caltrans has assumed the Federal Highway Administration's (FHWA) responsibilities under Federal environmental laws for this project as allowed by a Memorandum of Understanding (NEPA Assignment) with the FHWA effective December 23, 2016. As such, Caltrans serves as the lead Federal Action Agency for the proposed project.

Please contact Lyla Pirkola at the California Central Valley Office of NMFS at (916) 930-5615 or via email at lyla.pirkola@noaa.gov if you have any questions concerning this consultation, or if you require additional information.

Sincerely,

Maria Rea

Maria Rea
Assistant Regional Administrator

Enclosure

cc: To the file 151422-WCR2018-SA00484
Brooks Taylor, Project Biologist, brooks.taylor@dot.ca.gov
Raymond Cooper, Civil Engineer, rcooper@buttecounty.net

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
650 Capitol Mall, Suite 5-100
Sacramento, California 95814-4700

Endangered Species Act (ESA) Section 7(a)(2) Biological Opinion and Fish and Wildlife Coordination Act Recommendations

Ord Ferry Road at Little Chico Creek Bridge Replacement Project

National Marine Fisheries Service Public Tracking Consultation Number: WCR-2018-11046

Action Agency: California Department of Transportation (Caltrans)

Affected Species and NMFS' Determinations:

ESA-Listed Species	Status	Is Action Likely to Adversely Affect Species?	Is Action Likely To Jeopardize the Species?	Is Action Likely to Adversely Affect Critical Habitat?	Is Action Likely To Destroy or Adversely Modify Critical Habitat?
California Central Valley steelhead (*Oncorhynchus mykiss*)	Threatened	Yes	No	No	No
Central Valley spring-run Chinook salmon (*O. tshawytscha*)	Threatened	Yes	No	No	No

Consultation Conducted By: National Marine Fisheries Service, West Coast Region

Issued By: Maria Rea

Maria Rea
Assistant Regional Administrator

Date: MAR 1 8 2019

TABLE OF CONTENTS

TABLE OF CONTENTS ... ii
1 INTRODUCTION ... 1
1.1 Background ... 1
1.2 Consultation History ... 1
1.3 Proposed Federal Action ... 1
1.4 Proposed Avoidance and Minimization Measures ... 4
2 ENDANGERED SPECIES ACT: ... 6
2.1 Analytical Approach ... 6
2.2 Rangewide Status of the Species and Critical Habitat ... 7
2.3 Action Area ... 9
2.4 Environmental Baseline ... 11
2.4.1 Status of Listed Species and Critical Habitat in the Action Area ... 11
2.4.2 Factors Affecting Listed Species and Critical Habitat in the Action Area ... 12
2.5 Effects of the Action ... 12
2.5.1 Effects of the Proposed Action to Listed Fish Species ... 13
2.5.2 Effects of the Proposed Action to Critical Habitat PBFs ... 16
2.6 Cumulative Effects ... 17
2.6.1 Agricultural Practice ... 17
2.6.2 Increased Urbanization ... 18
2.6.3 Rock Revetment and Levee Repair Projects ... 18
2.7 Integration and Synthesis ... 18
2.7.1 Status of the CCV Steelhead DPS ... 18
2.7.2 Status of the CV Spring-Run Chinook Salmon ESU ... 19
2.7.3 Cumulative Effects ... 19
2.7.4 Summary of the Effects of the Proposed Action ... 19
2.7.5 Summary ... 20
2.8 Conclusion ... 20
2.9 Incidental Take Statement ... 20
2.9.1 Amount or Extent of Take ... 21
2.9.2 Effect of the Take ... 22
2.10 Conservation Recommendations ... 22
2.10.1 Reasonable and Prudent Measures ... 23
2.10.2 Terms and Conditions ... 23
2.11 Reinitiation of Consultation ... 24
3 FISH AND WILDLIFE COORDINATION ACT ... 25
4 DATA QUALITY ACT DOCUMENTATION & PRE-DISSEMINATION REVIEW 26
4.1 Utility ... 26
4.2 Integrity ... 26
4.3 Objectivity ... 26
5 REFERENCES ... 27

1 INTRODUCTION

This Introduction section provides information relevant to the other sections of this document and is incorporated by reference into Sections 2 and 3 below.

1.1 Background

The National Marine Fisheries Service (NMFS) prepared the biological opinion (opinion) and incidental take statement (ITS) portions of this document in accordance with section 7(b) of the Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq.), and implementing regulations at 50 CFR 402.

Because the proposed action would modify a stream or other body of water, NMFS also provides a recommendation for the purpose of conserving fish and wildlife resources, and enabling the Federal agency to give equal consideration with other project purposes, as required under the Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661 et seq.).

We completed pre-dissemination review of this document using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (DQA) (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available through the NOAA Institutional Repository, after approximately two weeks. A complete record of this consultation is on file at NMFS California Central Valley Office.

1.2 Consultation History

- On October 24, 2018, NMFS received a consultation request letter and Biological Assessment (BA) from Caltrans requesting formal consultation on the Ord Ferry Bridge Replacement Project on Little Chico Creek (Project).
- On November 6, 2018, NMFS requested additional Project information.
- On November 16, 2018, NMFS and Caltrans met on-site to discuss the Project.
- Over the next few weeks, various dialog was exchanged about Project effects.
- On December 10, 2018, NMFS received sufficient information and consultation was initiated.

1.3 Proposed Federal Action

"Action" means all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies (50 CFR 402.02).

Under the FWCA, an action occurs whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the United States, or by any public or private agency under Federal permit or license" [16 USC 662(a)].

Project Description

Butte County in conjunction with the California Department of Transportation (Caltrans) proposes to construct a replacement bridge (Project) for the Ord Ferry Bridge (No. 12C0242) over the Little Chico Creek due to its structurally deficient status. The Project site is located in Butte County, California on Ord Ferry Road approximately 3.5 miles west of Dayton Road near the town of Dayton. The Project is located within the Ord Ferry US Geological Survey (USGS) quadrangle in Section 36, Township 21N, Range 1W. Work would occur over two seasons from 2019 to 2020, activities conducted in the active channel would be limited to May 1 through October 31, with a water diversion being used between May 1 and June 30 should water be present.

Immediately prior to in-stream activities or installation of water diversion structures, the following procedures would be used:

- If necessary all large rocks, logs, debris, and other obstructions would be removed from the areas to be dewatered to reduce places of fish refuge and prevent snagging of seine nets.
    - Woody debris with diameter greater than 12 inches removed during dewatering will be returned to the creek following construction activities
- To keep fish out of the work area during installation of the culvert pipes and temporary work platform, block nets will be installed upstream and downstream of the work area and maintained until the creek has been diverted.
    - Block nets will consist of 0.25 inch mesh nets spanning the entire channel and adequately secured to the channel bottom
- A NMFS approved biologist will capture and relocate fish using authorized methods.
    - Seining is anticipated; should electrofishing be necessary, methods as provided in NMFS Fisheries Guidelines for Electrofishing Waters Containing Salmonids listed under the ESA, June 2000 will be used to maximize efficient and safe fish capture, removal and relocation.

Proposed New Bridge

The proposed replacement of the Ord Ferry Bridge would be approximately 640 feet long by 43 feet wide and carry two (2) twelve-foot lanes and two (2) eight-foot shoulders. The bridge superstructure construction within the floodplain will utilize cast-in-place methodology with traditional concrete forms and temporary supports consisting of falsework beams, timber bents, and timber pads. Intermediate supports for the reinforced concrete slab bridge are expected to be small diameter pile extensions founded on cast-in-steel-shell (CISS) piles. The CISS pile shafts will be driven using a crane and pile hammer. Bridge abutments are anticipated to be reinforced concrete seat style abutments founded on driven 16-inch piles. Impact pile driving is anticipated for installation of these piles. Pile driving occurring from May 1- June 30 will occur on land a minimum of 10 meters from Little Chico Creek. Pile driving from July 1 – October 31 will be moving in an easterly direction away from Little Chico Creek, during this time the creek is anticipated to be dry.

Dewatering
Once fish have been removed, a clear water diversion would be installed. The diversion would be constructed of “fish rock” (washed, uncrushed, rounded, natural river rock) and covered with clean crushed angular gravel. Upstream and downstream cofferdams constructed of fish rock, gravel and/or sandbags, and plastic sheeting would be constructed around the plastic culverts carrying flows. Culvert size will be determined using NMFS Hydraulic Design Method criteria (NMFS 2001).

If after the temporary water diversion is installed, pooled water is still present within the project area, water would be pumped out according to NMFS Southwest Region’s Juvenile Fish Screen Pump Criteria for Pump Intakes. The outflow end of the pump will be equipped with a sediment filter to dissipate outlet flows and serve as backup filtration media. Water being pumped from pools would be drawn down incrementally by 50%, 75%, 90%, and 100% to facilitate fish capture and relocation.

Following completion of each construction season, the diversion would be removed from Little Chico Creek. Fish rock left in the creek channel would be redistributed by hand to ensure it does not form a barrier to flows or migration.

In Channel Work
Permanent placement of a portion of the new bridge supports will occur in Little Chico Creek as well as the removal of the old bridge supports. The existing number of bridge columns (piers) in Little Chico Creek is 12 and the proposed number of piers in Little Chico Creek is 14. The existing piers proposed for removal in the OHWM of Little Chico Creek amount to 0.0011-acre (47ft^2). The piers proposed for installation in the OHWM of Little Chico Creek amounts to 0.0004-acre (16ft^2). There will be an increase of 0.0007-acre (approximately 31ft^2) of habitat within the ordinary high water mark (OHWM) of Little Chico Creek.

Permanent rock slope protection (RSP) is required near both bridge abutment supports and abutment slopes to prevent erosion and scour, a total of approximately 0.04acres of RSP would be placed, all outside of the OWHM.

Construction of the bridge foundations would require working with concrete materials including trucks and pumps. For cast-in-place construction activities, formwork and falsework will be required. The first construction stage would reduce the existing bridge to a single eleven-foot traffic lane and demolish a portion of the existing bridge. A portion of the new bridge would then be constructed and vehicle traffic opened up onto the new bridge portion. The second stage would remove the remainder of the existing bridge and construct the remainder of the new bridge.

Temporary Access Road
A temporary access road would need to be installed from May 1 to October 31 in both seasons of construction. As part of the temporary access road a clear water diversion using appropriately sized culverts and clean river gravel will be installed in Little Chico Creek. The temporary road including all culverts will be removed on or before October 31 of each construction season.

Removal of 37 trees within the Little Chico Creek floodplain will be required, trees will be mitigated for onsite and in-kind at a 3:1 ratio.

Demolition
A catchment device (e.g., plywood, plastic over chain-link fence, woven mesh fabric, etc.) would be put in place to prevent demolition debris from entering the creek. The superstructure would be disassembled by saw cutting sections and removing them with an excavator or similar piece of equipment. Removal of substructure supports would be achieved through saw cuttings and pulling out piers/footings with an excavator or similar piece of equipment. If existing piers cannot be pulled out they will be cut three feet below grade, removed, and the hole back filled with native soil and spawning sized gravel.

Equipment
It is anticipated that excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, pile driving hammers, and pile driving equipment will be required to construct the new bridge. Construction of foundations will require concrete trucks and pumps. For cast-in-place construction activities, formwork and falsework will be required.

Scheduling
Construction is anticipated to begin in the summer of 2019 and staged for two construction seasons. Approximately 18 months of single lane traffic control is anticipated. The first stage would reduce the existing bridge to a single eleven-foot traffic lane and demolish a portion of the existing bridge. A portion of new bridge would then be constructed with a thirteen-foot lane, and traffic would be moved onto the new bridge. The second stage would remove the remainder of the existing bridge and construct the remainder of the new bridge.

1.4 Proposed Avoidance and Minimization Measures

The following are Best Management Practices (BMPs) proposed by Caltrans, intended to minimize overall impacts associated with the proposed action:

- The Project would replace the bridge on the existing alignment which minimizes clearing of riparian habitat when compared to placing the bridge on a new alignment.
- The proposed bridge design will result in a reduction of piers within the Little Chico Creek floodplain.
- If water is present in the creek May 1 - October 31 then a clear water diversion using appropriately sized culverts and clean river gravel will be installed in Little Chico Creek.
- The temporary road including all culverts and will be removed on or before October 31 of each season. The clean river gravel will be left at the end of construction to provide habitat for aquatic organisms.
- Any pile driving that occurs between May 1 and June 30 when water may be present will occur on land a minimum of 10 meters from Little Chico Creek.
- Disturbance to the channel and banks of Little Chico Creek and/or removal of vegetation will be kept to the minimum necessary to complete Project activities.
- Portions of the streambed of Little Chico Creek disturbed by construction activities will be returned to a pre-construction condition.

- The banks of Little Chico Creek and all upland areas will be seeded using a native seed mix at the end of each construction season.
- Trees removed will be mitigated for on-site and in-kind at a 3:1 ratio.

Species Specific Best Management Practices (BMPs)

- If flowing water is present, a silt screen would be fully established and functioning properly before any in-stream construction takes place in order to prevent sediment drift. The silt screen would be removed following installation of the clear water diversion to avoid inhibiting the movement of aquatic wildlife.
- An erosion control plan will be developed and implemented prior to the wet season (November 1 – April 1) to avoid sediment entering the creek.
    - Applicable BMPs would include the use of straw bales, mulch or wattles, silt fences, filter fabric and ultimately seeding and revegetating.
- Water pumped from dewatered areas will not be discharged back into Little Chico Creek.
- All fueling and/or equipment maintenance would occur 50 feet from all water bodies and riparian areas.
- A spill prevention plan (SPP) and storm water pollution prevention plan (SWPPP) would be developed and implemented by the contractor. Spill prevention measures would include stockpiling absorbent booms, staging hazardous materials away from the creek, maintaining and checking construction equipment to prevent fuel and lubrication leaks. Absorbent booms would be available within 50 feet of the live channel during all in channel work for quick containment of any spills. Any chemical spill within the active channel of Little Chico Creek would be reported to NMFS within 48 hours.
- A NMFS approved fish biologist would perform fish relocation according to a NMFS approved plan

"Interrelated actions" are those that are part of a larger action and depend on the larger action for their justification. "Interdependent actions" are those that have no independent utility apart from the action under consideration (50 CFR 402.02). There are no interdependent or interrelated activities associated with this Project.

2 ENDANGERED SPECIES ACT: BIOLOGICAL OPINION AND INCIDENTAL TAKE STATEMENT

The ESA establishes a national program for conserving threatened and endangered species of fish, wildlife, plants, and the habitat upon which they depend. As required by section 7(a)(2) of the ESA, each Federal agency must ensure that its actions are not likely to jeopardize the continued existence of endangered or threatened species, or adversely modify or destroy their designated critical habitat. Per the requirements of the ESA, Federal action agencies consult with NMFS and section 7(b)(3) requires that, at the conclusion of consultation, NMFS provides an opinion stating how the agency's actions would affect listed species and their critical habitats. If incidental take is reasonably certain to occur, section 7(b)(4) requires NMFS to provide an ITS that specifies the impact of any incidental taking and includes non-discretionary reasonable and prudent measures (RPMs) and terms and conditions to minimize such impacts.

2.1 Analytical Approach

This biological opinion includes both a jeopardy analysis and/or an adverse modification analysis. The jeopardy analysis relies upon the regulatory definition of "to jeopardize the continued existence of" a listed species, which is "to engage in an action that would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species" (50 CFR 402.02). Therefore, the jeopardy analysis considers both survival and recovery of the species.

This biological opinion relies on the definition of "destruction or adverse modification," which "means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features" (81 FR 7214).

The designation(s) of critical habitat for (species) use(s) the term primary constituent element (PCE) or essential features. The new critical habitat regulations (81 FR 7414) replace this term with physical or biological features (PBFs). The shift in terminology does not change the approach used in conducting a ''destruction or adverse modification'' analysis, which is the same regardless of whether the original designation identified PCEs, PBFs, or essential features. In this biological opinion, we use the term PBF to mean PCE or essential feature, as appropriate for the specific critical habitat.

We use the following approach to determine whether a proposed action is likely to jeopardize listed species or destroy or adversely modify critical habitat:

- Identify the rangewide status of the species and critical habitat expected to be adversely affected by the proposed action.

- Describe the environmental baseline in the action area.

- Analyze the effects of the proposed action on both species and their habitat using an "exposure-response-risk" approach.
- Describe any cumulative effects in the action area.
- Integrate and synthesize the above factors by: (1) Reviewing the status of the species and critical habitat; and (2) adding the effects of the action, the environmental baseline, and cumulative effects to assess the risk that the proposed action poses to species and critical habitat.
- Reach a conclusion about whether species are jeopardized or critical habitat is adversely modified.
- If necessary, suggest a RPA to the proposed action.

2.2 Rangewide Status of the Species and Critical Habitat

This opinion examines the status of each species that would be adversely affected by the proposed action. The status is determined by the level of extinction risk that the listed species face, based on parameters considered in documents such as recovery plans, status reviews, and listing decisions. This informs the description of the species' likelihood of both survival and recovery. The species status section also helps to inform the description of the species' current "reproduction, numbers, or distribution" as described in 50 CFR 402.02. The opinion also examines the condition of critical habitat throughout the designated area, evaluates the conservation value of the various watersheds and coastal and marine environments that make up the designated area, and discusses the current function of the essential PBFs that help to form that conservation value. See **Table 1** for species and **Table 2** for critical habitat information.

Table 1. Description of species, current ESA listing classification and summary of species status.

Species	Listing Classification and Federal Register Notice	Status Summary
Central Valley Spring-run Chinook salmon ESU (CV spring-run)	Threatened, 70 FR 37160; June 28, 2005	According to the NMFS (2016b) 5-year species status review, the status of the CV spring-run Chinook salmon ESU, until 2015, has improved since the 2010 5-year species status review. The improved status is due to extensive restoration, and increases in spatial structure with historically extirpated populations (Battle and Clear creeks) trending in the positive direction. Recent declines of many of the dependent populations, high pre-spawn and egg mortality during the 2012 to 2015 drought, uncertain juvenile survival during the drought are likely increasing the ESU's extinction risk.
California Central Valley Steelhead (CCV steelhead)	Threatened, 71 FR 834; January 5, 2006	According to the NMFS (2016a) 5-year species status review, the status of CCV steelhead appears to have changed little since the 2011 status review that concluded that the DPS was in danger of extinction. Most wild CCV populations are very small, are not monitored, and may lack the resiliency to persist for protracted periods if subjected to additional stressors, particularly widespread stressors such as climate change. The genetic diversity of CCV steelhead has likely been impacted by low population sizes and high numbers of hatchery fish relative to wild fish. The lifehistory diversity of the DPS is mostly unknown, as very few studies have been published on traits such as age structure, size at age, or growth rates in CCV steelhead.

Table 2. Description of critical habitat, designation details, and status summary.

Species	Designation Date and Federal Register Notice	Status Summary
CCV Steelhead	September 2, 2005, 70 FR 52488	Critical habitat for CCV steelhead includes stream reaches of the Feather, Yuba, and American rivers, Big Chico, Butte, Deer, Mill, Battle, Antelope, and Clear creeks, the Sacramento River, as well as portions of the northern Delta. Critical habitat includes the stream channels in the designated stream reaches and the lateral extent as defined by the ordinary high-water line. In areas where the ordinary high-water line has not been defined, the lateral extent will be defined by the bankfull elevation. Physical and biological features considered essential to the conservation of the species include spawning habitat; freshwater rearing habitat; freshwater migration corridors; and estuarine areas.

Global Climate Change
One major factor affecting the rangewide status of the threatened and endangered anadromous fish in the Central Valley and aquatic habitat at large is climate change. Warmer temperatures associated with climate change reduce snowpack and alter the seasonality and volume of seasonal hydrograph patterns (Cohen *et al.* 2000) Central California has shown trends toward warmer winters since the 1940s (Dettinger and Cayan 1995). Projected warming is expected to affect Central Valley Chinook salmon. Because the runs are restricted to low elevations as a result of impassable rim dams, if climate warms by 5 degrees Celsius (°C) (9 degrees Fahrenheit [°F]), it is questionable whether any Central Valley Chinook salmon populations can persist (Williams 2006).

CV spring-run Chinook salmon adults are vulnerable to climate change because they over-summer in freshwater streams before spawning in autumn (Thompson *et al.* 2011). CV spring-run spawn primarily in the tributaries to the Sacramento River, and those tributaries without cold water refugia (usually input from springs) will be more susceptible to impacts of climate change. Although CCV steelhead will experience similar effects of climate change to CV spring-run salmon, as they are also blocked from the vast majority of their historic spawning and rearing habitat, the effects may be even greater in some cases, as juvenile steelhead need to rear in the stream for one to two summers prior to emigrating as smolts. In the Central Valley, summer and fall temperatures below the dams in many streams already exceed the recommended temperatures for optimal growth of juvenile CCV steelhead, which range from 14°C to 19°C (57°F to 66°F).

In summary, observed and predicted climate change effects are generally detrimental to the species (McClure 2011, Wade *et al.* 2013), so unless offset by improvements in other factors, the status of the species and critical habitat is likely to decline over time. The climate change projections referenced above cover the time period between the present and approximately 2100. While there is uncertainty associated with projections, which increases over time, the direction of change is relatively certain (McClure *et al.* 2013).

2.3 Action Area

"Action area" means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02).

Effects to biological resources have the potential to extend beyond the footprint of the Project itself, because of this, the action area extends beyond project boundaries in areas where effects could occur to federally listed anadromous fish. Little Chico Creek is the only drainage within the project that has the potential to support listed anadromous fish; therefore, the action area includes the entire Project site and 300 feet south of the Project boundary along Little Chico Creek to account for potential effects due to construction activities such as installation of RSP, pile driving, and bank disturbance. The action area also includes the dirt access roads, temporary road and staging area. The total action area is 15.5 acres encompassing about a 700 foot stretch of Little Chico Creek. (**Figure 1**)

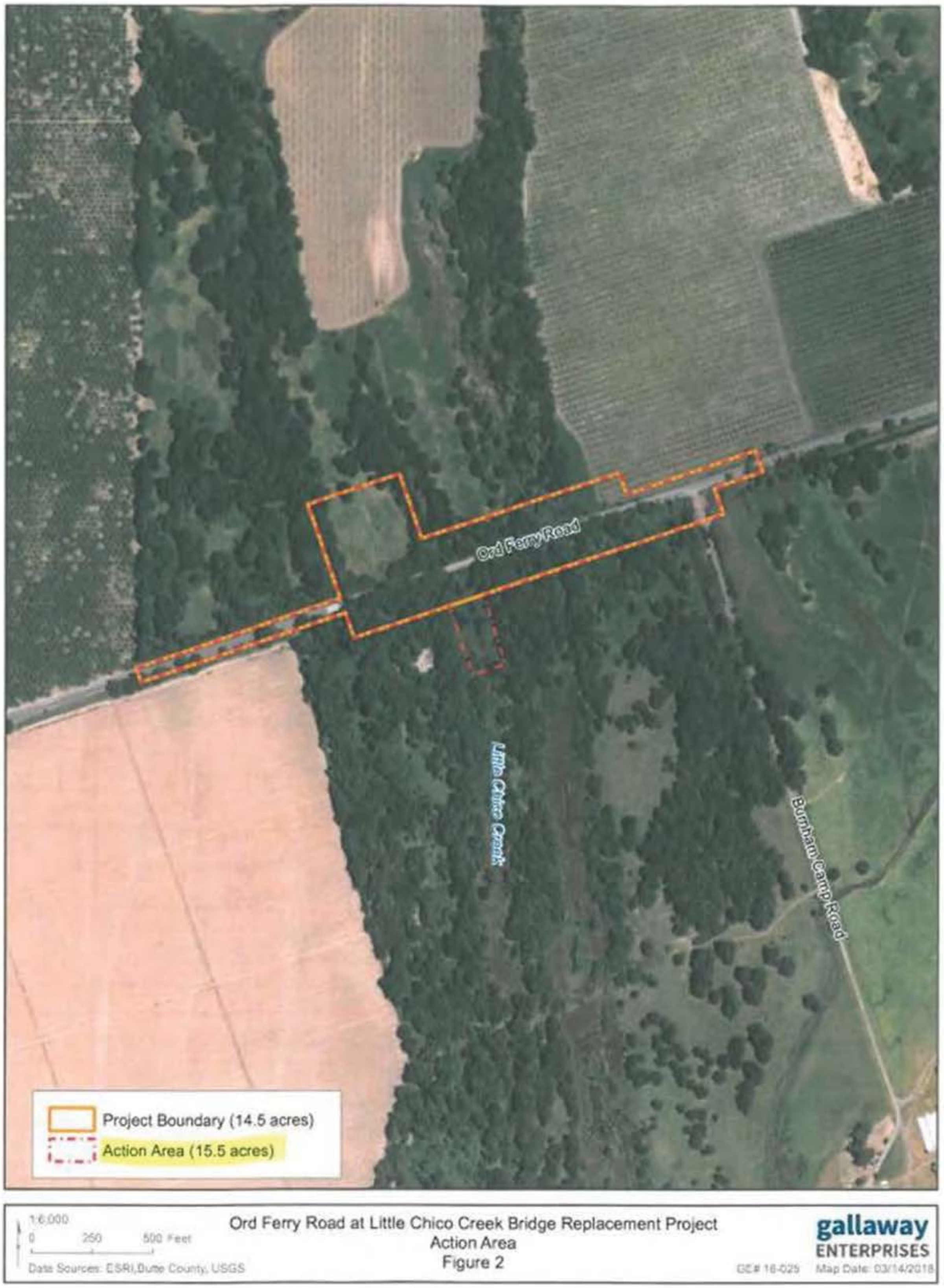


Figure 1: Action Area

2.4 Environmental Baseline

The "environmental baseline" includes the past and present impacts of all Federal, state, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of state or private actions which are contemporaneous with the consultation in process (50 CFR 402.02).

2.4.1 Status of Listed Species and Critical Habitat in the Action Area

The action area, which encompasses Little Chico Creek and associated floodplains and riparian areas at and adjacent to the Project work area, functions primarily as a rearing and migratory habitat for CCV steelhead.

Although the action area is not designated critical habitat for CV spring-run Chinook salmon, due to the life history timing of CV spring-run Chinook salmon it is possible for one or more of the following life stages to be present within the action area throughout the year: adult migrants, rearing juveniles, or emigrating juveniles. Unspecified life stages of CV spring-run Chinook salmon have been observed within portions of Little Chico Creek during high flow years however, this watershed is not typically used as a migration corridor or spawning habitat for adult CV spring-run.

Between late-fall and spring (November 1 – June 30) Little Chico Creek within the action area contains the following PBFs: 1) freshwater migration corridor, and 2) freshwater rearing sites for CCV steelhead. These PBFs within the designated critical habitat that provide adult migration and juvenile refuge, mobility and survival, and are essential to the conservation of CCV steelhead. The essential features of these PBFs include water quality and forage, water quantity and floodplain connectivity, water temperature, riparian habitat, natural cover, and access to and from spawning grounds. The intended conservation roles of habitat in the action area are to provide appropriate freshwater rearing and migration conditions for juveniles and unimpeded freshwater migration conditions for adults. CCV steelhead have been known to spawn miles upstream of the action area in the upper reaches of Little Chico Creek, however there is no spawning potential for either species in the action area (Brown and Mott 2002). During the summer months (July 1 – October 31) the intermittent hydrology, still water, and warm temperatures make Little Chico Creek within the action area unsuitable for any lifestage of anadromous salmonid (T. McReynolds, CDFW, pers. comm., 2018).

The Recovery Plan for the Evolutionary Significant Units of Sacramento River winter-run Chinook salmon and Central Valley spring-run Chinook salmon and the Distinct Population Segment of California Central Valley steelhead (NMFS 2014), herein referred to as "Recovery Plan") does not designate listed species in Little Chico Creek as belonging to a Core population, meaning listed species in this watershed do not have a high potential to support a viable population with low risk of extinction and are not a priority for recovery actions.

2.4.2 Factors Affecting Listed Species and Critical Habitat in the Action Area

Little Chico Creek is an intermittent tributary within the Sacramento River watershed, which flows north to south below Ord Ferry Bridge within the action area. Physical features of the drainage in the action area include a mud and gravel bottom, sparse vegetation in the low-flow channel, and relatively dense tree canopy above the channel. Once it leaves the action area, Little Chico Creek flows south several miles before entering Angel Slough and eventually feeding into the Sacramento River. In this area the boundaries of the creek are difficult to delineate due to agricultural land use modifying surface drainage patterns. Little Chico Creek splits into a series of smaller channels, many of which are silted in making migration from the Sacramento River to upper reached of Little Chico Creek difficult in low flow years. Although the upper reaches of Little Chico Creek contain perennial flows, lower reaches from the city of Chico through the agricultural zone are considered intermittent with some portions completely dry in the summer months.

Little Chico Creek has been degraded from its historic condition and many anthropomorphic and naturally occurring factors have led to the decline of anadromous fish in the surrounding ecosystem. Due to urban development in the reach of Little Chico Creek that runs through the city of Chico (upstream of the action area), as well as agricultural development in the lower reach (including the action area) there has been alteration to the natural and historic flows, and temperatures through the action area. Altered flow regimes can influence migratory cues, water quality (including contaminants, dissolved oxygen, and nutrients for primary productivity), sedimentation, and water temperature.

Riparian vegetation provides a large host of ecosystem services and its removal in urban and agricultural areas has diminished habitat value within the action area. Riparian vegetation plays a key role in the conservation value of rearing habitat for all salmonid life stages. It provides shading to lower stream temperatures; increases the recruitment of large woody material into the river, increasing habitat complexity; provides shelter from predators and; enhances the productivity of aquatic macroinvertebrates (Anderson and Sedell 1979, Pusey and Arthington 2003). It has also been shown to directly influence channel morphology and may be directly correlated with improved water quality in aquatic systems (Schlosser and Karr 1981, Dosskey et al. 2010). Surveys done by California State University Chico (Brown and Mott 2002) report the agricultural zone of Little Chico Creek as having an average rating of cover of about 50% (this is expressed as a percentage of ideal cover). This midrange percentage indicates less than ideal quality cover, which affects the ability of fish to take refuge from both terrestrial and aquatic predators, refuge from high flow velocities, as well as refuge from bright sunlight (Vanicek 1993, Moyle 2002).

2.5 Effects of the Action

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline (50 CFR 402.02). Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.

2.5.1 Effects of the Proposed Action to Listed Fish Species

The effects of the proposed action are based on best available life history information and monitoring data on the two species for which geographical range occurs in the action area. Life stages of species that are expected to be present during the proposed in-water work window (May 1 to October 31) include adult and juvenile CCV steelhead and adult CV spring-run. In this section of Little Chico Creek where the proposed action will occur, there are no known spawning areas for salmonids, so impacts or mortality to eggs are not expected to occur. The following analysis includes potential sources of take for the species resulting from the proposed action, as well as the likelihood of those sources contributing to overall take associated with the proposed action.

Fish Capture and Relocation

To minimize direct and indirect mortality of fishes from construction activities, any fish within the immediate work site will be relocated before the installation of temporary diversions. A full description of fish relocation procedures are described above in Proposed Federal Action section. Fish relocation activities pose a risk of injury or mortality to rearing juvenile CCV steelhead since any fish relocation or collection gear has some associated risk to fish, including stress, disease transmission, injury, or death. The amount of unintentional injury and mortality attributable to fish relocation varies widely depending on the method used, ambient conditions, and the experience of the field crew. Since fish relocation activities will be conducted by qualified fisheries biologists following NMFS guidelines, direct effects to and mortality of juvenile CCV steelhead during relocation activities is expected to be minimal.

Sites selected for relocating fish will have similar water temperature and provide similar suitable habitat as that of the capture site. However, relocated fish may endure short-term stress from crowding at the relocation site. Relocated fish may also have to compete with resident fish for available resources such as food and habitat. Some of the fish released at the relocation site will likely move upstream or downstream to areas that have more habitat and a lower density of fish. As each fish disperses, competition diminishes and remains localized in a small area. The number of fish affected by competition cannot be accurately estimated, due to variability in fish presence or absence in any given area, but it is unlikely that this impact will cascade through the population within the watershed based on the small area that will be affected and the small number of CCV steelhead and CV spring-run that would need to be relocated.

Juvenile CCV steelhead that evade capture and remain in the construction area may be injured or killed from construction activities. This includes desiccation if fish remain in the dewatered area, or death if fish are crushed by personnel or equipment. However, because experienced biologists will be collecting fish, most are expected to be removed from the area before construction. Juvenile CCV steelhead or adult CV spring-run may be present during relocation, and thus subject to the above effects. Adult CCV steelhead are not expected to be present during relocation, and thus impacts to this life stage of these species is considered improbable.

Increased Sedimentation and Turbidity

Increased sedimentation and turbidity in Little Chico Creek may result from a number of sources associated with the proposed Project. Site clearing, earthwork, vegetation removal and planting, and removal of bridge piers and substructure within the OHWM will result in disturbance of soil and riverbed sediments and therefore temporary increases in turbidity and suspended sediments. Disturbance of sediments during in-water construction could lead to a degradation of water quality. In addition, installation of water diversion structures could result in temporary increases in turbidity and suspended sediments in the river, if water from within cofferdams is not properly disposed of or contained and treated before discharge back to the river.

Increased exposure to elevated levels of suspended sediments have the potential to result in physiological and behavioral effects. The severity of these effects depends on the extent of the disturbance, duration of exposure, and sensitivity of the affected life stage. Based on the types and duration of proposed in-water construction methods, short-term increases in turbidity and suspended sediment may disrupt feeding activities or result in avoidance or displacement of fish from preferred habitat. Salmonids have been observed to avoid streams that are chronically turbid (Lloyd 1987) or move laterally or downstream to avoid turbidity plumes (Sigler et al. 1984). Chronic exposure to high turbidity and suspended sediment may also affect growth and survival by impairing respiratory function, reducing tolerance to disease and contaminants, and causing physiological stress (Waters 1995).

Any increase in turbidity associated with proposed instream work is likely to be brief and localized, attenuating downstream as suspended sediment settles out of the water column. Temporary spikes in suspended sediment may result in behavioral avoidance of the site by fish; several studies have documented active avoidance of turbid areas by juvenile and adult salmonids (e.g., Sigler et al. 1984, Lloyd 1987, Servizi and Martens 1992).

Potential direct and indirect effects of increased sedimentation and turbidity will be minimized through implementation of proposed BMPs. All in water work will be conducted between May 1 and October 31 when flows are anticipated to be low, to minimize impacts to fish. To prevent turbidity, water pumped from dewatered areas will not be discharged back into Little Chico Creek and a sediment filter/sock will be used to further filter water before discharge. A silt screen will be in place prior to any instream construction and an erosion control plan will be in place.

There is still some potential for impacts to adult and juvenile fish due to temporary, localized plumes of turbidity during these processes. However, BMP actions will minimize the extent of adverse effects associated with the proposed action and impacts to fish are expected to be minimal.

Spills and Hazardous Materials

The proposed action will involve heavy construction equipment and activities that could impair water quality if a spill were to occur. Potential sources of pollutants include petroleum products such as fuel, hydraulic fluid, and petroleum-based lubricants. BMPs, an SPP and SWPPP will be in place, and avoidance and minimization techniques will be implemented, minimizing the probability of pollutant incursion into Little Chico Creek. However, unlike sedimentation and turbidity-related effects, potential pollution-related effects have the potential to be persistent in the action area and may affect multiple species and life stages if they were to occur.
Incursion of contaminants into the action area has the potential to directly or indirectly effect species present during or post-construction. Heavy equipment will be present in the action area

and metals may be deposited through their use and operation (Paul and Meyer 2001). These materials have been shown to alter juvenile salmonid behavior through disruptions to various physiological mechanisms including sensory disruption, endocrine disruption, neurological dysfunction and metabolic disruption (Scott and Sloman 2004). Oil-based products used in combustion engines are known to contain polycyclic aromatic hydrocarbons (PAHs), which have been known to bio-accumulate in other fish taxa such as *Pleuronectiformes* and have carcinogenic, mutagenic and cytotoxic effects (Johnson et al. 2002). The exact toxicological effects of PAHs in salmonids is not well understood, although studies have shown that increased exposure of salmonids to PAHs reduced immunosuppression, increasing their susceptibility to pathogens (Arkoosh et al. 1998). Adult and juvenile CCV steelhead and adult CV spring-run may be present in the action area during construction activities and would potentially be acutely injured by a pollution event if one occurred. They could also be indirectly affected by a pollution event if contaminants were to settle within substrate in the active channel that may become disturbed at a later time.

BMPs and avoidance and minimization measures are described in Section 1.4 and will aid in minimizing or avoiding potential direct or indirect adverse effects to listed fish species. With these avoidance and minimization measures in place, potential direct or indirect adverse effects resulting from the incursion of contaminants into Little Chico Creek are not expected to occur.

Construction Related Effects

Construction-related activities have the potential to result in injury or death to listed fish species. Construction-related effects may include debris falling into the active channel, tools and/or equipment falling into the active channel, or noise generated by displaced rock and sediment and the operation of construction machinery. Both adult and juvenile life stages of CCV steelhead and CV spring-run can potentially utilize the action area as a migration corridor and may exhibit rearing behavior there as well. Any of these species/life stages may be present during the scheduled in-water work window and may be adversely affected by construction-related effects. BMPs, and avoidance and minimization techniques will be implemented, minimizing the probability and severity of construction-related effects in the action area.

Juvenile or adult CCV steelhead and CV spring-run that migrate through the Project area may be exposed to short-term noise and disturbance caused by construction activities. For juveniles this may cause stress from being displaced from their rearing area and needing to locate a new rearing area. As such, juvenile CCV steelhead may experience crowding and competition with resident fish for food and habitat, which can lead to reduced growth. Further, juvenile CCV steelhead may be subject to increased predation risk while they are locating to new rearing areas, leading to reduced survival.

However, we expect displaced adult and juvenile fish will likely relocate to areas downstream that have suitable habitat and low competition. A small number of listed species are likely to be present in the action area and temporarily displaced by the proposed Project actions. However, it is not expected that these actions will negatively impact the survival or recovery of the populations as a whole.

Instream construction activities may cause mortality or reduce abundance of benthic aquatic macroinvertebrates within the footprint of the bridge repairs, due to coarse sediment smothering. These effects to aquatic macroinvertebrates are expected to be temporary, as rapid recolonization (about 2 weeks to 2 months) is expected (Merz and Chan 2005). Furthermore, downstream drift is expected to temporarily benefit any downstream, drift-feeding organisms, including juvenile listed species. The amount of food available for adult and juvenile CCV steelhead and CV spring-run in the action area is therefore expected to return to at least to pre-Project conditions.

Although CCV steelhead and CV spring-run may be exposed to the construction area with reduced prey base, individuals will be able to retreat to adjacent suitable habitat, and affected food resources are expected to begin to recolonize as soon as construction is completed. Therefore, effects of instream construction activities are expected to be minor and are unlikely to result in injury or death.

Hydroacoustic Impacts
Construction of the new bridge will require pile driving for temporary and permanent piles. When piles are driven into riverbed substrate, sound propagates through the water that can kill, injure, or disturb fish. The most common form of acute injury to fish resulting from impact pile driving is barotrauma to the fish's swim bladder. When sound propagates through the water, tissues of the swim bladder may become ruptured or torn as the sound wave passes through the fish and pressure levels rapidly rise and fall, causing the swim bladder to expand and contract. Internal organs adjacent to the swim bladder may be injured as well (Gaspin 1975). Salmonids have physostomous swim bladders that may become injured in this way. Other injuries have been documented as well including structural damage to auditory organs (Enger 1981, Hastings 1995, Hastings 1996) causing equilibrium problems (Hastings 1995, Hastings 1996). The fitness of salmonids may be reduced if they experience these injuries as their behaviors for swimming, predator avoidance, feeding, and migrating may become temporarily or permanently impaired.

Impact pile driving will be required for installation of CISS pile shafts for the bridge abutments as well as the temporary falsework. In-channel work will occur July 1-October 31 when flows and water temperatures are unlikely to be suitable for any life stage of salmonid. Any pile driving in the remainder of the work season (May 1 – June 30) when fish have a potential to be present will be on land a minimum of 10 meters from Little Chico Creek and move in an easterly direction away from the creek. Therefore, hydroacoustic effects to listed species are expected to be unlikely.

2.5.2 Effects of the Proposed Action to Critical Habitat PBFs

Critical habitat has been designated in the action area for CCV steelhead. The following analysis includes potential effects to critical habitat PBFs resulting from the proposed action. The PBFs of critical habitat within the action area for CCV steelhead are (1) freshwater rearing sites; and (2) freshwater migration corridors.

Migratory corridor PBFs for CCV steelhead are likely to be affected by the proposed action. In-stream work is expected to temporarily affect a 700 foot length of critical habitat. Impacts are expected to include minor decreases in the flow regime and slight increases in temperatures. During the two separate seasons of in-water work, the width of the channel within the migratory corridor will be decreased, but the long-term Project footprint is expected to result in an increase of 31ft² of usable area for fish migration and rearing as existing in-stream piers will be removed and replaced with smaller piers.

The wider new bridge will shade Little Chico Creek by a total of 0.06 of an acre, a 0.03 acre increase from the existing bridge structure. This will degrade the PBF of migratory corridors by increasing the predation risk. Overwater structures can alter underwater light conditions and provide potential holding conditions for juvenile and adult fish, including species that prey on juvenile listed fishes.

Water quality may be temporarily affected due to increased turbidity during removal of bridge piers and during dewatering which could cause a temporary drop in oxygen levels. This will affect the migratory PBF component for adequate flow. These effects as well as construction debris, runoff, and dust affecting water quality, will be prevented through the implementation of aforementioned BMPs and spill prevention measures and an emergency response plan. These BMP actions will minimize the extent of adverse effects associated with the proposed action and impacts to critical habitat are expected to be minimal and temporary.

In addition, this Project will remove 37 trees in the Little Chico Creek floodplain, some of which will be within riparian habitat that supports rearing PBFs of critical habitat. BMPs will be implemented to minimize temporary effects; all disturbed areas will be returned to pre-project conditions within one year following completion of construction. These areas will be protected from washout using appropriate erosion control devices, hydroseeding, and revegetation. Trees will be replanted on-site and in-kind at a 3:1 ratio, so impacts to critical habitat due to riparian removal are expected to be temporary.

2.6 Cumulative Effects

"Cumulative effects" are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR 402.02). Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the ESA.

Some continuing non-Federal activities are reasonably certain to contribute to climate effects within the action area. However, it is difficult if not impossible to distinguish between the action area's future environmental conditions caused by global climate change that are properly part of the environmental baseline vs. cumulative effects. Therefore, all relevant future climate-related environmental conditions in the action area are described in the environmental baseline (Section 2.4).

2.6.1 Agricultural Practice

Agricultural practices in the action area may adversely affect riparian and wetland habitats through upland modifications of the watershed that lead to increased siltation or reductions in water flow. Water diversions are present in the watershed, Depending on the size, location, and season of operation any diversions which are unscreened may entrain and kill many life stages of aquatic species, including juvenile listed anadromous fish species.

2.6.2 Increased Urbanization

Increases in urbanization and housing developments can impact habitat by altering watershed characteristics, and changing both water use and stormwater runoff patterns. Increased growth will place additional burdens on resource allocations, including natural gas, electricity, and water, as well as on infrastructure such as wastewater sanitation plants, roads and highways, and public utilities. Some of these actions, particularly those that are situated away from waterbodies, will not require Federal permits, and thus will not undergo review through the ESA section 7 consultation process with NMFS.

2.6.3 Rock Revetment and Levee Repair Projects

Cumulative effects include non-Federal riprap projects. Depending on the scope of the action, some non-Federal rock revetment projects carried out by state or local agencies do not require Federal permits. These types of actions and illegal placement of RSP occur within the Little Chico Creek watershed. Most of the levees have roads on top of the levees, which are either maintained by the county, reclamation district, owner, or by the state. Landowners may utilize roads at the top of the levees to access part of their agricultural land. The effects of such actions result in continued fragmentation of existing high-quality habitat, and conversion of complex nearshore aquatic to simplified habitats that affect salmonids in ways similar to the adverse effects associated with this project.

2.7 Integration and Synthesis

The Integration and Synthesis section is the final step in our assessment of the risk posed to species and critical habitat as a result of implementing the proposed action. In this section, we add the effects of the action (Section 2.5) to the environmental baseline (Section 2.4) and the cumulative effects (Section 2.6), taking into account the status of the species and critical habitat (Section 2.2), to formulate the agency's biological opinion as to whether the proposed action is likely to: (1) Reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing its numbers, reproduction, or distribution; or (2) appreciably diminishes the value of designated or proposed critical habitat for the conservation of the species.

2.7.1 Status of the CCV Steelhead DPS

The 2016 status review (NMFS 2016b) concluded that overall, the status of CCV steelhead appears to have changed little since the 2011 status review when the Technical Recovery Team concluded that the DPS should remain listed as threatened. Further, there is still a general lack of data on the status of wild populations. There are some encouraging signs, as several hatcheries in the Central Valley have experienced increased returns of CCV steelhead over the last few years. There has also been a slight increase in the percentage of wild CCV steelhead in salvage at the south Delta fish facilities, and the percentage of wild fish in those data remains much higher than at Chipps Island. The new video counts at Ward Dam show that Mill Creek likely supports one of the best wild CCV steelhead populations in the Central Valley, though at much reduced levels from the 1950s and 1960s. Restoration efforts in Clear Creek continue to benefit CCV steelhead. However, the catch of unmarked (wild) CCV steelhead at Chipps Island is still less than 5 percent of the total smolt catch, which indicates that natural production of CCV steelhead throughout the Central Valley remains at very low levels. Despite the positive trend on Clear Creek and encouraging signs from Mill Creek, all other concerns raised in the previous status review remain.

2.7.2 Status of the CV Spring-Run Chinook Salmon ESU

In the 2016 status review, NMFS found, with a few exceptions, CV spring-run Chinook salmon populations have increased through 2014 returns since the last status review (2010/2011), which moved the Mill and Deer creek populations from the high extinction risk category, to moderate, and Butte Creek remaining in the low risk of extinction category. Additionally, the Battle Creek and Clear Creek populations continued to show stable or increasing numbers in that period, putting them at moderate risk of extinction based on abundance. Overall, the Southwest Fisheries Science Center concluded in their viability report that the status of CV spring-run Chinook salmon (through 2014) had probably improved since the 2010/2011 status review and that the ESU’s extinction risk may have decreased. However, the 2015 returning fish were extremely low (1,488), with additional pre-spawn mortality reaching record lows. More recent 2017 returns were even lower (2,087 total). Since the effects of the severe drought that impacted California from 2012 to 2015 have not been fully realized, NMFS anticipates at least several more years of very low returns, which may result in severe rates of decline (NMFS 2016a).

2.7.3 Cumulative Effects

Agricultural land use, water diversions, increased urbanization, and continuing rock revetment can be reasonably assumed to occur in the future in the action area. The effects of these actions result in the continued degradation, simplification, and fragmentation of the riparian and freshwater habitat. Some of these actions, particularly those that are situated away from waterbodies, will not require Federal permits, and thus will not undergo review through the ESA section 7 consultation process with NMFS.

2.7.4 Summary of the Effects of the Proposed Action

CCV steelhead and CV spring-run may be harassed, injured, or killed during completion of the proposed action through various pathways. Direct effects from Project activities are expected to result in negative effects through behavioral responses, or prey items killed from sediment or pollutant buildup. Any spills or leaks of toxic substances from construction equipment are expected to cause direct or indirect effects to fish that may result in mortality or reduce the overall health and survival of exposed fish. Construction-related increases in sedimentation and siltation above background levels are expected to affect fish species and their habitat by reducing the survival of juveniles or interfering with feeding, migrating, and rearing activities. Avoidance and mitigation measures, as well as BMPs, will be in place to minimize negative effects to listed species. The implementation of the capture and relocation plan is also expected to increase risks to fish, and may result in a small number injuries and death.

Critical habitat has been designated in the action area for CCV steelhead. The proposed construction will temporarily decrease the action area's ability to safely support CCV steelhead at a variety of life stages and will increase the risk of mortality events or behavioral changes. The removal of 37 trees will temporarily decrease the riparian habitat value within the action area, however mitigation onsite and in-kind at a 3:1 ratio ensures these effects are temporary and minimal. A total of 0.06 acre of critical habitat will be permanently affected in shading from the bridge. The rearing and migratory corridor PBFs that support CCV steelhead will be negatively impacted through bridge shading. These permanent impacts only represent a small loss in the scope of the available habitat for CCV steelhead, but the intrinsic value of the area for the conservation of fish remains high.

2.7.5 Summary

According to the most recent status reviews, CCV steelhead and CV spring-run are at some level of threat or risk of extinction due to past and present activities within the greater Sacramento River watershed that have caused significant habitat loss, degradation, and fragmentation. Cumulative effects like water diversions, increased urbanization, and continuing RSP (rip rap) projects will all continue to happen in the action area without necessarily requiring Federal permitting. During this proposed Project, fish are expected to be harassed, injured, or killed during completion of the proposed action through various pathways. Construction related effects from the Project as well as pollution events, dewatering and fish capture and relocation, turbidity increases, and increased shading all have the potential to affect fish. Avoidance and mitigation measures, as well as BMPs, have been put in place and will be implemented to reduce any negative effects to listed species.

Onsite mitigation will minimize the loss of ecosystem function due to the modification of the riverbank and streambed. Measures are included in the proposed action to protect fish and designated critical habitat.

Although there are temporary and permanent impacts expected to result from the Project, when added to the environmental baseline and cumulative effects, the impacts from the Project in the action area are expected to be minor, and in some cases will occur during seasons when fish abundance is low as a result of lower stream flows and increased temperatures.

2.8 Conclusion

After reviewing and analyzing the current status of the listed species and critical habitat, the environmental baseline within the action area, the effects of the proposed action, any effects of interrelated and interdependent activities, and cumulative effects, it is NMFS' biological opinion that the proposed action is not likely to jeopardize the continued existence of CCV steelhead or CV spring-run Chinook salmon or destroy or adversely modify designated critical habitat.

2.9 Incidental Take Statement

Section 9 of the ESA and Federal regulations pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without a special exemption. "Take" is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. “Harm” is further defined by regulation to include significant habitat modification or degradation that actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR 222.102). “Incidental take” is defined by regulation as takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR 402.02). Section 7(b)(4) and section 7(o)(2) provide that taking that is incidental to an otherwise lawful agency action is not considered to be prohibited taking under the ESA if that action is performed in compliance with the terms and conditions of this ITS.

2.9.1 Amount or Extent of Take

In the biological opinion, NMFS determined that incidental take of CV spring-run and CCV steelhead is reasonably certain to occur in each of the two work seasons of the Ord Ferry Little Chico Creek Bridge Replacement Project. Specifically, NMFS anticipates that juvenile and adult CCV steelhead; and adult CV spring-run may be killed, injured, harassed, or harmed as a result of Project implementation as they have the potential to be present during the work window. Take is expected to occur in the form of injury, death, and harm resulting from dewatering activities and the permanent effects of shading to aquatic habitat.

It is impossible to precisely quantify and track the amount or number of individuals that are expected to be incidentally taken (injure, harm, kill, etc.) as a result of the proposed action due to the variability and uncertainty associated with the response of CCV steelhead or CV spring-run to the effects of the proposed action, the varying population size, annual variations in the timing of spawning and migration, individual habitat use within the action area, and difficulty in observing injured or dead fish. However, it is possible to estimate the extent of incidental take by designating as ecological surrogates, those elements of the Project that are expected to result in incidental take, that are more predictable and/or measurable, with the ability to monitor those surrogates to determine the extent of take that is occurring.

Ecological surrogates are Project elements that are expected to result in take and are predictable and/or measurable. Ecological surrogates can be monitored to approximate the level of take that occurs. Ecological surrogates for construction effects are described below. Overall, the number of listed fish incidentally taken during activities is expected to be small, due to BMPs such as conducting construction activities during the proposed work window when the likelihood of listed species presence is lower.

1) Fish Entrapment: NMFS anticipates take in the form of capture, handling, injury, and death to juvenile CCV steelhead and CV spring-run from construction of water diversion, dewatering, fish capture and relocation, and culvert installation for the fill of the access road. The total wetted area anticipated to be affected by the access road is 0.35 acres from May 1 – October 31 for each of the two work seasons; diversions will be removed between seasons. The size of the dewatered section is the ecological surrogate for these effects because it is where capture and relocation or dewatering will directly affect CCV steelhead and CV spring-run. If Caltrans exceeds the 0.35 acre access road footprint, the proposed Project will be considered to have exceeded anticipated take levels, thus

requiring Caltrans to cease operations and coordinate with NMFS within 24 hours on ways to reduce the amount of take down to anticipated levels.

2) Downstream Effects: Water quality is also expected to be temporarily affected over the 700 foot length of stream in the action area due to increased turbidity during removal of bridge piers and during dewatering which could cause a temporary drop in dissolved oxygen levels. These water quality effects are expected to cause harm to juvenile and adult CCV steelhead and CV spring-run in the form of reduced fitness. This 700 foot area is the ecological surrogate for downstream impacts because it is where increased turbidity and reduced water quality will indirectly affect fish. If Caltrans exceeds the 700 foot length of stream, the proposed Project will be considered to have exceeded anticipated take levels, thus requiring Caltrans to cease operations and coordinate with NMFS within 24 hours on ways to reduce the amount of take down to anticipated levels.

3) Overwater Structure Impacts: NMFS anticipates that CCV steelhead and CV spring-run will be harmed as a result of shading by the new structure over the Little Chico Creek. This shading is expected to reduce the primary productivity of affected habitats and increase the number of predatory fishes holding in the action area and/or their ability to prey. The ecological surrogate for incidental take associated with the action is the permanent shading of 0.06 acres of Little Chico Creek in the action area, which is appropriate because it is where shading will directly affect CCV steelhead.

Anticipated incidental take will be exceeded if: (1) the ecological surrogates described in the sections above continue to be exceeded after additional measures (in coordination with NMFS) have been taken; (2) the Proposed Action is not implemented as described in the prepared BA; (3) all conservation measures are not implemented as described in the BA (including successful completion of monitoring and reporting criteria); or (4) the Action is not implemented in compliance with the terms and conditions of this incidental take statement.

2.9.2 Effect of the Take

In the biological opinion, NMFS determined that the amount or extent of anticipated take, coupled with other effects of the proposed action, is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

2.10 Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Specifically, conservation recommendations are suggestions regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR 402.02).

1) Caltrans should continue to work cooperatively with other State and Federal agencies, private landowners, governments, and local watershed groups to identify opportunities for cooperative analysis and funding to support salmonid habitat restoration

projects within the Sacramento River Basin. Implementation of future restoration projects is consistent with agency requirements set forth in section 7(a)(1).

2) Caltrans should limit the amount of RSP used for bank and in-stream protection in the Central Valley to the minimum amount needed for erosion and scour. Engineering plans shall be provided to the contractors that clearly show the amount of RSP to be placed at the Project site. Limitation of RSP in design considerations is consistent with agency requirements set forth in section 7(a)(1).

3) Caltrans should consider using alternative methods to traditional RSP for bridge projects and incorporating geotextiles for bank erosion control and prevention. Bioengineered products are available on the market and can be used to protect areas against erosive forces along shorelines and is an alternative to using riprap. Implementation of RSP alternatives in design considerations is consistent with agency requirements set forth in section 7(a)(1).

2.10.1 Reasonable and Prudent Measures

"Reasonable and prudent measures" are nondiscretionary measures that are necessary or appropriate to minimize the impact of the amount or extent of incidental take (50 CFR 402.02).

1) Fish rescue operations will be conducted according to the specifications provided to NMFS and the NMFS-approved supervising biologist(s) will oversee all aspects of dewatering and fish handling operations.

2) Caltrans shall report any incidence of take to NMFS within 24 hours.

3) Caltrans shall provide a report of project activities to NMFS by December 31 of each construction year.

2.10.2 Terms and Conditions

The terms and conditions described below are non-discretionary, and Caltrans or any applicant must comply with them in order to implement the RPMs (50 CFR 402.14). Caltrans or any applicant has a continuing duty to monitor the impacts of incidental take and must report the progress of the action and its impact on the species as specified in this ITS (50 CFR 402.14). If the entity to whom a term and condition is directed does not comply with the following terms and conditions, protective coverage for the proposed action would likely lapse.

1) The following terms and conditions implement reasonable and prudent measure 1:

   a. All aspects of fish rescue operations shall be supervised by at least one NMFS-approved biologist who will be personally on site throughout each phase of the rescue operation.

   b. A written plan for a fish rescue operation specific to this project shall be provided to NMFS for approval 45 days prior to implementation of the project. The plan shall be thoroughly understood by all individuals that are to be involved and operations shall be conducted in strict accordance with the written plan.

2) The following terms and conditions implement reasonable and prudent measure 2:

   a. Caltrans shall record the date, number, and specific location of all listed fish that are relocated in the dewatering and diversion in addition to any direct mortality observed during in-water work and relocation. If a listed species is observed, injured, or killed by project activities, Caltrans shall contact NMFS within 24 hours at 916-930-3600. Notification shall include species identification, the number of fish, and a description of the action that resulted in take.

3) The following terms and conditions implement reasonable and prudent measure 3:

   a. A report shall include a summary description of in-water construction dates and activities, avoidance and minimization measures taken, and any revegetated areas on-site. Updates and reports required by these terms and conditions shall be submitted by December 31 of each year during the construction period to:

      Maria Rea
      Central Valley Office
      National Marine Fisheries Service
      650 Capitol Mall, Suite 5-100
      Sacramento CA 95814
      FAX: (916) 930-3629
      Phone: (916) 930-3600

2.11 Reinitiation of Consultation

This concludes formal consultation for the Ord Ferry Bridge Replacement Project on Little Chico Creek.

As 50 CFR 402.16 states, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental taking specified in the ITS is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, (3) the agency action is subsequently modified in a manner that causes an effect on the listed species or critical habitat that was not considered in this opinion, or (4) a new species is listed or critical habitat designated that may be affected by the action.

3 FISH AND WILDLIFE COORDINATION ACT

The purpose of the Fish and Wildlife Coordination Act (FWCA) is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development (16 USC 661). The FWCA establishes a consultation requirement for Federal agencies that undertake any action to modify any stream or other body of water for any purpose, including navigation and drainage (16 USC 662(a)), regarding the impacts of their actions on fish and wildlife, and measures to mitigate those impacts. Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources, and providing equal consideration for these resources. NMFS' recommendations are provided to conserve wildlife resources by preventing loss of and damage to such resources. The FWCA allows the opportunity to provide recommendations for the conservation of all species and habitats within NMFS' authority, not just those currently managed under the ESA and MSA.

The following recommendations apply to the proposed action:

- Caltrans should post interpretive signs within the action area describing the presence of listed fish and/or critical habitat as well as highlighting their ecological and cultural value.

The Action Agency must give these recommendations equal consideration with the other aspects of the proposed action so as to meet the purpose of the FWCA.

This concludes the FWCA portion of this consultation.

4 DATA QUALITY ACT DOCUMENTATION AND PRE-DISSEMINATION REVIEW

The Data Quality Act (DQA) specifies three components contributing to the quality of a document. They are utility, integrity, and objectivity. This section of the opinion addresses these DQA components, documents compliance with the DQA, and certifies that this opinion has undergone pre-dissemination review.

4.1 Utility

Utility principally refers to ensuring that the information contained in this consultation is helpful, serviceable, and beneficial to the intended users. The intended users of this opinion are is Caltrans. Other interested users could include contractors, citizens and landowners in the Little Chico Creek watershed, and other stakeholders in Little Chico Creek, California Central Valley steelhead, or Central Valley spring-run Chinook salmon. Individual copies of this opinion were provided to Caltrans. The document will be available through the NOAA Institutional Repository, after approximately two weeks. The format and naming adheres to conventional standards for style.

4.2 Integrity

This consultation was completed on a computer system managed by NMFS in accordance with relevant information technology security policies and standards set out in Appendix III, 'Security of Automated Information Resources,' Office of Management and Budget Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

4.3 Objectivity

Information Product Category: Natural Resource Plan

Standards: This consultation and supporting documents are clear, concise, complete, and unbiased; and were developed using commonly accepted scientific research methods. They adhere to published standards including the NMFS ESA Consultation Handbook, ESA regulations, 50 CFR 402.01 et seq., and the MSA implementing regulations regarding EFH, 50 CFR 600.

Best Available Information: This consultation and supporting documents use the best available information, as referenced in the References section. The analyses in this opinion contain more background on information sources and quality.

Referencing: All supporting materials, information, data and analyses are properly referenced, consistent with standard scientific referencing style.

Review Process: This consultation was drafted by NMFS staff with training in ESA and reviewed in accordance with West Coast Region ESA quality control and assurance processes.

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ATTACHMENT D

BIOLOGICAL OPINION (USFWS)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2018-F-3017-1

FEB 15 2019

Ms. Laura Loeffler
Chief, North Region Environmental Planning, M-1 Branch
California Department of Transportation, District 3
703 B Street
Marysville, California 95901-0911

Subject: Formal Consultation on the Proposed Ord Ferry Road Bridge Replacement Project, Butte County, California (Caltrans Fed. ID# BRLS 5912 (103))

Dear Ms. Loeffler:

This letter is in response to the California Department of Transportation's (Caltrans), August 14, 2018, initial request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Ord Ferry Road Bridge Replacement Project (proposed project) in Butte County, California. Your initial request and accompanying *Ord Ferry Road at Little Chico Creek Bridge Replacement Project Biological Assessment-USFWS* (biological assessment) were received by the Service on August 20, 2018; however, all of the information necessary to begin consultation was not received until December 20, 2018. At issue are the proposed project's effects on the federally-listed as threatened giant garter snake (*Thamnophis gigas*) (snake). This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action on which we are consulting is the construction of a replacement bridge on Ord Ferry Road over Little Chico Creek by Butte County (applicant) in cooperation with Caltrans and the Federal Highway Administration (FHWA). The proposed project is receiving federal funding through FHWA, and Caltrans has assumed FHWA's responsibilities as the lead agency under the Act for this consultation in accordance with Section 1313, Surface Transportation Project Delivery Program, of the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012. The MAP-21 is described in the National Environmental Policy Act assessment Memorandum of Understanding between FHWA and Caltrans (effective March 30, 2017) and codified in 23 U.S.C. 327.

Pursuant to 50 CFR §402.12(j), you submitted a biological assessment for our review and requested concurrence with the findings presented therein. These findings conclude that the proposed project may affect, and is likely to adversely affect the snake. The proposed project is not within designated or proposed critical habitat for any federally-listed species.

In considering your request, we based our evaluation on the following: (1) the August 14, 2018, letter initiating formal consultation; (2) the March 2018, *Ord Ferry Road at Little Chico Creek Bridge Replacement Project Biological Assessment-USFWS*, prepared by Gallaway Enterprises (consultant); (3) the October 2, 2018, site visit with the Service, Caltrans, consultant, and Quincy Engineering (engineer);

(4) e-mail correspondence between the Service and Caltrans; and (5) other information available to the Service.

Consultation History

August 20, 2018:	The Service received the August 14, 2018, letter from Caltrans initiating formal consultation and associated biological assessment.
October 2, 2018:	Site visit including the Service, Caltrans, consultant, and engineer. Discussed proposed project effects to the western yellow-billed cuckoo.
October 10, 2018:	The Service received e-mail from Caltrans regarding a "no effect" determination for the western yellow-billed cuckoo.
October-December 2018:	The Service and Caltrans corresponded regarding additional information needed in order for consultation to begin.
December 20, 2018:	The Service received all of the complete information from Caltrans in order for consultation to begin.

The remainder of this document provides our biological opinion on the effects of the proposed project on the snake.

BIOLOGICAL OPINION

Description of the Action

Butte County, in conjunction with Caltrans, is proposing to replace the current Ord Ferry Bridge with a new bridge over Little Chico Creek due to its structurally deficient status. The proposed project is located southwest of the city of Chico, approximately 3.5 miles west of Dayton Road near the town of Dayton. Construction will be completed over two years and will only occur between May 1 and October 31. Construction in and adjacent to riparian vegetation will be initiated prior to June 15 and occur through August 15. Clearing and grubbing will be performed in the first year. Bridge removal, grading, and bridge construction will take place during both construction seasons. Equipment including excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, pile driving hammers, and pile driving equipment will be required to construct the new bridge.

The existing bridge is 620-feet long by 20-feet wide and is too narrow to support current traffic. The proposed bridge will replace the existing structure on the current alignment and will be approximately 640 feet long by 43 feet wide and carry two 12-foot traffic lanes and two 8-foot shoulders. The new structure will be composed of a cast-in-place reinforced concrete slab with 17 spans arranged in two frames with an intermediate hinge. The intermediate supports are expected to be small diameter pile extensions founded on cast-in-steel-shell piles. These pile shafts will be driven using a crane and pile hammer. Bridge abutments will be reinforced concrete seat style abutments founded on driven 16-inch piles and will require impact pile driving.

Ord Ferry Road also will be widened to 40 feet for a length of approximately 400 feet to the west of the proposed bridge and 500 feet to the east. The road surface will be tapered to match the existing cross section. Fill will be imported from a local rockyard to provide a smooth vertical transition from the new bridge deck level to the existing roadway grade. Temporary lane closure with traffic control will be required during construction. The first construction stage will reduce the existing bridge to a single 11-foot traffic lane and demolish a portion of the existing bridge. A portion of the new bridge will then be constructed with a lane approximately 13-feet wide. Traffic will then be moved to the new bridge portion while the remainder of the existing bridge is removed and the remainder of the new bridge is completed.

In addition, a temporary access road will be installed north of the existing bridge to accommodate construction vehicle traffic and oversized farm equipment during the staged bridge construction. The access road will include a clear water diversion using appropriately sized culverts and clean river gravel within Little Chico Creek. The temporary road and culverts will be removed on or before October 31 of each construction season due to seasonal flooding within the action area. The site will be stabilized with temporary erosion and sediment controls prior to the flooding season. Rock slope protection will be added along the bank for the width of the bridge and approximately 40 feet on either side of the bridge. The superstructure of the new bridge will be positioned to allow 100-year flood flows to pass under the new bridge with a minimum of 2 feet of freeboard.

Conservation Measures
In addition to implementing Caltrans' standard Best Management Practices throughout the proposed project for the duration of construction, including erosion and sediment control, Caltrans has proposed the following measures to minimize effects to the snake. The measures proposed below are considered part of the proposed action evaluated by the Service in this biological opinion.

1. A qualified biologist will conduct a pre-construction survey 24 hours before any vegetation removal or ground disturbance activities are conducted within aquatic and upland snake habitat. Whenever a lapse in construction activity within snake habitat of two weeks or more has occurred, the area will be resurveyed.
2. A qualified biologist will be on-site to monitor for snakes during all vegetation removal and initial ground disturbing activities within snake habitat. The biological monitor will assist the contractor in avoiding disturbance to burrows in the upland habitat during the snake active period. After the initial ground disturbing activities have been completed, the biological monitor will conduct a weekly check of the site to ensure compliance with the conservation measures.
3. All project related ground disturbance to snake habitat will occur in the snake active season (May 1 through October 31). The snake active season typically ends on October 1, however, in the event that there is constant activity, including constant ground and noise disturbances that will preclude snakes from the project area, the snake active season will extend to October 31.
4. Snake exclusion fencing will be installed around the entire action area. Installation will occur after vegetation removal in suitable snake habitat so as not to trap any refuging snakes within the project area. Fence location will be designated by the qualified biologist. The fence must be maintained throughout the duration of the project and removed upon completion of the project. The exclusion fencing will be inspected regularly by the biological monitor to ensure they are being properly maintained.
5. All excavated areas more than 1-foot deep that could entrap a snake and will be left open overnight will be covered, or if covering is not feasible, then the excavated area will be provided with one or more escape ramps.
6. Tightly woven fiber netting (mesh size less than 0.25 in), coconut coir matting, or similar material will be used for erosion control purposes. Plastic microfilament or wire mesh in straw waddles or erosion control blankets will not be used. The edge of the erosion control

materials will be buried in the ground to prevent snakes from crawling underneath the material.

7. If a snake is observed at any time during project activities, then construction will stop within 100 feet of the observation and the qualified biologist and/or resident engineer will be contacted immediately for further guidance.
8. If there is incidental take of a snake during project activities, then a qualified biologist and/or resident engineer will be contacted immediately and the Service and California Department of Fish and Wildlife (CDFW) will be notified within 24 hours and consulted for further guidance.
9. A Worker Environmental Awareness Training Program for construction personnel will be conducted by a qualified biologist for all personnel that will be within the project area for more than 30 minutes, prior to commencement of their responsibilities. The program will provide workers with information on their responsibilities with regard to avoiding impacts to the snake. An overview of the life history of the snake will include information on take prohibitions, protections afforded these species under the Act, and an explanation of the relevant terms and conditions.
10. All vegetation clearing within 200 feet of the banks of suitable snake aquatic habitat will be limited to the smallest area feasible and equipment movement will be limited to designated haul routes and staging areas. Avoided snake habitat will be flagged for avoidance.
11. All temporarily disturbed snake habitat will be restored to pre-project conditions and monitored for one year after completion of construction.
12. All construction debris and stockpiled materials will be removed.
13. The area will be regraded to the preexisting contour, or a contour that would improve restoration potential of the site.
14. The restoration area will be hydro-seeded with a mix of at least 20-40 percent native grass seeds (such as annual fescue (*Vulpia spp.*), California brome (*Bromus carinatus*), blue wildrye (*Elymus glaucus*), and needle grass (*Nassella spp.*), 2-10 percent native forb seeds, five percent rose clover (*Trifolium hirtum*), and five percent alfalfa (*Medicago sativa*). Approximately 40-68 percent of the mixture may be non-aggressive European annual grasses (such as wild oats (*Avena sativa*), wheat (*Triticum ssp.*), and barley (*Hordeum vulgare*). Mixes of 100 percent native grasses and forbs may also be used, and are encouraged.
15. Restoration of habitat will be monitored for one year following implementation. Vegetative cover of 70 percent pre-project conditions after one year must be achieved. Monitoring reports documenting the restoration effort will be submitted to the Service: (1) upon completion of the restoration implementation; and (2) one year from restoration implementation. Monitoring reports will include recommendations for remedial actions and approval from the Service, if necessary, and justification from release of any further monitoring, if requested.
16. Permanent loss of aquatic snake habitat will be compensated at a 3:1 ratio and permanent loss of upland snake habitat will be compensated at a 1:1 ratio by purchasing snake credits at the Sutter Basin Conservation Bank or at another Service-approved conservation bank with a service area that includes the project location. Credits will be purchased prior to the start of construction.

Action Area

The action area is defined in 50 CFR §402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the proposed project, the action area encompasses the entire proposed project and 300 feet south of the project boundary along Little Chico Creek to account for indirect effects to water quality during instream work. The action area also includes all areas up to 330 feet from the construction footprint in which noise from construction activities is expected to exceed ambient levels (derived from Service 2006).

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Act requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR §402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed federal action, and any cumulative effects, on the range-wide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the range-wide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed federal action and the effects of any interrelated or interdependent activities on the species; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-federal activities in the action area on the species.

Status of the Species

For the most recent comprehensive assessment of the range-wide status of the snake, please refer to the *Giant Garter Snake (Thamnophis gigas) 5-year Review: Summary and Evaluation* (Service 2012). No change in the snake's listing status was recommended in this 5-year review. Threats evaluated during that review and discussed in the final document have continued to act on the species since the 2012 5-year review was finalized, with loss of habitat being the most significant effect. While there have been continued losses of snake habitat throughout the various recovery units, to date no project has proposed a level of effects for which the Service has issued a biological opinion of jeopardy for the species. The Service is in the process of finalizing its most current 5-year review for the species.

Environmental Baseline

The proposed project is located within the Butte Basin Recovery Unit, identified as a "snake population and Recovery Unit" in the *Recovery Plan for the Giant Garter Snake* (Service 2017) (Recovery Plan). The Butte Basin Recovery Unit extends from Red Bluff in the north to the Sutter Buttes in the south. The action area is located within the Llano Seco Management Unit within the Butte Basin Recovery Unit. Land use in the project vicinity is dominated by deciduous orchards. The action area consists of Ord Ferry Road, a major rural collector that bisects riparian forest associated with the historic floodplain of Little Chico Creek. The vegetation communities within the action area consist of 7 acres of mid to late successional valley foothill riparian forest, 5.3 acres of deciduous orchard, 3.7 acres of annual grassland habitats, 0.72 acre of riverine habitat, and 0.53 acre of emergent wetland.

There are three known occurrences of the snake in the California Natural Diversity Database (CNDDB) within a 5-mile vicinity (CNDDB 2018). The closest known occurrence is approximately 1 mile east of the proposed project. This occurrence was recorded in 1950 but is presumed to be extant and is hydrologically connected to the proposed project. Suitable aquatic habitat for the snake occurs within the action area in the form of Little Chico Creek, two tributaries of Little Chico Creek, an irrigation canal, and a freshwater emergent wetland. Wetland vegetation and summer water are present and provide foraging and refuge habitat for the snake. The upland snake habitat is not contiguous along the banks of the water features and approximately 75% of the area is shaded by riparian vegetation such as cottonwoods, willows, and orchards, which the snake will not utilize. However, the remaining upland vegetation along the banks provides suitable basking habitat for the snake. Given the proximity of known occurrences and the presence of suitable aquatic and upland habitat, it is likely that the snake is present within the action area.

Effects of the Action

Project activities, including the construction of the bridge abutments and placement of rock slope protection, will result in the permanent loss of 0.03 acre of aquatic snake habitat and 0.56 acre of upland snake habitat. The permanent loss of these habitats will remove opportunities for the snake to forage in aquatic habitat, or to use upland habitat to bask and/or use as winter refugia. Consequently, individual snakes will no longer be able to thermoregulate above- or below-ground, seek protection from predators, or find hibernacula in these upland areas during its inactive season. Alternative upland and aquatic locations that are located further afield or downstream will increase the amount of time in which an individual travels, thereby increasing its risk of exposure to predation.

The temporary access road and associated culverts will result in the temporary disturbance of approximately 0.17 acre of aquatic snake habitat and 1.54 acres of upland snake habitat. The temporary disturbance to habitat from construction will prevent the snake from using these areas only in the short-term, since the upland and aquatic habitats will be restored to pre-project conditions within one year of construction completion.

Construction activities will primarily occur prior to October 1, when snakes are more active and more able to move away from construction equipment. Construction activities could result in injury, mortality, or disturbance to the snake. Equipment can injure or crush a snake if it is basking or sheltering in upland refugia and does not move away from the construction. The noise and general activity can also cause snakes to move away from the construction and make them more vulnerable to predation.

As noted previously in the *Description of the Action* section, Caltrans has also proposed a set of conservation measures, including the commitment to provide compensatory habitat as a condition of the action. This compensatory habitat is intended to minimize the effect on the species of the proposed project's anticipated incidental take, resulting from the permanent loss of habitat as described above. The compensatory habitat proposed will be in the form of snake conservation credits at a Service-approved conservation bank with a service area that covers the proposed project. Replacement of permanently impacted aquatic snake habitat well be compensated at a 3:1 ratio and permanently impacted upland snake habitat will be compensated at a 1:1 ratio for a total of 0.66 credits to be purchased. This component of the action will have the effect of protecting and managing lands for the species' conservation in perpetuity. The compensatory lands will provide suitable habitat for breeding, feeding, or sheltering commensurate with or better than habitat lost as a result of the proposed project. Providing this compensatory habitat as part of the relatively large, contiguous block of conserved land may contribute to recovery efforts of the species.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

Conclusion

After reviewing the current status of snake, the environmental baseline for the action area, the effects of the proposed project, and the cumulative effects, it is the Service's biological opinion that the Ord Ferry Road Bridge Replacement Project, as proposed, is not likely to jeopardize the continued existence of the snake. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species based on the conservation measures proposed by Caltrans and the purchase of conservation credits to minimize the permanent loss of snake habitat.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act, which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by Caltrans so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

Amount or Extent of Take

The Service anticipates that incidental take of the snake will be difficult to detect or quantify because the number of individuals in the action area is unknown, and estimates of population density in the action area are unavailable. The snake is secretive and uses underground burrows for shelter while not in aquatic habitat during the active season and for brumation during the inactive season. In instances in which the number of individuals that may be taken cannot be determined, the Service may quantify take in the amount of lost or disturbed habitat as a result of the project action; since take is expected to result from these effects to habitat, the quantification of habitat becomes a direct surrogate for the species that will be taken. Therefore, the Service anticipates that within the action area, all snakes inhabiting the 0.17 acres of aquatic habitat and the 1.54 acres of upland habitat that will be temporarily disturbed, as well as the 0.03 acres of aquatic habitat and the 0.56 acres of upland habitat that will be lost, will be subject to incidental take in the form of harm; snakes within the 0.03 acres of aquatic habitat and/or using underground burrows within the 0.56 acres of upland habitat in the action area may also be killed or harmed. Although it is infeasible to quantify the exact number of snakes that may be incidentally taken, the Service anticipates that the number will be low based on the fact that snakes are expected to avoid active construction if possible, as well as the conservation measures proposed by Caltrans.

Since we cannot estimate the number of individual snakes that will be incidentally taken for the reasons listed above, we are providing a mechanism to quantify when take would be considered to be exceeded as a result of implementing the proposed project. We will use detection of one (1) dead or injured snake to determine when take is exceeded. By setting a threshold of one individual detected, we have set an incidental take limit that is measurable, irrefutable, and indicates that the snake is being affected at a level where avoidance and minimization measures and project implementation need to be evaluated and possibly modified. We conclude that incidental take of the snake will be considered exceeded if one dead or injured snake is detected by biological monitors or other project personnel.

Upon implementation of the following *Reasonable and Prudent Measures*, incidental take of the snake associated with the proposed Ord Ferry Road Bridge Replacement Project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the snake.

Reasonable and Prudent Measures

All necessary and appropriate measures to avoid or minimize effects on the snake resulting from implementation of this project have been incorporated into the project's proposed conservation measures. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the snake:

1. All conservation measures, as described in the biological assessment and restated here in the *Project Description* section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the *Terms and Conditions* below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. Caltrans shall include full implementation and adherence to the conservation measures as a condition of any permit or contract issued for the project.
2. Caltrans will provide a copy of the completed bill of sale and payment receipt to the Service upon the purchase of snake conservation credits.
3. In order to monitor whether the amount or extent of incidental take anticipated from implementation of the proposed project is approached or exceeded, Caltrans shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must immediately reinitiate formal consultation, as per 50 CFR §402.16.
    a. For those components of the action that will result in habitat degradation or modification whereby incidental take in the form of harm is anticipated, Caltrans shall provide a precise accounting of the total acreage of habitat impacted to the Service after completion of construction. This report shall also include any information about changes in project implementation that result in habitat disturbance not described in the *Description of the Action* and not analyzed in this biological opinion.
    b. Caltrans shall immediately contact the Service's Sacramento Fish and Wildlife Office (SFWO) at (916) 414-6631 to report direct encounters between the snake, project workers, and their equipment whereby incidental take in the form of harassment, harm, injury, or mortality occurs. If the encounter occurs after normal working hours, Caltrans shall contact the Service at the earliest possible opportunity the next working day. When injured or killed individuals of the listed species are found, Caltrans shall follow the steps outlined in the *Salvage and Disposition of Individuals* section below.

Salvage and Disposition of Individuals

Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it. The bag containing the specimen must be frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact person is the Sacramento Valley Division Chief at the SFWO, at (916) 414-6631.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following action:

1. Caltrans should work with the Service to assist us in meeting the goals of the Recovery Plan for the snake.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the Ord Ferry Road Bridge Replacement Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required and shall be requested by the federal agency or by the Service where discretionary federal agency involvement or control over the action has been retained or is authorized by law and:

(a) If the amount or extent of taking specified in the incidental take statement is exceeded;

(b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;

(c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or

(d) If a new species is listed or critical habitat is designated that may be affected by the identified action.

If you have any questions regarding this biological opinion, please contact Andrea Korman, Fish and Wildlife Biologist (andrea_korman@fws.gov), or Kellie Berry, Chief, Sacramento Valley Division (kellie_berry@fws.gov), at the letterhead address or at (916) 414-6631.

Sincerely,

Jennifer M. Norris, Ph.D.
Field Supervisor

cc:
Melissa Murphy, Gallaway Enterprises, Chico, California
Suzanne Gilmore, California Department of Fish and Wildlife, Rancho Cordova, California
Nancy Haley, U.S. Army Corps of Engineers, Sacramento, California

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ATTACHMENT E

DRAFT WETLAND DELINEATION

DRAFT DELINEATION OF JURISDICTIONAL WATERS OF THE UNITED STATES

Ord Ferry Road at Little Chico Creek Bridge Replacement Project

Butte County, California

December 2017

Prepared for:
Quincy Engineering
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Contents

Introduction and Project Location 1
Environmental Setting and Site Conditions 1
Survey Methodology 4
Determination of Hydrophytic Vegetation 4
Determination of Hydric Soils 6
Determination of Wetland Hydrology 6
Determination of Ordinary High Water Mark 6
Jurisdictional Boundary Determination and Acreage Calculation 7
Non-Jurisdictional Boundary Determination and Acreage Calculation 7
Results 7
Waters of the United States: Other Waters 8
Waters of the United States: Wetlands 9
Soils 9
Vegetation 10
Hydrology 10
Site Photos Taken on December 1, 2016 12
Glossary 15
References 20

List of Tables and Figures

Table 1. Results from the Delineation of Waters of the United States for the Ord Ferry Road at Little Chico Creek Bridge Project, Butte County, CA. 8

Table 2. Soil Map Units, NRCS hydric soil designation, and approximate totals for the Ord Ferry Road at Little Chico Creek Bridge Project, Butte County, CA. 10

Figure 1 - Regional Location Map 2

Figure 2 - Project Location 3

Figure 3 - Photo Point Location Map 5

List of Appendices and Exhibits

Appendix A: Wetland Delineation Data Sheets

Appendix B: NRCS Soil Map and Soil Series Descriptions

Appendix C: Arid West Intermittent Streams OHWM Datasheets

Exhibit A: Draft Delineation of Waters of the U.S. Map

DRAFT DELINEATION OF JURISDICTIONAL WATERS OF THE UNITED STATES,

Ord Ferry Road at Little Chico Creek Bridge Replacement Project, Butte County, California

Introduction and Project Location

Gallaway Enterprises conducted a delineation of waters of the U.S. (WOTUS) and aquatic resources for the Ord Ferry Road at Little Chico Creek Bridge Replacement Project (Project) consisting of an approximately 14.5-acre survey area located on both sides of Ord Ferry Road positioned 4 miles west of Dayton Road near the Town of Dayton in unincorporated Butte County, CA (**Figure 1 and 2**). The Project site is composed of a 600 foot long bridge over Little Chico Creek, unnamed sloughs, and an irrigation canal. The Project is located within the Ord Ferry USGS Quadrangle in Section 36, Township 21N, Range 1W.

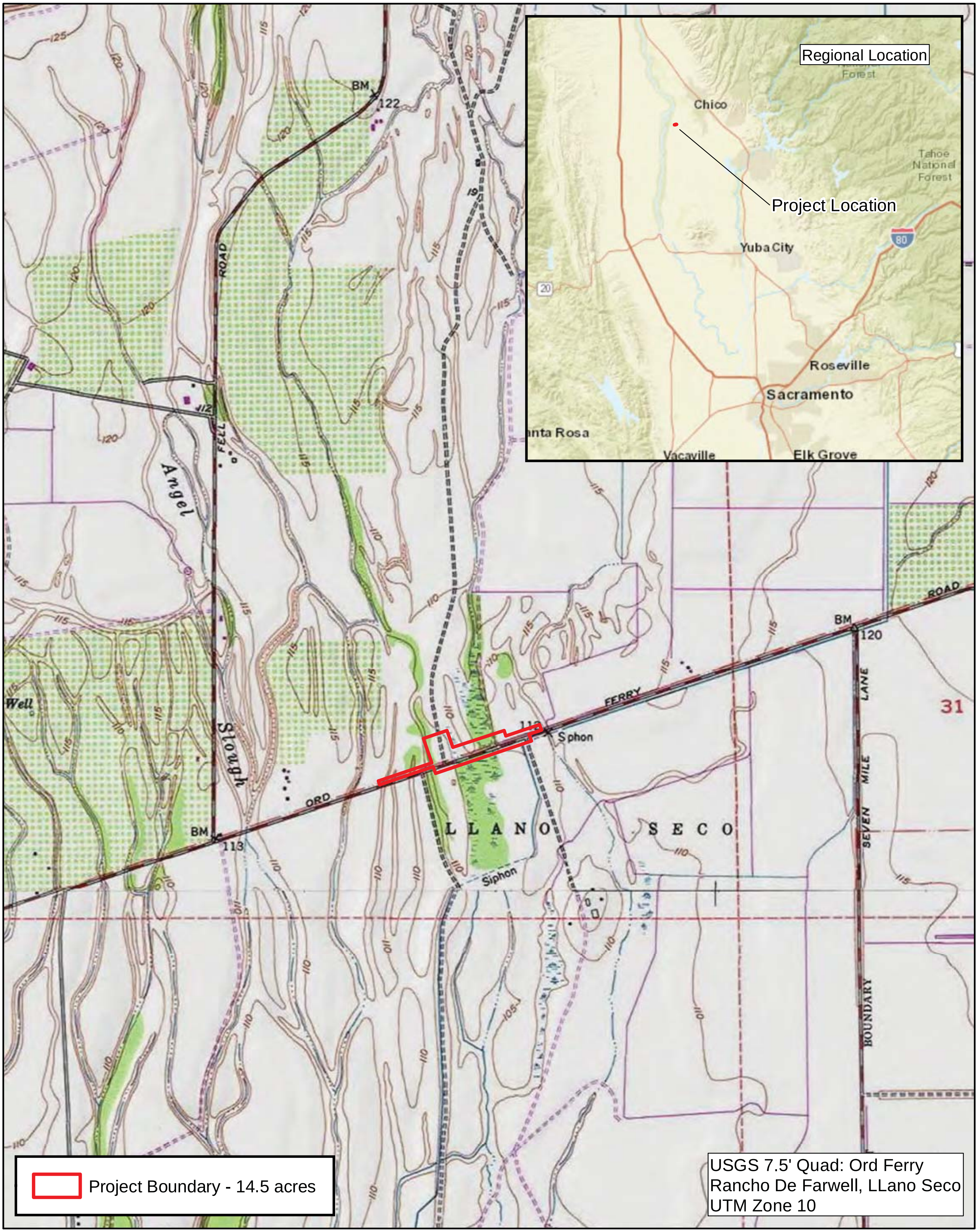
The Project site occurs on both sides of Ord Ferry Road in Butte County, CA. To get to the site from the Sacramento area; take Interstate 5 north toward Yuba City, then take State Highway 99 N to Yuba City. Continue on State Highway 99 N past Gridley then turn left onto CA-162 W/Butte City Hwy. Turn right onto Aguas Frias Road/Goodspeed Watt Road and then turn left onto Ord Ferry Road. Continue on Ord Ferry Road for approximately 4 miles and the Project site will start on both sides of Ord Ferry Road at the existing bridge.

A wetland survey was conducted on December 1, 2016 and October 4, 2017, by Senior Botanist Elena Gregg and Biologist Melissa Murphy. An additional site visit was conducted on April 12, 2017 by Ms. Murphy. Data regarding the location and extent of wetlands and other waters of the U.S. were collected using a Trimble Geo Explorer 6000 Series GPS Receiver. The survey involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual* (1987); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008); the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007); the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States*, (2008) and the *State of California 2016 Wetland Plant List.* Gallaway Enterprises have prepared this report in compliance with the Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (January 2016).

Environmental Setting and Site Conditions

The Project is located within remnant riparian habitat associated with Little Chico Creek surrounded by agricultural land to the east and west. Also present within the Project are patches of oak woodland and annual grassland habitat. Within the Project site, a 600 foot bridge spans riparian wetland, Little Chico Creek, unnamed sloughs, and an irrigation canal. A second smaller bridge spans another slough, and a portion of a large canal occurs within the Project site. Three additional wetlands including 2 seasonal wetlands and one willow riparian wetland occur in the southeastern portion of the Project site. A few dirt access roads occur in the western portions of the Project site, and vegetation immediately abutting Ord Ferry Road had been managed and understory vegetation removed prior to our field visit.

The average annual precipitation is 25.66 inches and the average annual temperature is 61.0° F (WRCC 2016) in the region where the survey area is located. The Project site ranges in elevation from 114 to 124 feet above sea level and is sloped between 0-5 percent. Soils within the survey area are loams and clay loams with a restrictive layer ranging from 20 to more than 80 inches in depth (NRCS 2016).



NORTH

1:24,000

0 500 1,000 Feet

Data Sources: ESRI,Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project

Regional Location Map

Figure 1

gallaway ENTERPRISES

GE# 16-025 Map Date: 02/13/17 Revised: 12/06/17

NORTH 1:2,000
0 100 200 Feet
Data Sources: ESRI, USDA NAIP
Imagery: 07/13/2016, Butte County

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Location Map
Figure 2

gallaway ENTERPRISES
GE# 16-025 Map Date: 02/13/17 Revised: 12/06/17

Survey Methodology

The entire Project site was surveyed on-foot by Gallaway Enterprises staff on December 1, 2016, April 12, 2017 and October 4, 2017 to identify any potentially jurisdictional features. The survey, mapping efforts, and report production were performed according to the valid legal definitions of waters of the United States (WOTUS) in effect on December 7, 2017. The boundaries of non-tidal, non-wetland waters, when present, were delineated at the ordinary high water mark (OHWM) as defined in 33 Code of Federal Regulations (CFR) 328.3. The OHWM represents the limit of United States Army Corps of Engineers (Corps) jurisdiction over non-tidal waters (e.g., streams and ponds) in the absence of adjacent wetlands (33 CFR 328.04) (Curtis, et. al. 2011). Historic aerial photographs were analyzed prior to conducting the field visit. Areas identified as having potential wetland signatures were assessed in the field to determine the current conditions.

Field data were entered onto data sheets using the most current format (**Appendix A**). Wetland perimeters based on the *United States Army Corps of Engineers Wetlands Delineation Manual* (1987) and the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Arid West Region* (2008) (Arid West Manual) were recorded and defined according to their topographic and hydrologic orientation. Sample points were established for each wetland and the corresponding upland zone. Test pit sampling was performed in areas displaying potential wetland signatures on past aerial photographs and problem areas. Test pit sampling points involved physical sampling of soils and vegetation, and investigation regarding hydrological connectivity. Only areas exhibiting the necessary wetland parameters according to the Arid West Manual on the date surveyed were mapped as wetlands. Photographs were taken to show wetland features, test pit areas, and/or areas identified as having historic wetland signatures. The locations of the photo points are depicted in **Figure 3** and the associated photographs are provided at the end of the report.

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

Determination of Hydrophytic Vegetation

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

Plant indicator status categories:

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

Ground Photographs Table

Label	Direction	Latitude	Longitude
P01	SW	39.631583	-121.928646
P02	S	39.631380	-121.928726
P02	W	39.631380	-121.928726
P03	E	39.631366	-121.929195
P04	E	39.631402	-121.929388
P05	E	39.631275	-121.929638
P06	N	39.631214	-121.929724
P07	SW	39.631033	-121.929713
P08	N	39.630956	-121.929949
P09	E	39.631174	-121.930340
P09	W	39.631174	-121.930340
P10	N	39.631069	-121.930633
P11	W	39.630734	-121.931943
P12	W	39.630665	-121.932103
P13	N	39.630886	-121.932264
P13	S	39.630886	-121.932264
P13	W	39.630886	-121.932264
P14	E	39.631431	-121.929865
P14	W	39.631431	-121.929865
P15	W	39.630344	-121.933688
P16	S	39.663388	-121.750900
P17	SW	39.631638	-121.928549
P18	S	39.631716	-121.928282

NORTH
1:2,000
0 100 200 Feet
Data Sources: ESRI, USDA NAIP
Imagery: 07/16/2016, Butte County

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Ground Photographs Map
Figure 3

gallaway ENTERPRISES
GE# 16-025 Map Date: 04/11/17 Revision: 12/06/17

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

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

Facultative upland plants (FACU) – Plants that occur sometimes (estimated probability1% to 33%) in wetlands, but occur more often (estimated probability 67% to 99%) in non-wetlands.

Obligate upland plants (UPL) – Plants that occur rarely (estimated probability 1%) in wetlands, but occur almost always (estimated probability 99%) in non-wetlands under natural conditions.

Determination of Hydric Soils

Soil survey information was reviewed for the current site condition. Field samples were evaluated using the Munsell soil color chart (2009 Edition), hand texturing, and assessment of soil features (e.g. oxidized root channels, evidence of hardpan, Mn and Fe concretions). Information regarding local soil and series descriptions is provided in **Appendix B.** A few test pits (**Appendix A**) were dug within portions of the site that appeared to have wetland aerial signatures, or evidence of drainage-like topography, but did not meet the wetland test parameters upon investigation in the field.

Determination of Wetland Hydrology

Wetland hydrology was determined to be present if a site supported one or more of the following characteristics:

- Landscape position and surface topography (e.g. position of the site relative to an up-slope water source, location within a distinct wetland drainage pattern, and concave surface topography),
- Inundation or saturation for a long duration either inferred based on field indicators or observed during repeated site visits, and
- Residual evidence of ponding or flooding resulting in field indicators such as scour marks, sediment deposits, algal matting, surface soil cracks and drift lines.

The presence of water or saturated soil for approximately fourteen days or 12% of the growing season typically creates anaerobic conditions in the soil, and these conditions affect the types of plants that can grow and the types of soils that develop (Wetland Training Institute 1995).

Determination of Ordinary High Water Mark

Gallaway utilized methods consistent with the Arid West Manual and *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States, (2008)* to determine the OHWM. The lateral extents of non-tidal water bodies (e.g. intermittent and ephemeral streams) were based on the OHWM, which is "the line on the shore established by the fluctuations of water" (Corps 2005). The OHWM was determined based on multiple observed physical characteristics of the area, which can include scour, multiple observed flow events (from current and historical aerial photos), shelving, and changes in the character of soil, presence of mature vegetation, deposition, and topography. Due to the wide extent of some floodplains, adjacent riparian scrub areas characterized by hydric soils, hydrophytic vegetation, and hydrology may be included within the OHWM of a non-tidal water body (Curtis, et. al. 2011). Inclusion of minor special aquatic areas is an acceptable practice as outlined in the Arid West Manual.

OHWM Transects:

Representative OHWM widths measured in the field are shown as transect lines and measured in feet as required by the Corps *Final Map and Drawing Standards for the South Pacific Division Regulatory Program (2012)*. These transect lines are used to ensure that the other waters of the United States identified within the Project site are mapped and calculated at the appropriate average width for each channel segment based on the Corps definition of OHWM as defined in the Arid West OHWM Field Guide and the *Ordinary High Water Mark Identification RGL 05-05 (2005)* (RGL 05-05). When the average width of a feature changes, this change is shown on the delineation map as a feature transition and a new average channel width is determined. At each transect line Gallaway uses multiple observed physical indicators in determining the OHWM. The lateral extents of the transect lines identify the location of the OHWM where benches, drift, exposed root hairs, changes in substrate/particle size, and, if appropriate, changes in vegetation were observed. If any other physical indicators as described in the Arid West OHWM Field Guide or RGL 05-05 are observed, these indicators are also utilized to help determine the location of the OHWM. Field data for intermittent drainages were entered onto the Arid West OHWM Datasheet (Curtis and Lichvar 2010), which are provided as **Appendix C**.

Jurisdictional Boundary Determination and Acreage Calculation

The wetland-upland boundary was determined based on the presence or inference of positive indicators of all mandatory criteria. Soil samples were taken within wetland and upland areas. The site was traversed on foot to identify wetland features and boundaries. The spatial data obtained during the preparation of this wetland delineation was collected using a Trimble Geo Explorer 6000 Series GPS Receiver. No readings were taken with fewer than 5 satellites. Point data locations were recorded for at least 25 seconds at a rate of 1 position per second. Area and line data were recorded at a rate of 1 position per second while walking at a slow pace. All GPS data were differentially corrected for maximum accuracy. In some cases, when visual errors and degrees of precision are identified due to environmental factors negatively influencing the precision of the GPS instrument (i.e. dense tree cover, steep topography, and other factors affecting satellite connection) mapping procedures utilized available topographic and aerial imagery datasets in order to improve accuracy in feature alignment and location.

Non-Jurisdictional Boundary Determination and Acreage Calculation

Areas were determined to be potentially non-jurisdictional if they did not meet the wetland test parameters or were consistent with the description of non-jurisdictional features as presented in the Corps *Jurisdictional Determination Form Instructional Guidebook* (2007). No potentially non-jurisdictional features were identified within the Project site. There were a number of areas that exhibited potential wetland signatures, however, based on data collected at these locations (**Appendix A**), the areas lacked the necessary wetland parameters and were not mapped as features.

Results

Table 1 Summarizes the area calculations for the pre-jurisdictional features within the Project site. A complete Draft Delineation of WOTUS map, utilizing a 1” to 200’ scale, is included as **Exhibit A**.

Table 1. Results from the Delineation of Waters of the United States for the Ord Ferry Road at Little Chico Creek Bridge Project, Butte County, CA.

Draft Delineation of Waters of the U.S.						
Other Waters of the U.S.						
Label	**Type**	**Designation**	**Width (ft)**	**Length (ft)**	**Area (sq ft)**	**Acres**
OW01	Other Waters	RPW-Intermittent	33.0	58.9	1942.6	0.04
OW1A	Other Waters	RPW-Intermittent	NA	NA	187.0	0.00
OW02	Other Waters	RPW-Perennial	39.8	118.0	4701.2	0.11
OW03	Other Waters	RPW-Intermittent	17.0	344.6	5857.4	0.13
OW04	Other Waters	RPW-Intermittent	60.0	280.9	16856.8	0.39
OW05	Other Waters	NRPW-Ephemeral	3.0	538.9	1616.7	0.04
Other Waters Totals =					**31,161.6**	**0.72**
Wetland Features						
Label	**Type**	**Designation**	**Width (ft)**	**Length (ft)**	**Area (sq ft)**	**Acres**
WF01	Seasonal Wetland	Adjacent	NA	NA	1734.1	0.04
WF02	Seasonal Wetland	Adjacent	NA	NA	2796.1	0.06
WF03	Riparian Wetland	Abutting	NA	NA	54083.4	1.24
WF04	Riparian Wetland	Abutting	NA	NA	6365.9	0.15
WF05	Riparian Wetland	Abutting	NA	NA	18907.3	0.43
WF06	Riparian Wetland	Abutting	NA	NA	46965.0	1.08
WF07	Riparian Wetland	Abutting	NA	NA	4853.8	0.11
WF08	Riparian Wetland	Abutting	NA	NA	22238.7	0.51
WF09	Riparian Wetland	Adjacent	NA	NA	12136.3	0.28
WF10	Seasonal Wetland	Adjacent	NA	NA	6546.8	0.15
Wetland Features Totals =					**176,627.4**	**4.05**
Total Waters of the U.S. =					**207,789.0**	**4.77**

Waters of the United States: Other Waters

There are a total of 5 features that are identified as other waters of the United States within the Project site. Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, ephemeral and intermittent drainages, ponds, and other surface water features that exhibit an ordinary high-water mark, but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). The boundaries of all other waters identified within the survey area were delineated based on the observed OHWM, including physical characteristics such as natural lines impressed on the bank, shelving, changes in the character of the soil, the destruction of terrestrial vegetation, debris lines and other appropriate indicators.

Of the other water features present within the Project site, 4 have been identified as Relatively Permanent Waters (RPW). Relatively Permanent Waters are defined as tributaries that typically flow for at least 3 months of the year and have a documented hydrologic connection to a Traditionally Navigable Water (TNW). These RPWs include 3 intermittent drainages, Little Chico Creek (OW 04) and two unnamed tributaries of Little Chico Creek (OW 01/OW 1A and OW 03), and a perennial, unnamed irrigation canal (OW 02). Little Chico Creek is a tributary of Angel Slough. Flowing water was observed in all of the RPWs during the December field visit.

The one remaining other water feature, OW 05, has been identified as an ephemeral, Non-relatively Permanent Water (NRPW). Non-relatively Permanent Waters are defined as tributaries that flow for less than 3 months and have a documented hydrologic connection to a RPW or TNW. This NRPW is a drainage ditch associated with draining the adjacent agricultural fields. All of the other water features identified within the Project site contain appropriate morphology of bed, bank and scour.

Waters of the United States: Wetlands

The wetlands identified on the site are characterized as seasonal wetlands and riparian wetlands (**Exhibit A**). Seasonal wetlands are depressional features that pond water during the winter and spring months due to water perching above a hardpan or the presence of a high water table and dry during the summer months. Riparian wetlands are wetlands associated with the banks and flood zones of creeks and drainages. In addition, the riparian wetlands in the Project site receive irrigation return flows when the surrounding rice fields are drained prior to harvest.

All of the wetlands identified on the Project site exhibited all three of the wetland parameters (**Appendix A**). A total of 3 seasonal wetlands and 7 riparian wetlands were identified within the Project site.

During the aerial photography review of the Project site conducted prior to the field visit, a few areas were identified that exhibited potential wetland signatures. Where aerial photographs identified potential wetlands, but were found to lack wetland parameters when ground-truthed, test pits were taken (**Exhibit A** and **Appendix A**). Photo points were taken at test pit locations and at other locations across the site to depict the site conditions (**Figure 3**).

Soils

Gallaway collected soil data at various locations throughout the Project site. Field observations of soil characteristics included soil color, texture, structure, and the visual assessment of soil features (e.g. the presence, or absence of redoximorphic features and the depth of restrictive layers such as hardpans). Field observations of soil characteristics at the test pit sites are included in the data sheet forms presented in **Appendix A**. Gallaway's soil texture evaluations rendered predominately loams and clays. The geographic region in which the Project site is found is often characterized as having a high water table.

Gallaway queried the National Cooperative Soil Survey database to further evaluate the current soil conditions. A copy of the soil survey map and a description of mapped soil units for the Project are included as **Appendix B**. Six (6) soil map units occur within the Project site. The 6 identified map units are listed below in **Table 2**. Based on Gallaway's review, 4 of the 6 soil map units identified within the Project site contain significant (75 to 98%) hydric components and the remaining 2 soil map units contain minor amounts (4 to 7%) of hydric components. Within these soils, the hydric components are typically found in floodplains, basin floors, terraces, and channels. A copy of the soil survey map and a description of mapped soil units for the Project site are included as **Appendix B**.

Table 2. Soil Map Units, NRCS hydric soil designation, and approximate totals for the Ord Ferry Road at Little Chico Creek Bridge Project, Butte County, CA.

Map Unit Symbol	Map Unit Name	% Hydric Component in Map Unit	Landform of Hydric Component	% Map Unit in Survey Area
177	Farwell silt loam, 0 to 1 percent slopes, occasionally flooded	7	Floodplains	34.1%
179	Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes	75	Channels/ Terraces	15.8%
180	Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded	95	Basin floors/ Floodplains	2.6%
181	Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded	90	Basin floors	41.1%
200	Parrott silt loam, 0 to 2 percent slopes, occasionally flooded	4	Floodplains	6.3%
520	Esquon-Neerdobe, 0 to 1 percent slopes	98	Basin floors/ Terraces	0.1%

Vegetation

During the December site visit, identifiable vegetation within the seasonal wetlands present included mugwort (*Artemisia douglasiana*) (FAC), hard-stem bull rush (*Schoenoplectus acutus*) (OBL), Himalayan blackberry (*Rubus armeniacus*) (FAC), dalisgrass (*Paspalum dilatatum*) (FAC), and curly dock (*Rumex crispus*) (FAC). Within the riparian wetlands, vegetation present included Himalayan blackberry, arroyo willow (*Salix lasiolepis*) (FACW), Santa Barbara sedge (*Carex barbarae*) (FAC), and valley oak (*Quercus lobata*) (FACU). In the upland portions of the site, vegetation was composed primarily of valley oak, poison oak (*Toxicodendron diversilobum*) (UPL), Himalayan blackberry, Spanish lotus (*Acmispon americanus*) (NL), soft chess (*Bromus hordeaceous*) (FACU), medusahead (*Elymus caput-medusae*) (UPL), bedstraw (*Galium aparine*) (FACU), and Santa Barbara sedge.

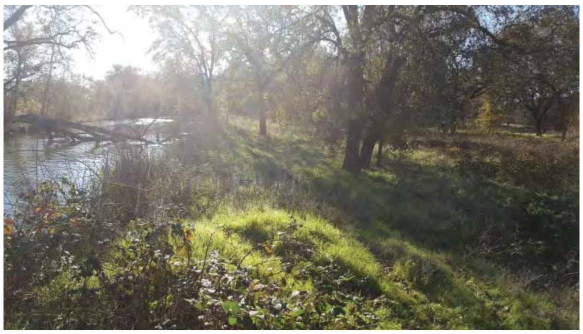
Hydrology

Precipitation and surface runoff from the vicinity of the Project site, as well as agricultural return flows from adjacent rice operations function as the main hydrological inputs for the WOTUS located within the Project site. Further, a high groundwater table contributes to the wetland functions on the site. The seasonal and riparian wetlands present on the Project site are all connected via subsurface flows and surface sheet flows to Little Chico Creek (OW 04). The two small sloughs (OW 01/1A and OW 03) present in the site are both unnamed tributaries of Little Chico Creek. Little Chico Creek is a tributary of Angel Slough, which is a tributary of Butte Creek, which in turn is a tributary of the Sacramento River (a TNW). The one canal (OW 02) present within the Project site continues offsite to the south and is diverted for irrigation purposes into multiple irrigation canals, one of which is a tributary of Angel Slough. The remaining other waters present on the site, OW 05, is a man-made drainage ditch that helps drain the adjacent agricultural fields and flows via a culvert into the riparian wetland, WF 08.

During the December field visit, water was present observed flowing in all but one of the drainages, OW 03. Within OW 03, water was only observed ponding. During the April visit, water was observed ponding in OW 05.

Site Photos Taken on December 1, 2016

P 01 – TP 01 looking slightly southwest



P 02 – OW 02 looking south

P 02 – WF 09 looking west

P 03 – WF 09/W09 looking east

P 04 – WF 09 looking east

P 05 – WF 01 looking east

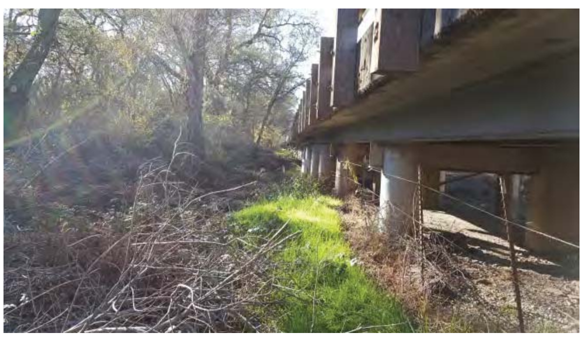
P 06 – TP 02 looking north

P 07 – TP 03 looking southwest

P 10 – OW 03 looking north

P 08 – WF 02 looking north

P 11 – OW 04 looking west



P 09 – WF 05 looking west

P 12 – WF 04 looking west

P 09 – WF 05 looking east

P 13 – OW 04/WF 07 looking south

P 13 – OW 04/WF 07 looking north

P 15 – OW 05 looking west

P 13 – WF 07 looking west

P 16 – OW 01 looking south

P 14 – TP 04 looking west

P 14 – TP 04 looking east

Photos Taken on October 4, 2017:

P 17 – TP 06 looking southwest

P 18 – WF 10 looking south

Glossary

Abutting: When referring to wetlands that are adjacent to a tributary, abutting defines those wetlands that are not separated from the tributary by an upland feature, such as a berm or dike.

Adjacent: Adjacent as used in "Adjacent to traditional navigable water," is defined in Corps and EPA regulations as "bordering, contiguous, or neighboring." Wetlands separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes and the like are 'adjacent wetlands. A wetland "abuts" a tributary if it is not separated from the tributary by uplands, a berm, dike, or similar feature.

While all wetlands that meet the agencies' definitions are considered adjacent wetlands, only those adjacent wetlands that have a continuous surface connection because they directly abut the tributary (e.g., they are not separated by uplands, a berm, dike, or similar feature) are considered jurisdictional under the plurality standard. (CWA Jurisdiction Following Rapanos v US and Carabell v US 12-02-08).

The regulations define "adjacent" as follows: "[t]he term adjacent means bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by man-made dikes or barriers, natural river berms, beach dunes and the like are 'adjacent wetlands.'" Under this definition, a wetland does not need to meet all criteria to be considered adjacent. The agencies consider wetlands to be bordering, contiguous, or neighboring, and therefore "adjacent" if at least one of following three criteria is satisfied:

(1) There is an unbroken surface or shallow sub-surface hydrologic connection between the wetland and jurisdictional waters; or

(2) The wetlands are physically separated from jurisdictional waters by "manmade dikes or barriers, natural river berms, beach dunes, and the like;" or,

(3) Where a wetland's physical proximity to a jurisdictional water is reasonably close, that wetland is "neighboring" and thus adjacent. For example, wetlands located within the riparian area or floodplain of a jurisdictional water will generally be considered neighboring, and thus adjacent. One test for whether a wetland is sufficiently proximate to be considered "neighboring" is whether there is a demonstrable ecological interconnection between the wetland and the jurisdictional waterbody. For example, if resident aquatic species (e.g., amphibians, reptiles, fish, mammals, or waterfowl) rely on both the wetland and the jurisdictional waterbody for all or part of their life cycles (e.g., nesting, rearing, feeding, etc.), that may demonstrate that the wetland is neighboring and thus adjacent. The agencies recognize that as the distance between the wetland and jurisdictional water increases, the potential ecological interconnection between the waters is likely to decrease.

The agencies will also continue to assert jurisdiction over wetlands "adjacent" to traditional navigable waters as defined in the agencies' regulations. Under EPA and Corps regulations and as used in this guidance, "adjacent" means "bordering, contiguous, or neighboring." Finding a continuous surface connection is not required to establish adjacency under this definition. The Rapanos decision does not affect the scope of jurisdiction over wetlands that are adjacent to traditional navigable waters. The agencies will assert jurisdiction over those adjacent wetlands that have a continuous surface connection with a relatively permanent, non-navigable tributary, without the legal obligation to make a significant nexus finding.

Atypical situation (significantly disturbed): In an atypical (significantly disturbed) situation, recent human activities or natural events have created conditions where positive indicators for hydrophytic vegetation, hydric soil, or wetland hydrology are not present or observable.

Boulder. Rock fragments larger than 60 .4 cm (24 inches) in diameter.

Channel. "An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water" (Langbein and Iseri 1960:5).

Channel bank. The sloping land bordering a channel. The bank has steeper slope than the bottom of the channel and is usually steeper than the land surrounding the channel.

Cobbles. Rock fragments 7.6 cm (3 inches) to 25 .4 cm (10 inches) in diameter.

Debris flow. A moving mass of rock fragments, soil, and mud where more than 50% of the particles are larger than sand-sized.

Divide. High ground that forms the boundary of a watershed.

Drift. Organic debris oriented to flow direction(s) (larger than small twigs).

Effective discharge. Discharge that is capable of carrying a large proportion of sediment over time.

Emergent hydrophytes. Erect, rooted, herbaceous angiosperms that may be temporarily to permanently flooded at the base but do not tolerate prolonged inundation of the entire plant; e.g., bulrushes (*Scirpus spp*.), salt marsh cord grass.

Emergent mosses. Mosses occurring in wetlands, but generally not covered by water.

Ephemeral stream. An ephemeral stream has flowing water only during and for a short duration after, precipitation events in a typical year. Ephemeral streambeds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Facultative wetland (FACW). Wetland indicator category; species usually occurs in wetlands (estimated probability 67–99%) but occasionally found in non-wetlands.

Flat. A level landform composed of unconsolidated sediments usually mud or sand. Flats may be irregularly shaped or elongate and continuous with the shore, whereas bars are generally elongate, parallel to the shore, and separated from the shore by water.

Floating plant. A non-anchored plant that floats freely in the water or on the surface; e.g., water hyacinth (*Eichhornia crassipes*) or common duckweed (*Lemna minor*).

Floating-leaved plant. A rooted, herbaceous hydrophyte with some leaves floating on the water surface; e.g., white water lily (*Nymphaea odorata*), floating-leaved pondweed (*Potamogeton natans*). Plants such as yellow water lily (*Nuphar luteum*) which sometimes has leaves raised above the surface are considered floating leaved plants or emergents, depending on their growth habit at a particular site.

Freshwater Emergent Wetland. Fresh emergent wetlands are characterized by erect, rooted herbaceous hydrophytes and are flooded frequently enough that the roots of the plants flourish in an anaerobic environment. They are most common on gently rolling topography yet also occur in depressions at the edges of rivers and lakes. Supportive soils tend to contain high amounts of silt and clay with coarser sediments and organic matter intermixed. Characteristic plant species include cattails (Typha sp.) and rushes (Scirpus sp.).

Gravel. A mixture composed primarily of rock fragments 2mm (0 .08 inch) to 7.6 cm (3 inches) in diameter. Usually contains much sand.

Growing season The frost-free period of the year (see U.S. Department of Interior, National Atlas 1970:110-111 for generalized regional delineation).

Herbaceous. With the characteristics of an herb; a plant with no persistent woody stem above ground.

Hydric soil. Soil is hydric that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic (oxygen-depleted) conditions in its upper part (i.e., within the shallow rooting zone of herbaceous plants).

Hydrophyte, **hydrophytic.** Any plant growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Intermittent stream. An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Jurisdictional Wetland. Sites that meet the definition of wetland provided below and that fall under COE regulations pursuant to Section 404 of the CWA are considered jurisdictional wetlands.

Lacustrine. The Lacustrine System includes wetlands and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or a dammed river channel; (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater than 30% areal coverage; and (3) total area exceeds 8 ha (20 acres). Similar wetland and deepwater habitats totaling less than 8 ha are also included in the Lacustrine System if an active wave-formed or bedrock shoreline feature makes up all or part of the boundary, or if the water depth in the deepest part of the basin exceeds 2 m (6.6 feet) at low water. Lacustrine waters may be tidal or nontidal, but ocean-derived salinity is always less than 0.5 parts per thousand.

Litter. Organic debris oriented to flow direction(s) (small twigs and leaves).

Macrophytic algae. Algal plants large enough either as individuals or communities to be readily visible without the aid of optical magnification.

Man-induced wetlands. A man-induced wetland is an area that has developed at least some characteristics of naturally occurring wetlands due to either intentional or incidental human activities.

Mesophyte, mesophytic. Any plant growing where moisture and aeration conditions lie between extremes. (Plants typically found in habitats with average moisture conditions, not usually dry or wet.)

Non-persistent emergents. Emergent hydrophytes whose leaves and stems break down at the end of the growing season so that most above-ground portions of the plants are easily transported by currents, waves, or ice. The breakdown may result from normal decay or the physical force of strong waves or ice. At certain seasons of the year there are no visible traces of the plants above the surface of the water; e.g., wild rice (*Zizania aquatica*), arrow arum (*Peltandra virginica*).

Non-Relatively Permanent Water: A non-relatively permanent water (NRPW) is defined as a tributary that is not a TNW and that typically flows for periods for less than 3 months. NRPWs are jurisdictional when the have a documented significant nexus to TNWs. All NRPWs must also contain appropriate morphology of bed, bank and scour and be clearly connected to a TNW.

Normal circumstances. This term refers to the soil and hydrologic conditions that are normally present, without regard to whether the vegetation has been removed.

Obligate hydrophytes. Species that are found only in wetlands e.g., cattail (*Typha latifolia*) as opposed to ubiquitous species that grow either in wetland or on upland-e .g., red maple (*Acer rubrum*).

Obligate wetland (OBL). Wetland indicator category; species occurs almost always (estimated probability 99%) under natural conditions in wetlands.

Other Waters of the United States. Other waters of the United States are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4).

Palustrine the Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean derived salts is below 0.5 parts per thousand. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m (6.6 feet) at low water; and (4) salinity due to ocean-derived salts is less than 0.5 parts per thousand.

Perennial stream. A perennial stream has flowing water year-round during atypical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Persistent emergent. Emergent hydrophytes that normally remain standing at least until the beginning of the next growing season; e.g. ., cattails (*Typha spp*.) or bulrushes (*Scirpus spp.*).

Pioneer species. A species that colonizes a previously uncolonized area.

Ponded. Ponding is a condition in which free water covers the soil surface (e.g., in a closed depression) and is removed only by percolation, evaporation, or transpiration.

Problem area. Problem areas are those where one or more wetland parameters may be lacking because of normal seasonal or annual variations in environmental conditions that result from causes other than human activities or catastrophic natural events**.**

Relatively Permanent Waters of the U.S. Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months)

Ruderals. Disturbance-adapted herbaceous plant.

Scour. Soil and debris movement.

Sheetflood. Sheet of unconfined floodwater moving down a slope; a relatively low-frequency, high-magnitude event.

Sheetflow. Overland flow occurring in a continuous sheet; a relatively high-frequency, low-magnitude event.

Shrub. A woody plant which at maturity is usually less than 6 m(20 feet) tall and generally exhibits several erect, spreading, or prostrate stems and has a bushy appearance ; e.g., speckled alder (*Alnus rugosa*) or buttonbush (*Cephalanthus occidentalis*).

Succession. Changes in the composition or structure of an ecological community.

Stone. Rock fragments larger than 25 .4 cm (10 inches) but less than 60 .4 cm (24 inches).

Submergent plant. Avascular or nonvascular hydrophyte, either rooted or non-rooted, which lies entirely beneath the water surface, except for flowering parts in some species; e.g., wild celery (*Vallisneria americana*) or the stoneworts (*Chara spp*.).

Traditional Navigable Waters (TNWs)."[a]ll waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." These waters are referred to in this guidance as traditional navigable waters. The traditional navigable waters include all of the "navigable waters of the United States," as defined in 33 C.F.R. Part 329 and by numerous decisions of the federal courts, plus all other waters that are navigable-in-fact (for example, the Great Salt Lake, UT, and Lake Minnetonka, MN). Thus, the traditional navigable waters include, but are not limited to, the "navigable waters of the United States" within the meaning of Section 10 of the Rivers and Harbors Act of 1899 (also known as "Section 10 waters").

Tree. A woody plant which at maturity is usually 6 m (20 feet) or more in height and generally has a single trunk, unbranched for 1 m or more above the ground, and a more or less definite crown; e.g., red maple (*Acer rubrum*), northern white cedar (*Thuja occidentalis*).

Water table. The upper surface of a zone of saturation . No water table exists where that surface is formed by an impermeable body (Langbein and Iseri 1960:21).

Waters of the United States (WOTUS). This is the encompassing term for areas under federal jurisdiction pursuant to Section 404 of the CWA. Waters of the United States are divided into "wetlands" and "other waters of the United States".

Watershed (drainage basin). An area of land that drains to a single outlet and is separated from other watersheds by a divide.

Wetland. Wetlands are defined as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 [b], 40 CFR 230.3). To be considered under federal jurisdiction, a wetland must support positive indicators for hydrophytic vegetation, hydric soil, and wetland hydrology.

Woody plant. A seed plant (gymnosperm or angiosperm) that develops persistent, hard, fibrous tissues, basically xylem; e.g., trees and shrubs.

Xeric. Relating or adapted to an extremely dry habitat

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Appendix A: Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: TP 01

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.63152 Long: -121.929 Datum: NAD 83

Soil Map Unit Name: Moda taxadjunct-Arbuckle complex, 0 to 2 % slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )
Hydric Soil Present?	Yes ( )	No (●)
Wetland Hydrology Present?	Yes ( )	No (●)

Is the Sampled Area within a Wetland? **Yes** ( ) **No** (●)

Remarks: Area is at the toe of a berm associated with an irrigation canal.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	5	No	FACW
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Paspalum dilatatum*	85	Yes	FAC
2. *Rumex crispus*	5	No	FAC
3. *Cyperus strigosus*	5	No	FACW
4. *Phalaris aquatica*	5	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	10	x 2 =	20
FAC species	90	x 3 =	270
FACU species	5	x 4 =	20
UPL species		x 5 =	0
Column Totals:	105 (A)		310 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks:

SOIL

Sampling Point: TP 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y 3/1	99	7.5YR 5/6	1	C	PL	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains
[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: TP 02

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): slightly concave Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.63124 Long: -121.93000 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Phalaris aquatica*	40	Yes	FACU
2. *Rubus armeniacus*	15	Yes	FAC
3. *Cyperus strigosus*	10	No	FACW
4. *Cynodon dactylon*	10	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	75 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 25 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	50	x 4 =	200
UPL species		x 5 =	0
Column Totals:	75 (A)		265 (B)

Prevalence Index = B/A = 3.53

Hydrophytic Vegetation Indicators:

- ○ Dominance Test is >50%
- ○ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ◉

Remarks: debris in bare ground.

SOIL

Sampling Point: TP 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	99	2.5YR 4/8	1	C	PL	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains
[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ●

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: TP 03

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.63102 Long: -121.93000 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? Yes ○ No ◉

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rosa californica*	30	Yes	FAC
2. *Paspalum dilatatum*	20	Yes	FAC
3. *Rubus armeniacus*	15	Yes	FAC
4. *Juncus sp.*	10	No	FACW
5.			
6.			
7.			
8.			
Total Cover:	75 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 25 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	10	x 2 =	20
FAC species	65	x 3 =	195
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	75 (A)		215 (B)

Prevalence Index = B/A = 2.87

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: debris in bare ground.

SOIL

Sampling Point: TP 03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	99	2.5YR 4/8	1	C	PL	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16
Applicant/Owner: Butte County State: CA Sampling Point: TP 04
Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W
Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): concave Slope (%): 0.2
Subregion (LRR): C - Mediterranean California Lat: 39.63144 Long: -121.93000 Datum: NAD 83
Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? **Yes** ○ **No** ◉

Remarks: Area is a roadside ditch - vegetation managed within ditch.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Brassica nigra*	40	Yes	Not Listed
2. *Silybum marianum*	35	Yes	UPL
3. *Galium aparine*	20	Yes	FACU
4. *Geranium dissectum*	5	No	Not Listed
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ___ % % Cover of Biotic Crust ___ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	20	x 4 =	80
UPL species	80	x 5 =	400
Column Totals:	100 (A)		480 (B)

Prevalence Index = B/A = 4.80

Hydrophytic Vegetation Indicators:

- ○ Dominance Test is >50%
- ○ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

Remarks:

SOIL

Sampling Point: TP 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					clay loam	gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No ordinary high water mark present and the drainage patterns were discontinuous.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 10-4-17

Applicant/Owner: Butte County State: CA Sampling Point: TP 05

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): sloped Slope (%): 0.5

Subregion (LRR): C - Mediterranean California Lat: 39.630919 Long: -121.933788 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	◉	○
Hydric Soil Present?	◉	○
Wetland Hydrology Present?	○	◉

Is the Sampled Area within a Wetland? **Yes** ○ **No** ◉

Remarks: Area is adjacent to a channelized creek.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	100	Yes	FACU
2.			
3.			
4.			
Total Cover:	100%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	55	Yes	FAC
2. *Carex barbarae*	20	Yes	FAC
3. *Galium aparine*	5	No	FACU
4. *Toxicodendron diversilobum*	5	No	Not Listed
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	75	x 3 =	225
FACU species	105	x 4 =	420
UPL species	5	x 5 =	25
Column Totals:	185 (A)		670 (B)

Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

Remarks: Leaf debris in bare ground.

SOIL

Sampling Point: TP 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	98	2.5YR 4/6	2	C	PL	silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:-

Depth (inches):-

Hydric Soil Present? Yes ◉ No ◯

Remarks: Soil pit dug deep enough to determine the presence/absence of hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◯ No ◉ Depth (inches):

Water Table Present? Yes ◯ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◯ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◯ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Other than sediment deposits, no other wetland hydrology indicators were observed. Area was sloped and not conducive to ponding water.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 10-4-17

Applicant/Owner: Butte County State: CA Sampling Point: TP 06

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): sloped Slope (%): 0.8

Subregion (LRR): C - Mediterranean California Lat: 39.63159 Long: -121.928595 Datum: NAD 83

Soil Map Unit Name: Moda taxadjunct-Arbuckle complex, 0 to 2 % slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	(●)	( )
Hydric Soil Present?	(●)	( )
Wetland Hydrology Present?	( )	(●)

Is the Sampled Area within a Wetland? Yes ( ) No (●)

Remarks: Area is at the toe of a cemented irrigation canal.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Paspalum dilatatum*	50	Yes	FAC
2. *Rubus armeniacus*	30	Yes	FAC
3. *Cynodon dactylon*	10	No	FACU
4. *Phalaris aquatica*	10	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 = 0
FACW species		x 2 = 0
FAC species	80	x 3 = 240
FACU species	20	x 4 = 80
UPL species		x 5 = 0
Column Totals:	100 (A)	320 (B)

Prevalence Index = B/A = 3.20

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: TP 06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	98	5YR 5/8	2	C	PL	clay loam	clay content increased the deeper you go

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:-

Depth (inches):-

Hydric Soil Present? Yes ◉ No ○

Remarks: Soil pit dug deep enough to determine the presence/absence of hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Although the soil was moist, there were no wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: W 01

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): concave Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.63125 Long: -121.929 Datum: NAD 83

Soil Map Unit Name: Moda taxadjunct-Arbuckle complex, 0 to 2 % slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? **Yes** ◉ **No** ○

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	50	Yes	FACU
2.			
3.			
4.			
Total Cover:	50 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Artemisia douglasiana*	25	Yes	FAC
2. *Rubus armeniacus*	20	Yes	FAC
3. *Paspalum dilatatum*	20	Yes	FAC
4. *Toxicodendron diversilobum*	10	No	UPL
5. *Vicia villosa*	10	No	Not Listed
6. *Rumex crispus*	5	No	FAC
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	75.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	70	x 3 =	210
FACU species	50	x 4 =	200
UPL species	20	x 5 =	100
Column Totals:	140	(A)	510 (B)

Prevalence Index = B/A = 3.64

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

Remarks: debris in bare ground.

SOIL

Sampling Point: W 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 3/2	80	7.5YR 4/8	20	C	PL	clay loam	organics present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: U 01

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): slightly convex Slope (%): 0.4

Subregion (LRR): C - Mediterranean California Lat: 39.63125 Long: -121.929 Datum: NAD 83

Soil Map Unit Name: Moda taxadjunct-Arbuckle complex, 0 to 2 % slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (●)
Hydric Soil Present?	Yes ( )	No (●)
Wetland Hydrology Present?	Yes ( )	No (●)

Is the Sampled Area within a Wetland? **Yes** ( ) **No** (●)

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Phalaris aquatica*	50	Yes	FACU
2. *Lotus corniculatus*	20	Yes	FAC
3. *Cynodon dactylon*	15	No	FACU
4. *Rubus armeniacus*	10	No	FAC
5. *Paspalum dilatatum*	5	No	FAC
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ___ % % Cover of Biotic Crust ___ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	35	x 3 =	105
FACU species	65	x 4 =	260
UPL species		x 5 =	0
Column Totals:	100 (A)		365 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ( ) **No** (●)

Remarks:

SOIL

Sampling Point: U 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: W 02

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): concave Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.63095 Long: -121.93000 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1% slopes, frequently flooded NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )
Hydric Soil Present?	Yes (●)	No ( )
Wetland Hydrology Present?	Yes (●)	No ( )

Is the Sampled Area within a Wetland? **Yes** (●) **No** ( )

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix gooddingii*	10	No	FACW
2.			
3.			
4.			
Total Cover:	10 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	30	Yes	FAC
2. *Paspalum dilatatum*	25	Yes	FAC
3. *Schoenoplectus acutus*	20	Yes	OBL
4. *Toxicodendron diversilobum*	15	No	UPL
5.			
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	10	x 2 =	20
FAC species	55	x 3 =	165
FACU species		x 4 =	0
UPL species	15	x 5 =	75
Column Totals:	100 (A)		280 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks: debris in bare ground.

SOIL

Sampling Point: W 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	90	5YR 5/8	10	C	PL	clay	organics present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: U 02

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): sloped Slope (%): 3

Subregion (LRR): C - Mediterranean California Lat: 39.63095 Long: -121.93000 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )
Hydric Soil Present?	Yes ( )	No (●)
Wetland Hydrology Present?	Yes ( )	No (●)

Is the Sampled Area within a Wetland? **Yes** ( ) **No** (●)

Remarks: area on the slope of a short terrace.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus latifolia*	10	No	FACW
2.			
3.			
4.			
Total Cover:	10 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	10	x 2 =	20
FAC species	100	x 3 =	300
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	110	(A)	320 (B)

Prevalence Index = B/A = 2.91

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks:

SOIL

Sampling Point: U 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	99	2.5YR 4/8	1	C	PL	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: W 04

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 0.6

Subregion (LRR): C - Mediterranean California Lat: 39.63064 Long: -121.93200 Datum: NAD 83

Soil Map Unit Name: Farwell silt loam, 0 to 1 % slopes, occasionally flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )
Hydric Soil Present?	Yes (●)	No ( )
Wetland Hydrology Present?	Yes (●)	No ( )

Is the Sampled Area within a Wetland? **Yes** (●) **No** ( )

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	80	Yes	FACU
2.			
3.			
4.			
Total Cover:	80 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	40	Yes	FAC
2. *Carex barbarae*	30	Yes	FAC
3. *Toxicodendron diversilobum*	15	No	UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	70	x 3 =	210
FACU species	80	x 4 =	320
UPL species	15	x 5 =	75
Column Totals:	165 (A)		605 (B)

Prevalence Index = B/A = 3.67

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks: debris in bare ground.

SOIL

Sampling Point: W 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					clay loam	organics present
3-20	10YR 3/2	95	2.5YR 4/8	5	C	PL	clay loam	gravel present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: U 04

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): C - Mediterranean California Lat: 39.63059 Long: -121.93200 Datum: NAD 83

Soil Map Unit Name: Farwell silt loam, 0 to 1 % slopes, occasionally flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	●	
Hydric Soil Present?		●
Wetland Hydrology Present?		●

Is the Sampled Area within a Wetland? Yes ( ) No (●)

Remarks: Area on terrace above flood zone.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	90	Yes	FACU
2.			
3.			
4.			
Total Cover:	90 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Carex barbarae*	35	Yes	FAC
2. *Rubus armeniacus*	30	Yes	FAC
3. *Toxicodendron diversilobum*	15	No	UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	65	x 3 =	195
FACU species	90	x 4 =	360
UPL species	15	x 5 =	75
Column Totals:	170 (A)		630 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks:

SOIL

Sampling Point: U 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/3	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: W 05

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 0.5

Subregion (LRR): C - Mediterranean California Lat: 39.63102 Long: -121.93000 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1% slopes, frequently flooded NWI classification: PSS1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )
Hydric Soil Present?	Yes (●)	No ( )
Wetland Hydrology Present?	Yes (●)	No ( )

Is the Sampled Area within a Wetland? **Yes** (●) **No** ( )

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	90	Yes	FACU
2.			
3.			
4.			
Total Cover:	90 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	35	Yes	FAC
2. *Carex barbarae*	20	Yes	FAC
3. *Rosa californica*	5	No	FAC
4. *Toxicodendron diversilobum*	5	No	UPL
5.			
6.			
7.			
8.			
Total Cover:	65 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 35 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	60	x 3 =	180
FACU species	90	x 4 =	360
UPL species	5	x 5 =	25
Column Totals:	155 (A)		565 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks: debris in bare ground.

SOIL

Sampling Point: W 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	100					clay loam	organics present
2-12	10YR 3/2	92	2.5YR 4/8	3	C	PL	clay loam	
			2.5YR 4/6	5	C	PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains   [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [ ] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [x] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [x] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** (●) **No** ( )

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- [ ] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [x] Sediment Deposits (B2) (**Riverine**)
- [x] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ( ) No (●) Depth (inches):

Water Table Present? Yes ( ) No (●) Depth (inches):

Saturation Present? (includes capillary fringe) Yes ( ) No (●) Depth (inches):

Wetland Hydrology Present? **Yes** (●) **No** ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: U 05

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): C - Mediterranean California Lat: 39.63102 Long: -121.93000 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded NWI classification: PSS1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ◉
Hydric Soil Present?	Yes ○	No ◉
Wetland Hydrology Present?	Yes ○	No ◉

Is the Sampled Area within a Wetland? **Yes** ○ **No** ◉

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	60	Yes	FACU
2.			
3.			
4.			
Total Cover:	60 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	35	Yes	FAC
2. *Toxicodendron diversilobum*	30	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	65 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 35 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 = 0
FACW species		x 2 = 0
FAC species	35	x 3 = 105
FACU species	60	x 4 = 240
UPL species	30	x 5 = 150
Column Totals:	125 (A)	495 (B)

Prevalence Index = B/A = 3.96

Hydrophytic Vegetation Indicators:

- ○ Dominance Test is >50%
- ○ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

Remarks:

SOIL

Sampling Point: U 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16
Applicant/Owner: Butte County State: CA Sampling Point: W 07
Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W
Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): slightly sloped Slope (%): 0.8
Subregion (LRR): C - Mediterranean California Lat: 39.63090 Long: -121.93200 Datum: NAD 83
Soil Map Unit Name: Farwell silt loam, 0 to 1 % slopes, occasionally flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? **Yes** ◉ **No** ○

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	10	No	FACU
2.			
3.			
4.			
Total Cover:	10 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Carex barbarae*	30	Yes	FAC
2. *Rumex crispus*	10	Yes	FAC
3. *Toxicodendron diversilobum*	10	Yes	UPL
4.			
5.			
6.			
7.			
8.			
Total Cover:	50 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 50 % % Cover of Biotic Crust %

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	40	x 3 =	120
FACU species	10	x 4 =	40
UPL species	10	x 5 =	50
Column Totals:	60 (A)		210 (B)

Prevalence Index = B/A = 3.50

Hydrophytic Vegetation Indicators:
- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

Remarks: leaf debris in bare ground.

SOIL

Sampling Point: W 07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					clay loam	organics present
3-18	10YR 3/2	95	2.5YR 4/8	5	C	PL	clay loam	gravel present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16
Applicant/Owner: Butte County State: CA Sampling Point: U 07
Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W
Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): slightly sloped Slope (%): 0.6
Subregion (LRR): C - Mediterranean California Lat: 39.63090 Long: -121.93200 Datum: NAD 83
Soil Map Unit Name: Farwell silt loam, 0 to 1 % slopes, occasionally flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (selected) No (If no, explain in Remarks.)
Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (selected) No
Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?		●
Hydric Soil Present?		●
Wetland Hydrology Present?		●

Is the Sampled Area within a Wetland? Yes ○ No ●

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	20	Yes	FACU
2.			
3.			
4.			
Total Cover:	20 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Toxicodendron diversilobum*	30	Yes	UPL
2. *Carex barbarae*	15	Yes	FAC
3. *Galium aparine*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	55 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 45 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	15	x 3 =	45
FACU species	30	x 4 =	120
UPL species	30	x 5 =	150
Column Totals:	75 (A)		315 (B)

Prevalence Index = B/A = 4.20

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: leaf debris in bare ground

SOIL

Sampling Point: U 07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					clay loam	
3-12	10YR 3/2	99	2.5YR 4/8	1	C	PL	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: W 08

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 0.5

Subregion (LRR): C - Mediterranean California Lat: Long: Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1% slopes, frequently flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )
Hydric Soil Present?	Yes (●)	No ( )
Wetland Hydrology Present?	Yes (●)	No ( )

Is the Sampled Area within a Wetland? **Yes** (●) **No** ( )

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus lobata*	90	Yes	FACU
2.			
3.			
4.			
Total Cover:	90 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	40	Yes	FAC
2. *Carex barbarae*	25	Yes	FAC
3. *Rosa californica*	10	No	FAC
4. *Toxicodendron diversilobum*	5	No	UPL
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	75	x 3 =	225
FACU species	90	x 4 =	360
UPL species	5	x 5 =	25
Column Totals:	170 (A)		610 (B)

Prevalence Index = B/A = 3.59

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** (●) **No** ( )

Remarks: debris in bare ground.

SOIL

Sampling Point: W 08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/2	100					clay loam	organics present
1-12	10YR 3/2	92	2.5YR 4/8	3	C	PL	clay loam	
			2.5YR 4/6	5	C	PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ **No** ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☒ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

	Yes	No	Depth (inches)
Surface Water Present?	○	◉	
Water Table Present?	○	◉	
Saturation Present? (includes capillary fringe)	○	◉	

Wetland Hydrology Present? Yes ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge | City/County: Butte County | Sampling Date: 12-1-16

Applicant/Owner: Butte County | State: CA | Sampling Point: U 08

Investigator(s): E. Gregg and M. Murphy | Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace | Local relief (concave, convex, none): none | Slope (%): 0.5

Subregion (LRR): C - Mediterranean California | Lat: | Long: | Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 1 % slopes, frequently flooded | NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	( )	(●)
Hydric Soil Present?	( )	(●)
Wetland Hydrology Present?	( )	(●)

Is the Sampled Area within a Wetland? **Yes** ( ) **No** (●)

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Salix exigua*	10	No	FACW
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Rubus armeniacus*	40	Yes	FAC
2. *Toxicodendron diversilobum*	30	Yes	Not Listed
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	70 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 30 % | % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	10	x 2 =	20
FAC species	40	x 3 =	120
FACU species		x 4 =	0
UPL species	30	x 5 =	150
Column Totals:	80 (A)		290 (B)

Prevalence Index = B/A = 3.63

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ( ) **No** (●)

Remarks: Area is occasionally managed for vegetation.

SOIL

Sampling Point: U 08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:-

Depth (inches):-

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks: Soil pit was dug deep enough to determine the presence/absence of hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? Yes ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: W 09

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): slightly concave Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.63137 Long: -121.929 Datum: NAD 83

Soil Map Unit Name: Moda taxadjunct-Arbuckle complex, 0 to 2 % slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? Yes ◉ No ○

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix lasiolepis*	5	No	FACW
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Rubus armeniacus*	100	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	5	x 2 =	10
FAC species	100	x 3 =	300
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	105 (A)		310 (B)

Prevalence Index = B/A = 2.95

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks:

SOIL

Sampling Point: W 09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	2.5Y 3/2	80	7.5YR 4/8	20	C	PL	clay loam	organics present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☒ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☒ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 12-1-16

Applicant/Owner: Butte County State: CA Sampling Point: U 09

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): convex Slope (%): 0.4

Subregion (LRR): C - Mediterranean California Lat: 39.63136 Long: -121.929 Datum: NAD 83

Soil Map Unit Name: Moda taxadjunct-Arbuckle complex, 0 to 2 % slopes NWI classification: PEM1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (X) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (X) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ( )	No (X)
Hydric Soil Present?	Yes ( )	No (X)
Wetland Hydrology Present?	Yes ( )	No (X)

Is the Sampled Area within a Wetland? Yes ( ) No (X)

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Phalaris aquatica*	50	Yes	FACU
2. *Cynodon dactylon*	30	Yes	FACU
3. *Lotus corniculatus*	20	Yes	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	100 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ___ % % Cover of Biotic Crust ___ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 = 0
FACW species		x 2 = 0
FAC species	20	x 3 = 60
FACU species	80	x 4 = 320
UPL species		x 5 = 0
Column Totals:	100 (A)	380 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

- ☐ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ( ) No (X)

Remarks:

SOIL

Sampling Point: U 09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 10-4-17

Applicant/Owner: Butte County State: CA Sampling Point: W 10

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): concave Slope (%): 0.2

Subregion (LRR): C - Mediterranean California Lat: 39.631746 Long: -121.928024 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 5% slopes, occasionally flooded NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ○ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ○

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ○
Hydric Soil Present?	Yes ◉	No ○
Wetland Hydrology Present?	Yes ◉	No ○

Is the Sampled Area within a Wetland? **Yes** ◉ **No** ○

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Typha latifolia*	65	Yes	OBL
2. *Ludwigia peploides*	20	Yes	OBL
3. *Schoenoplectus acutus*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	90	x 1 =	90
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	90 (A)		90 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

Remarks: open water in bare ground.

SOIL

Sampling Point: W 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
								open water present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains

[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☒ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:-

Depth (inches):-

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks: No soil pit taken - hydric soils assumed due to the presence of standing water and dominance of obligate wetland plants.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☒ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches): 3
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? **Yes** ◉ **No** ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Ord Ferry Road at Little Chico Creek Bridge City/County: Butte County Sampling Date: 10-4-17

Applicant/Owner: Butte County State: CA Sampling Point: U 10

Investigator(s): E. Gregg and M. Murphy Section, Township, Range: Section 36, T 21N, R 1W

Landform (hillslope, terrace, etc.): Fan/Fan Terrace Local relief (concave, convex, none): none Slope (%): 0.5

Subregion (LRR): C - Mediterranean California Lat: 39.63175 Long: -121.928024 Datum: NAD 83

Soil Map Unit Name: Dodgeland silty clay loam, 0 to 5 % slopes, occasionally flooded NWI classification: PEM1C

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

	Yes	No
Hydrophytic Vegetation Present?	( )	(●)
Hydric Soil Present?	( )	(●)
Wetland Hydrology Present?	( )	(●)

Is the Sampled Area within a Wetland? **Yes** ( ) **No** (●)

Remarks: area is located along the road shoulder.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Sorghum halepense*	40	Yes	FACU
2. *Rubus armeniacus*	20	Yes	FAC
3. *Phalaris aquatica*	10	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	70 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 30 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	20	x 3 =	60
FACU species	50	x 4 =	200
UPL species		x 5 =	0
Column Totals:	70 (A)		260 (B)

Prevalence Index = B/A = 3.71

Hydrophytic Vegetation Indicators:

- Dominance Test is >50%
- Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? **Yes** ( ) **No** (●)

Remarks: gravel and debris in bare ground.

SOIL

Sampling Point: U 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	99	2.5YR 4/8	1	C	PL	clay loam	gravel present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. CS=Covered or Coated Sand Grains
[2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils: [3]

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present. unless distributed or problematic

Restrictive Layer (if present):

Type:-

Depth (inches):-

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks: Soil pit dug deep enough to determine presence/absence of hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches):

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches):

Wetland Hydrology Present? **Yes** ○ **No** ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators present.

Appendix B: NRCS Soils Map and Soil Series Description

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for
Butte Area, California, Parts of Butte and Plumas Counties

Ord Ferry Road

October 30, 2017

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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Contents

Preface...2
How Soil Surveys Are Made...5
Soil Map...8
Soil Map...9
Legend...10
Map Unit Legend...12
Map Unit Descriptions...12
Butte Area, California, Parts of Butte and Plumas Counties...14
177—Farwell silt loam, 0 to 1 percent slopes, occasionally flooded...14
179—Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes...15
180—Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded...17
181—Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded...19
200—Parrott silt loam, 0 to 2 percent slopes, occasionally flooded...21
520—Esquon-Neerdobe , 0 to 1 percent slopes...22
References...25

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map

Map Scale: 1:4,320 if printed on A landscape (11" x 8.5") sheet.

N

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Butte Area, California, Parts of Butte and Plumas Counties
Survey Area Data: Version 13, Sep 12, 2016

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

Date(s) aerial images were photographed: Feb 21, 2015—Oct 18, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background

MAP LEGEND

MAP INFORMATION

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
177	Farwell silt loam, 0 to 1 percent slopes, occasionally flooded	4.9	34.1%
179	Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes	2.3	15.8%
180	Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded	0.4	2.7%
181	Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded	6.0	41.1%
200	Parrott silt loam, 0 to 2 percent slopes, occasionally flooded	0.9	6.3%
520	Esquon-Neerdobe , 0 to 1 percent slopes	0.0	0.0%
Totals for Area of Interest		**14.5**	**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.

Butte Area, California, Parts of Butte and Plumas Counties

177—Farwell silt loam, 0 to 1 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: hgvz
Elevation: 100 to 120 feet
Mean annual precipitation: 18 to 21 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 240 to 245 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Farwell, Silt Loam, Occasionally Flooded

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 6 inches: silt loam
ABt - 6 to 11 inches: silty clay loam
Btb1 - 11 to 22 inches: silt loam
Btb2 - 22 to 33 inches: silty clay loam
Btb3 - 33 to 39 inches: silty clay loam
Btb4 - 39 to 49 inches: silt loam
Btb5 - 49 to 62 inches: silty clay loam, loam
Btb5 - 49 to 62 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: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.83 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very high (about 13.6 inches)

Interpretive groups

Land capability classification (irrigated): 2s

Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Parrott, silt loam
Percent of map unit: 4 percent
Landform: Flood plains
Hydric soil rating: No

Dodgeland, silty clay loam
Percent of map unit: 4 percent
Landform: Flood plains
Hydric soil rating: Yes

Vermet, silt loam
Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Codora, silty clay loam
Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: No

Unnamed, gravel and coarse sand
Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: Yes

Unnamed, sandy substratum
Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: No

179—Moda taxadjunct-Arbuckle complex, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hgxm
Elevation: 100 to 120 feet
Mean annual precipitation: 19 to 21 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 240 to 245 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Moda taxadjunct, loam, and similar soils: 65 percent
Arbuckle, gravelly loam, and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Moda Taxadjunct, Loam

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Microfeatures of landform position: Swales
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium over clayey alluvium over cemented loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A1 - 0 to 2 inches: loam
A2 - 2 to 6 inches: loam
Bt1 - 6 to 13 inches: loam
2Bt2 - 13 to 22 inches: clay
2Bkqm - 22 to 32 inches: cemented material

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: About 13 inches to abrupt textural change; 20 to 40 inches to duripan
Natural drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 to 40 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 3 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Description of Arbuckle, Gravelly Loam

Setting

Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Microfeatures of landform position: Mounds
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-loamy alluvium over gravelly alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A1 - 0 to 4 inches: gravelly loam
A2 - 4 to 9 inches: gravelly loam
Bt1 - 9 to 20 inches: gravelly loam

Bt2 - 20 to 32 inches: gravelly loam, loam
Bt2 - 20 to 32 inches: gravelly loam
Bt3 - 32 to 49 inches: very gravelly sandy clay loam
2Bt4 - 49 to 68 inches: very gravelly sandy clay loam
2Bt5 - 68 to 86 inches:

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.28 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 5.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups
Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Dodgeland, silty clay loam
Percent of map unit: 6 percent
Landform: Channels
Hydric soil rating: Yes

Farwell, silty clay loam
Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: No

Unnamed, frequent long ponding
Percent of map unit: 4 percent
Landform: Terraces
Microfeatures of landform position: Vernal pools
Hydric soil rating: Yes

180—Dodgeland silty clay loam, 0 to 5 percent slopes, occasionally flooded

Map Unit Setting
National map unit symbol: hgzb
Elevation: 100 to 120 feet
Mean annual precipitation: 18 to 20 inches

Mean annual air temperature: 61 degrees F
Frost-free period: 240 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Dodgeland, silty clay loam, occasionally flooded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dodgeland, Silty Clay Loam, Occasionally Flooded

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and clayey alluvium over cemented loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap1 - 0 to 4 inches: silty clay loam
Ap2 - 4 to 8 inches: silty clay
Bss1 - 8 to 18 inches: silty clay
Bss2 - 18 to 33 inches: silty clay
Bss3 - 33 to 45 inches: silty clay
Bkss - 45 to 53 inches: silty clay
2Bw1 - 53 to 60 inches: silty clay loam
2Bw2 - 60 to 70 inches: silty clay loam
2Bw3 - 70 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: 80 to 140 inches to duripan
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.09 to 0.17 in/hr)
Depth to water table: About 0 to 80 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Vermet, silty clay loam

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Parrott, silt loam

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: No

Dodgeland, silt loam or sandy clay loam overwash

Percent of map unit: 3 percent
Landform: Basin floors
Hydric soil rating: Yes

Edjobe, silty clay

Percent of map unit: 2 percent
Landform: Basin floors
Hydric soil rating: Yes

Farwell, silt loam

Percent of map unit: 2 percent
Landform: Basin floors
Hydric soil rating: No

181—Dodgeland silty clay loam, 0 to 1 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: hgv1
Elevation: 100 to 110 feet
Mean annual precipitation: 18 to 19 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Dodgeland, silty clay loam, frequently flooded, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dodgeland, Silty Clay Loam, Frequently Flooded

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty and clayey alluvium over cemented loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap1 - 0 to 4 inches: silty clay loam
Ap2 - 4 to 8 inches: silty clay
Bss1 - 8 to 18 inches: silty clay

Bss2 - 18 to 33 inches: silty clay
Bss3 - 33 to 45 inches: silty clay
Bkss - 45 to 53 inches: silty clay
2Bw1 - 53 to 60 inches: silty clay loam
2Bw2 - 60 to 70 inches: silty clay loam
2Bw3 - 70 to 80 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 80 to 140 inches to duripan
Natural drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.09 to 0.17 in/hr)
Depth to water table: About 0 to 80 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Farwell, silt loam

Percent of map unit: 5 percent
Landform: Basin floors
Hydric soil rating: No

Parrott

Percent of map unit: 5 percent
Landform: Basin floors
Hydric soil rating: No

Vermet

Percent of map unit: 5 percent
Landform: Basin floors
Microfeatures of landform position: Channels
Hydric soil rating: Yes

Edjobe

Percent of map unit: 3 percent
Landform: Basin floors
Hydric soil rating: Yes

Unnamed, scoured by flooding

Percent of map unit: 2 percent
Landform: Basin floors
Hydric soil rating: Yes

200—Parrott silt loam, 0 to 2 percent slopes, occasionally flooded

Map Unit Setting

National map unit symbol: hgw3
Elevation: 100 to 160 feet
Mean annual precipitation: 18 to 22 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 240 to 245 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

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

Description of Parrott, Silt Loam, Occasionally Flooded

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Silty alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A1 - 0 to 2 inches: silt loam
A2 - 2 to 8 inches: silt loam
Bw1 - 8 to 20 inches: silt loam
Bw2 - 20 to 37 inches: silt loam
Bw3 - 37 to 49 inches: silt loam
Bw4 - 49 to 63 inches: silt loam
C - 63 to 89 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.43 to 1.98 in/hr)
Depth to water table: About 60 to 89 inches
Frequency of flooding: Occasional
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0

Available water storage in profile: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Gianella, fine sandy loam or loam

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: No

Kusalslough, silty clay loam

Percent of map unit: 4 percent
Landform: Flood plains
Hydric soil rating: No

Vermet, silt loam

Percent of map unit: 3 percent
Landform: Flood plains
Hydric soil rating: Yes

Conejo, clay loam

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: No

Unnamed, stratified textures

Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: Yes

520—Esquon-Neerdobe , 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: hgx4
Elevation: 60 to 170 feet
Mean annual precipitation: 18 to 25 inches
Mean annual air temperature: 59 to 63 degrees F
Frost-free period: 240 to 250 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Esquon, clay, and similar soils: 60 percent
Neerdobe, clay, and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Esquon, Clay

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium over cemented loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 5 inches: clay
Bssg - 5 to 11 inches: clay
Bss1 - 11 to 22 inches: clay
Bss2 - 22 to 35 inches: clay
Bkss1 - 35 to 46 inches: clay
Bkss2 - 46 to 50 inches: silty clay
Bk - 50 to 56 inches: silty clay
2Bkqm - 56 to 67 inches: cemented material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 40 to 60 inches to duripan
Natural drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 to 60 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 14 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Description of Neerdobe, Clay

Setting

Landform: Basin floors
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium over cemented loamy alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

A - 0 to 5 inches: clay
Bssg1 - 5 to 15 inches: clay
Bssg2 - 15 to 23 inches: clay

Bssg3 - 23 to 28 inches: clay
Bk - 28 to 33 inches: clay
2Bkq - 33 to 38 inches: loam
2Bkqm - 38 to 56 inches: cemented material

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Natural drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 0 to 40 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Calcium carbonate, maximum in profile: 14 percent
Salinity, maximum in profile: Nonsaline (0.0 to 0.5 mmhos/cm)
Available water storage in profile: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): 5w
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Eastbiggs

Percent of map unit: 2 percent
Landform: Terraces
Hydric soil rating: Yes

Unnamed, filled, without duripan

Percent of map unit: 2 percent
Landform: Basin floors
Hydric soil rating: Yes

Esquon, loamy sand to silty clay overwash

Percent of map unit: 2 percent
Landform: Basin floors
Hydric soil rating: Yes

Lofgren, clay

Percent of map unit: 2 percent
Landform: Basin floors
Hydric soil rating: Yes

Urban land

Percent of map unit: 2 percent
Landform: Basin floors

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Appendix C: Arid West Intermittent Streams OHWM Datasheets

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Ord Ferry Bridge Replacement **Project Number:** **Stream:** Unnamed **Investigator(s):** E. Gregg, M. Murphy	**Date:** 12-1-16 **Time:** **Town:** **State:** **Photo begin file#:** **Photo end file#:**
Y ☒ / N ☐ Do normal circumstances exist on the site?	**Location Details:** OW 01
Y ☐ / N ☒ Is the site significantly disturbed?	**Projection:** **Datum:** **Coordinates:**

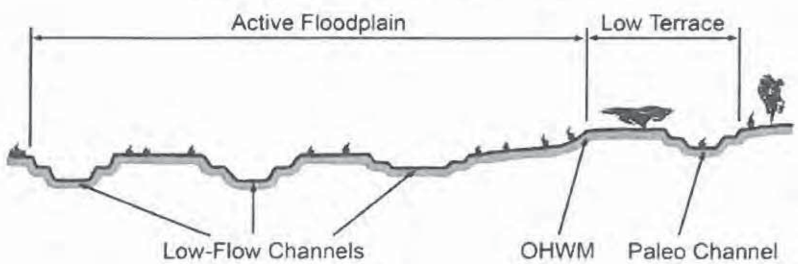
Potential anthropogenic influences on the channel system:
Veg w/in ROW/OHWM transect maintained by County

Brief site description:
Intermittent stream. A small concrete part of Ord Ferry Rd spans the stream.

Checklist of resources (if available):

- ☒ Aerial photography
  Dates:
- ☐ Topographic maps
- ☐ Geologic maps
- ☐ Vegetation maps
- ☒ Soils maps
- ☐ Rainfall/precipitation maps
- ☐ Existing delineation(s) for site
- ☐ Global positioning system (GPS)
- ☐ Other studies
- ☐ Stream gage data
  Gage number:
  Period of record:
  - ☐ History of recent effective discharges
  - ☐ Results of flood frequency analysis
  - ☐ Most recent shift-adjusted rating
  - ☐ Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units

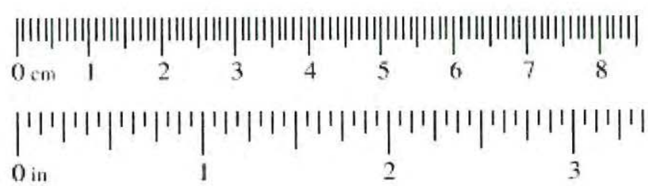


Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
   c) Identify any indicators present at the location.
4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - ☐ Mapping on aerial photograph
   - ☐ Digitized on computer
   - ☒ GPS
   - ☐ Other:

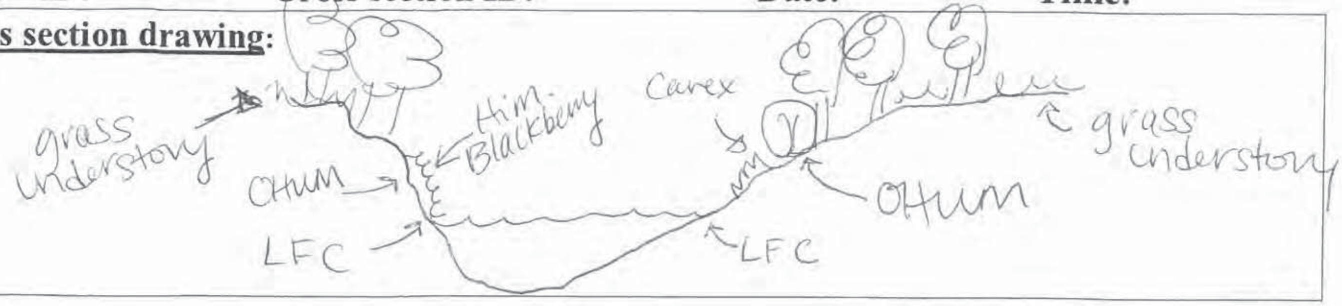
Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
			Boulder	Gravel
	10.08	256		
			Cobble	
	2.56	64		
			Pebble	
	0.157	4		
			Granule	
	0.079	2.00		
			Very coarse sand	Sand
	0.039	1.00		
			Coarse sand	
	0.020	0.50		
			Medium sand	
1/2	0.0098	0.25		
			Fine sand	
1/4	0.005	0.125		
			Very fine sand	
1/8	0.0025	0.0625		
			Coarse silt	Silt
1/16	0.0012	0.031		
			Medium silt	
1/32	0.00061	0.0156		
			Fine silt	
1/64	0.00031	0.0078		
			Very fine silt	
1/128	0.00015	0.0039		
			Clay	Mud



Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:



OHWM

GPS point: B'-B' (see delineation map)

Indicators:

- ☐ Change in average sediment texture
- ☒ Change in vegetation species
- ☒ Change in vegetation cover
- ☒ Break in bank slope
- ☐ Other: ______
- ☐ Other: ______

Comments:

Floodplain unit: ☒ Low-Flow Channel ☐ Active Floodplain ☐ Low Terrace

GPS point: ______

Characteristics of the floodplain unit:

Average sediment texture: Fine Silt

Total veg cover: 0 % Tree: ___% Shrub: ___% Herb: ___%

Community successional stage:

- ☒ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☒ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Flowing water present
- ☐ Other: ______
- ☐ Other: ______

Comments:

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: [ ] Low-Flow Channel [x] Active Floodplain [ ] Low Terrace

GPS point: ______________________

Characteristics of the floodplain unit:

Average sediment texture: Fine Silt - medium Silt

Total veg cover: 80 % Tree: 8 % Shrub: 60 % Herb: 20 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [x] Soil development
- [ ] Surface relief
- [x] Other: Litter Removal
- [x] Other: Shelving
- [ ] Other: ______________

Comments:

Floodplain unit: [ ] Low-Flow Channel [ ] Active Floodplain [x] Low Terrace

GPS point: ______________________

Characteristics of the floodplain unit:

Average sediment texture: Course Silt

Total veg cover: 220 % Tree: 70 % Shrub: 60 % Herb: 90 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [ ] Mid (herbaceous, shrubs, saplings)
- [x] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [ ] Drift and/or debris
- [ ] Presence of bed and bank
- [ ] Benches
- [x] Soil development
- [ ] Surface relief
- [x] Other: Change in Veg Species/Cover
- [ ] Other: ______________
- [ ] Other: ______________

Comments:

Arid West Ephemeral and Intermittent Streams OHWM Datasheet

Project: Ord Ferry Bridge **Project Number:** **Stream:** Little Chico Creek **Investigator(s):** E Gregg, M Murphy	**Date:** 12-1-16 **Town:** **Photo begin file#:**	**Time:** 2:37 **State:** CA **Photo end file#:**
Y [x] / N [ ] Do normal circumstances exist on the site?	**Location Details:** OW 04	
Y [ ] / N [x] Is the site significantly disturbed?	**Projection:** **Coordinates:**	**Datum:**

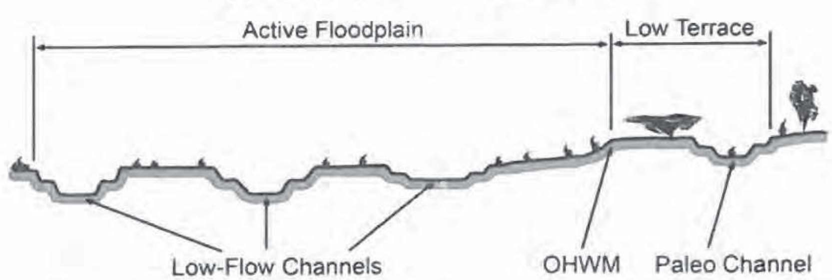
Potential anthropogenic influences on the channel system:
Vegetation within ROW/OHWM transect location has been maintained by county.

Brief site description:
Ord Ferry Road bridge crosses creek. Intermittent Stream.

Checklist of resources (if available):

- [x] Aerial photography
  Dates:
- [ ] Topographic maps
- [ ] Geologic maps
- [ ] Vegetation maps
- [x] Soils maps
- [ ] Rainfall/precipitation maps
- [ ] Existing delineation(s) for site
- [ ] Global positioning system (GPS)
- [ ] Other studies
- [ ] Stream gage data
  Gage number:
  Period of record:
  - [ ] History of recent effective discharges
  - [ ] Results of flood frequency analysis
  - [ ] Most recent shift-adjusted rating
  - [ ] Gage heights for 2-, 5-, 10-, and 25-year events and the most recent event exceeding a 5-year event

Hydrogeomorphic Floodplain Units



Procedure for identifying and characterizing the floodplain units to assist in identifying the OHWM:

1. Walk the channel and floodplain within the study area to get an impression of the geomorphology and vegetation present at the site.
2. Select a representative cross section across the channel. Draw the cross section and label the floodplain units.
3. Determine a point on the cross section that is characteristic of one of the hydrogeomorphic floodplain units.
   a) Record the floodplain unit and GPS position.
   b) Describe the sediment texture (using the Wentworth class size) and the vegetation characteristics of the floodplain unit.
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4. Repeat for other points in different hydrogeomorphic floodplain units across the cross section.
5. Identify the OHWM and record the indicators. Record the OHWM position via:
   - [ ] Mapping on aerial photograph
   - [ ] Digitized on computer
   - [x] GPS
   - [ ] Other:

Wentworth Size Classes

Inches (in)		Millimeters (mm)	Wentworth size class	
			Boulder	Gravel
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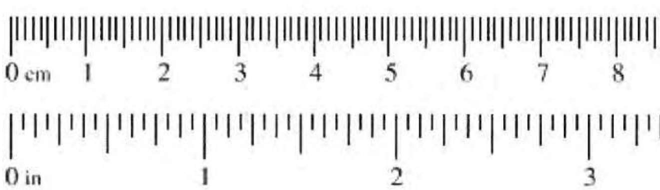
			Cobble	
	2.56	64		
			Pebble	
	0.157	4		
			Granule	
	0.079	2.00		
			Very coarse sand	Sand
	0.039	1.00		
			Coarse sand	
	0.020	0.50		
			Medium sand	
1/2	0.0098	0.25		
			Fine sand	
1/4	0.005	0.125		
			Very fine sand	
1/8	0.0025	0.0625		
			Coarse silt	Silt
1/16	0.0012	0.031		
			Medium silt	
1/32	0.00061	0.0156		
			Fine silt	
1/64	0.00031	0.0078		
			Very fine silt	
1/128	0.00015	0.0039		
			Clay	Mud



Project ID: **Cross section ID:** **Date:** **Time:**

Cross section drawing:

OHWM

GPS point: OHWM Transect A'-A' (see delineation map)

Indicators:

- [ ] Change in average sediment texture
- [x] Change in vegetation species
- [x] Change in vegetation cover
- [x] Break in bank slope
- [ ] Other: ____________
- [ ] Other: ____________

Comments:

Veg present @ & below OHWM = Tule, arroyo willow, button willow, Santa Barbara sedge

---

Floodplain unit: [x] Low-Flow Channel [ ] Active Floodplain [ ] Low Terrace

GPS point: ____________

Characteristics of the floodplain unit:

Average sediment texture: Clay / mud

Total veg cover: 10 % Tree: 0 % Shrub: 5 % Herb: 5 %

Community successional stage:

- [ ] NA
- [ ] Early (herbaceous & seedlings)
- [x] Mid (herbaceous, shrubs, saplings)
- [ ] Late (herbaceous, shrubs, mature trees)

Indicators:

- [ ] Mudcracks
- [ ] Ripples
- [x] Drift and/or debris
- [x] Presence of bed and bank
- [x] Benches
- [ ] Soil development
- [ ] Surface relief
- [x] Other: change in vegetation cover/species
- [ ] Other: ____________
- [ ] Other: ____________

Comments:

water present @ low flow channel mark

Plant species present = Arroyo willow, Button willow and tule

Project ID: **Cross section ID:** **Date:** **Time:**

Floodplain unit: ☐ Low-Flow Channel ☒ Active Floodplain ☐ Low Terrace

GPS point: OHMM Transect

Characteristics of the floodplain unit:

Average sediment texture: Clay/mud

Total veg cover: 100 % Tree: 40 % Shrub: 20 % Herb: 80 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☒ Mid (herbaceous, shrubs, saplings)
- ☐ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☐ Surface relief
- ☒ Other: Change in vegetation sp. and cover
- ☐ Other:
- ☐ Other:

Comments:

Vegetation present = Santa Barbara sedge, tule, blackberry, Arroyo willow

---

Floodplain unit: ☐ Low-Flow Channel ☐ Active Floodplain ☒ Low Terrace

GPS point:

Characteristics of the floodplain unit:

Average sediment texture: clay

Total veg cover: 100 % Tree: 80 % Shrub: 15 % Herb: 100 %

Community successional stage:

- ☐ NA
- ☐ Early (herbaceous & seedlings)
- ☐ Mid (herbaceous, shrubs, saplings)
- ☒ Late (herbaceous, shrubs, mature trees)

Indicators:

- ☐ Mudcracks
- ☐ Ripples
- ☐ Drift and/or debris
- ☐ Presence of bed and bank
- ☒ Benches
- ☐ Soil development
- ☒ Surface relief
- ☒ Other: Vegetation cover/species change
- ☐ Other:
- ☐ Other:

Comments:

Vegetation present = Valley oaks, blackberry, few willow and Santa barbara sedge

Exhibit A: Draft Delineation of Waters of the U.S. Map

Draft Delineation of Waters of the U.S.

Other Waters of the U.S.

Label	Cowardin	Type	Designation	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
OW01	R4SB5	Other Waters	RPW/Intermittent	39.63036	-121.93367	33.0	58.9	1942.6	0.04
OW1A	R4SB5	Other Waters	RPW/Intermittent	39.63150	-121.93408	NA	NA	187.0	0.00
OW02	R4SB5	Other Waters	RPW/Perennial	39.63141	-121.92858	39.8	118.0	4701.2	0.11
OW03	R4SB5	Other Waters	RPW/Intermittent	39.63114	-121.93069	17.0	344.6	5857.4	0.13
OW04	R4SB5	Other Waters	RPW/Intermittent	39.63078	-121.93208	60.0	280.9	16856.8	0.39
OW05	R4SB5	Other Waters	NRPW/Ephemeral	39.63175	-121.92880	3.0	538.9	1616.7	0.04
						Other Waters Totals =	1341.3	31161.6	0.72

*acreage is rounded to the nearest 100th

Wetland Features

Label	Cowardin	Type	Designation	Location (Lat/Long)		Width (ft)	Length (ft)	Area (sq ft)	Acres
WF01	PUB3	Seasonal Wetland	Adjacent	39.63130	-121.92949	NA	NA	1734.1	0.04
WF02	PUB3	Seasonal Wetland	Adjacent	39.63109	-121.93002	NA	NA	2796.1	0.06
WF03	PUB4	Riparian Wetland	Abutting	39.63119	-121.93147	NA	NA	54083.4	1.24
WF04	PUB4	Riparian Wetland	Abutting	39.63053	-121.93213	NA	NA	6365.9	0.15
WF05	PUB4	Riparian Wetland	Abutting	39.63100	-121.93034	NA	NA	18907.3	0.43
WF06	PUB4	Riparian Wetland	Abutting	39.63077	-121.93125	NA	NA	46965.0	1.08
WF07	PUB4	Riparian Wetland	Abutting	39.63094	-121.93236	NA	NA	4853.8	0.11
WF08	PUB4	Riparian Wetland	Abutting	39.63146	-121.93047	NA	NA	22238.7	0.51
WF09	PUB4	Riparian Wetland	Adjacent	39.63134	-121.92901	NA	NA	12136.3	0.28
WF10	PUB3	Seasonal Wetland	Adjacent	39.63155	-121.92818	NA	NA	6546.8	0.15
						Riparian Wetland Totals =	NA	165550.5	3.80
						Seasonal Wetland Totals =	NA	11076.9	0.25
						Wetland Features Totals =	NA	176627.4	4.05
						Total Waters of the U.S. =	1341.3	207789.0	4.77

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

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

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

*See Figure 3, Ground Photographs Map, for additional information on Photo Points.

NORTH 1:2,400 0 100 200 Feet
1 inch = 200 feet
Data Sources: ESRI, USDA NAIP 2016, Butte County

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Draft Delineation of Waters of the U.S.
Exhibit A

Delineation by: E. Gregg and M. Murphy
Map by: C. Davis & R. Edwards
GE# 16-025

gallaway ENTERPRISES
Map Date: 12/06/2017

ATTACHMENT F

ARCHAEOLOGICAL SURVEY AND HISTORIC PROPERTIES SURVEY REPORT

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Miles	Unit	E-FIS Project Number	Phase

District	*County*	*Federal Project. Number. (Prefix, Agency Code, Project No.)*	*Location*
03	Butte	BRLO 5912(103)	But-Ord Ferry Road/Little Chico Creek

The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by Caltrans pursuant to 23 U.S.C. 327 and the Memorandum of Understanding dated December 23, 2016, and executed by FHWA and Caltrans.

The studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800) and pursuant to the January 2014 *First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act* (Section 106 PA)

Project Description:

The APE (described in detail below) was subjected to intensive archaeological survey on April 9, 2017. The APE generally consists of a linear corridor extending approximately 2,700 feet in length and ranging from between 30 feet and 540 feet in width, and generally centered on Little Chico Creek. The APE is located approximately 1-mile west of 7 Mile Lane, and approximately 0.5-miles east of River Road, approximately 3.5-miles east of the Sacramento River, in Butte County, California. The proposed project includes the removal of the existing structurally deficient bridge and installation of a new bridge which will increase public safety along this segment of Ord Ferry Road.

The general project vicinity is depicted on Figure 1: Vicinity Map. The project location is depicted on the map labeled Figure 2: Project Location, and the specific APE is depicted on the map labeled Figure 3: APE Map.

2. AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) (Figure 3) for the project was established in consultation with and signed by Raymond Cooper, Local Agency Project Engineer, William Larson, Caltrans Associate Environmental Planner – Archaeology and Michael McCollum, Caltrans District Local Assistance Engineer, on November 29, 2017. The APE Map is identified as Figure 3 in both the Historic Properties Survey Report, and this Archaeological Survey Report.

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The APE was established so as to incorporate all ground disturbing impacts associated with construction and improvements proposed in conjunction with the Project.

The APE generally consists of a linear corridor extending approximately 2,700 feet in length and ranging from between 30 feet and 540 feet in width, and generally centered on Little Chico Creek. The APE is located approximately 1-mile west of 7 Mile Lane, and approximately 0.5-miles east of River Road, approximately 3.5-miles east of the Sacramento River, in Butte County, California.

Vertical soil disturbance for the project will occur at several depths depending on the location. Since the roadway profile will match or be higher than the existing profile, excavation for the approach roadway will be limited to the depth necessary to construct the roadway structural section. The roadway section will consist of compacted asphalt and aggregate base approximately 2 feet thick. Deeper excavations will be necessary near the bridge abutments in order to construct the bridge footings. Bridge abutment excavation is expected to extend approximately 12-15 feet in depth. Finally, driven piles will be necessary to support the bridge abutments and bridge piers. These piles will extend from the bottom of the footing up to 70 feet below the existing ground surface. The pile tips represent the maximum depth of disturbance within the project limits.

The APE, as delineated on Figure 3, is the boundary within and adjacent to which cultural studies have been conducted. No construction activities will occur outside the areas that have been surveyed or evaluated by Mr. Jensen for this report. The project is not expected to require any alteration of private properties to accommodate the storage of equipment.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

X Local Government

- Butte County Department of Public Works.

X Native American Tribes, Groups and Individuals

- Letters describing and a map depicting the project area were sent to Native American groups, listed by the Native American Heritage Commission, on April 6, 2017 (letter sent to each group/individual is included in Attachment 1). Follow-up telephone messages were left with all parties on April 28, 2017 (Communications Log attached). To date, no responses have been received.

X Native American Heritage Commission

- Letter to NAHC, March 19, 2017 (included in Attachment 1).
- Response from the NAHC dated April 3, 2017 (included in Attachment 1).

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4. SUMMARY OF IDENTIFICATION EFFORTS

X National Register of Historic Places
X California Register of Historical Resources
X California Inventory of Historic Resources
X California Historical Landmarks
X California Points of Historical Interest
X California Historical Resources Information System (CHRIS)
X Caltrans Historic Highway Bridge Inventory
X Caltrans Cultural Resources Database (CCRD)
X Other Sources consulted

- Northeast Information Center, CSU-Chico. Records Search dated 3/30/2017.

X Results:

The records search area was established at 1/4-mile radius of the APE. No investigations have been conducted within the APE. Three investigations have been conducted within the 1/4- search area, and include:

Report #	Date	Author
839	1988	Kowta
144	1975	Cross and Thorn
5245	2002	Jensen and Jensen

No prehistoric or historic-era sites have been recorded or otherwise identified within the APE boundary, nor within 1/4-mile of the APE boundary, on records maintained at the Northeast Information Center. Additionally, no prehistoric sites, traditional use areas or other cultural issues of concern have been identified by the Native American groups and individuals contacted. The Native American Heritage Commission (NAHC) has no record of Sacred Land listings within, adjacent or close to the project area. The data file and determinations of effect for the Office of Historic Preservation also failed to document resources in the APE. Lastly, the California Inventory failed to identify potential historic resources within the APE.

5. PROPERTIES IDENTIFIED

X Sean Jensen, Archaeologist and Historian, Genesis Society, who meets the Professional Qualified Staff Standards in Section 106 Programmatic Agreement Attachment 1 as a Principal Investigator-Prehistoric Archaeology and Historical Archaeology, has determined that the only properties present within the APE

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meet the criteria for Section 106 Programmatic Agreement Attachment 4 (Properties Exempt from Evaluation).

- Remnant water control feature-exempt under Attachment 4 as Property Type 1: Minor, ubiquitous.

X Bridges listed as Category 5 in the Caltrans Historic Highway Bridge Inventory are present within the APE. Appropriate page from the Caltrans Historic Bridge Inventory is attached.

- Bridge 12C0242

6. HPSR to District File

X Caltrans, pursuant to Section 106 PA Stipulation VIII.B, has determined that there are no cultural resources present in the APE and/or there are properties within the APE that are exempt from evaluation; see Section 5.

7. HPSR to SHPO

X Not applicable.

8. HPSR to CSO

X Not applicable.

9. Findings for State-Owned Properties

Findings to District File

X Not applicable; project does not involve Caltrans right-of-way or there are no Caltrans-owned cultural resources within the APE.

Findings to SHPO

X Not applicable.

Findings to CSO

X Not applicable.

10. CEQA Considerations

X Not applicable; Caltrans is not the lead agency under CEQA.

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11. List of Attached Documentation

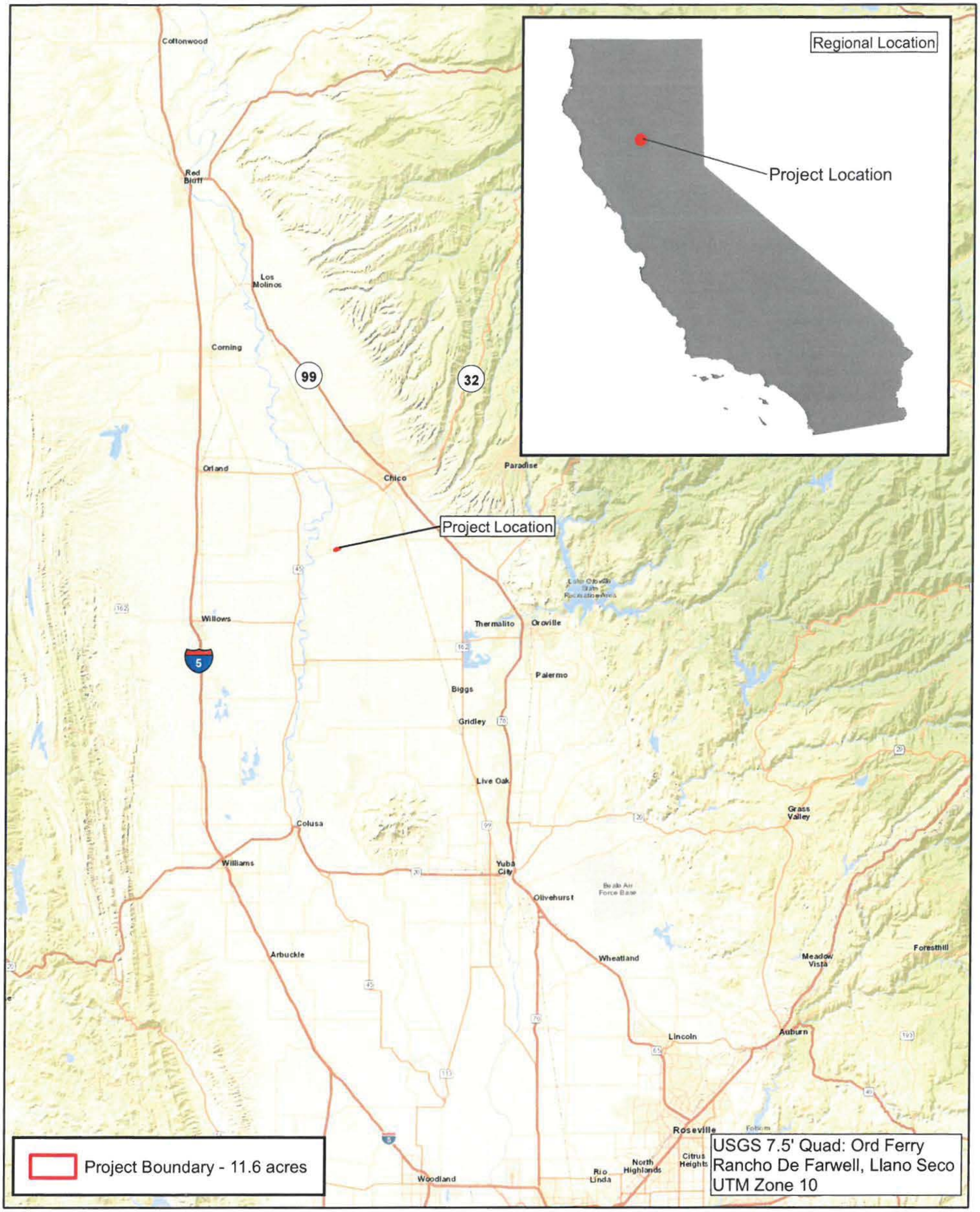
X Project Vicinity, Location, and APE Maps (Maps 1, 2 and 3, respectively).
X California Historic Bridge Inventory sheet
X Archaeological Survey Report (ASR)
- Sean Michael Jensen, September 2017. Reviewer: Erin Dwyer, October 2017.

X Other
- Attachment 1 of the ASR: Correspondence: Native American Heritage Commission (NAHC). Native American Representatives on the NAHC contact list, Communications log.
- Attachment 2 of the ASR: Copy of Records Search, Northeast Information Center, dated 3/30/2017.

12. HPSR Preparation and Caltrans Approval

Prepared by:	[signature]	11-30-17
Consultant / discipline:	Sean Michael Jensen, Principal Investigator Prehistoric Archaeology, Historical Archaeology	Date
Affiliation	Genesis Society 7053 Molokai Drive Paradise, CA 95969	
Reviewed for approval by:	[signature]	12-19-17
District 3 Caltrans PQS discipline/level:	William Larson, Associate Environmental Planner, PQS-PI: Prehistoric Archaeology	Date
Approved by:	Laura Loeffler	12/21/17
District 3 EBC:	Laura Loeffler, Branch Chief Office of Environmental Management, M1	Date

FIGURE 1



NORTH

1:812,500

0 2.5 5 Miles

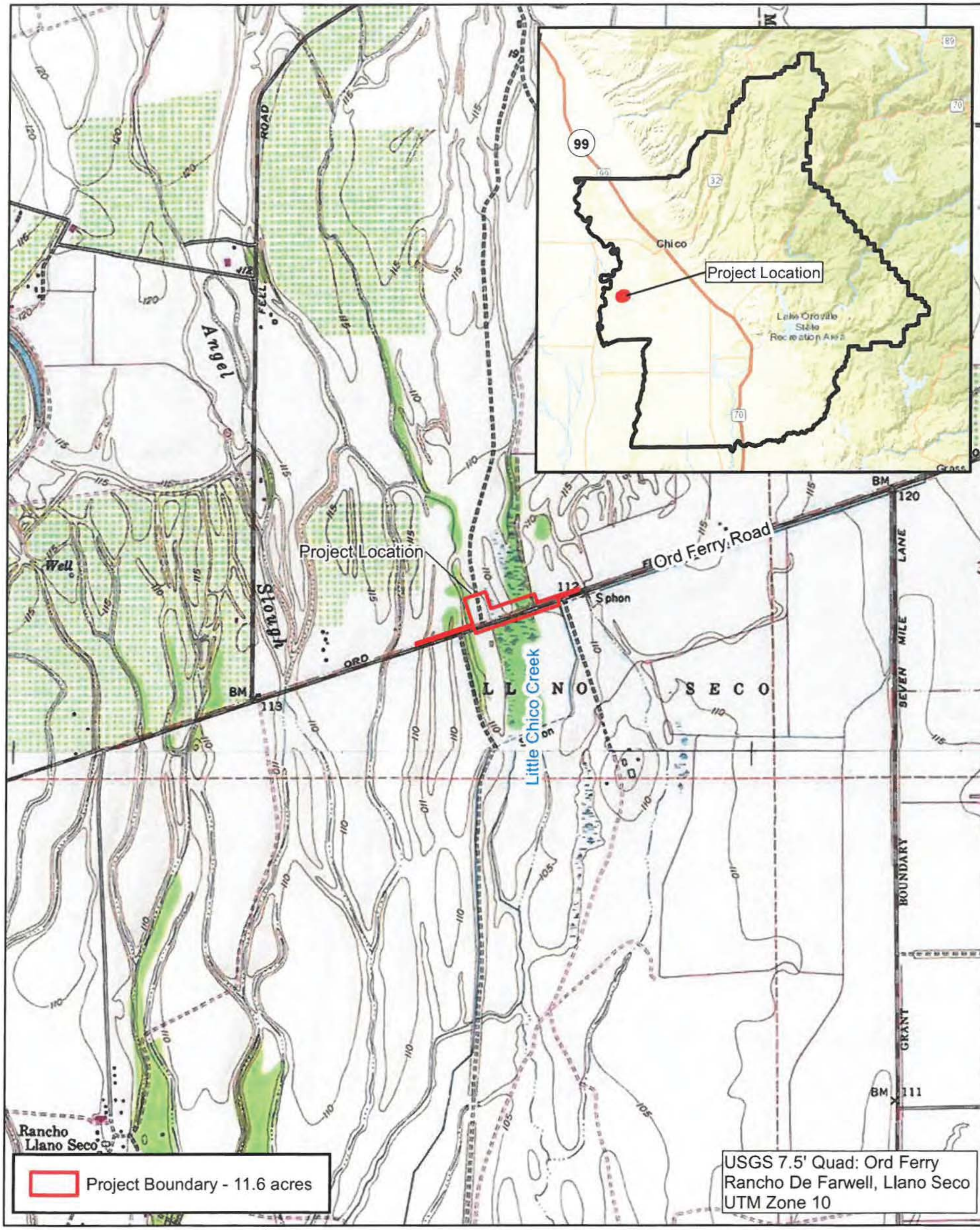
Data Sources: ESRI, Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Regional Location Map
Figure 1

gallaway ENTERPRISES

GE# 16-025 Map Date: 04/20/17

FIGURE 2



NORTH

1:24,000

0 500 1,000 Feet

Data Sources: ESRI, Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Project Location Map
Figure 2

gallaway ENTERPRISES

GE# 16-025 Map Date: 04/20/17

FIGURE 3

LOCAL AGENCY APPROVAL	CALTRANS APPROVAL	CALTRANS DATE APPROVAL	BUTTE COUNTY DEPARTMENT OF PUBLIC WORKS	ORD FERRY ROAD AT LITTLE CHICO CREEK BRLS-5912(103) BRIDGE No. 12C-0242 AREA OF POTENTIAL EFFECT MAP	SHEET 1 OF 1 SHEET
11/29/17 BUTTE COUNTY ENVIRONMENTAL REP — DATE	11/28/17 CALTRANS DISTRICT 3 PROFESSIONALLY QUALIFIED STAFF — DATE	11/28/17 DISTRICT 3 LOCAL ASSISTANCE ENGINEER — DATE	7 County Center Drive Oroville, CA 95965 Phone: (530) 538-7681 Fax: (530) 538-7171		

ATTACHMENT 1

GENESIS SOCIETY

a Corporation Sole

7053 MOLOKAI DRIVE
PARADISE, CALIFORNIA 95969
(530) 680-6170 VOX
seanjensen@comcast.net

March 19, 2017

Native American Heritage Commission
1550 Harbor Boulevard,
West Sacramento, California 95691

Subject: ***Ord Ferry Bridge Project, circa 11.6-acres, Butte County, California.***

Dear Commission:

We have been requested to conduct the archaeological survey, for the above-cited project, and are requesting any information you may have concerning archaeological sites or traditional use areas for this area. Any information you might supply will be used to supplement the archaeological and historical study being prepared for this project.

Project Name:	Ord Ferry Bridge over Little Chico Creek Project
County:	Butte
Maps:	USGS Ord Ferry 7.5'
Location:	Portion of Rancho De Farwell, Llano Seco

Thanks in advance for your assistance.

Regards,

Sean Michael Jensen

Sean Michael Jensen, Administrator

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 Fax

April 3, 2017

Sean Michael Jensen
Genesis Society

Sent by: seanjensen@comcast.net

RE: Ord Ferry Bridge Project, Butte County

Dear Mr. Jensen,

Attached is a list of tribes that have cultural and traditional affiliation to the area of potential project effect (APE) referenced above. I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. By contacting all those on the list, your organization will be better able to respond to claims of failure to consult, as may be required under particular state statutes. If a response has not been received within two weeks of notification, the Native American Heritage Commission (NAHC) requests that you follow-up with a telephone call to ensure that the project information has been received.

The NAHC also recommends that project proponents conduct a record search of the NAHC Sacred Lands File (SLF) at the appropriate regional archaeological Information Center of the California Historic Resources Information System (CHRIS) (http://ohp.parks.ca.gov/?page_id=1068) to determine if any tribal cultural resources are located within the area(s) affected by the proposed action. The SFL, established under Public Resources Code section 5094, are sites submitted for listing to the NAHC by California Native American tribes. The SFL, established under Public Resources Code section 5094, are sites submitted for listing to the NAHC by California Native American tribes. A record search of the SLF was completed for the APE referenced above with negative results. Please note records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of tribal cultural resources. A tribe may be the only source of information regarding the existence of tribal cultural resources.

If you receive notification of change of addresses and phone numbers from any of these tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: frank.lienert@nahc.ca.gov

Sincerely,

Frank Lienert
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contacts
4/3/2017

Mechoopda Indian Tribe
Dennis E. Ramirez, Chairperson
125 Mission Ranch Blvd — Mechoopda Maidu, Concow
Chico , CA 95926
dramirez@mechoopda-nsn.gov
(530) 899-8922
(530) 899-8517 - Fax

Greenville Rancheria
Kyle Self, Chairperson
P.O. Box 279 — Maidu
Greenville , CA 95947
kself@greenvillerancheria.com
(530) 284-7990
(530) 284-6612 Fax

Mooretown Rancheria of Maidu Indians
Gary Archuleta, Chairperson
#1 Alverda Drive — Maidu, KonKow / Concow
Oroville , CA 95966
frontdesk@mooretown.org
(530) 533-3625

(530) 533-3680 Fax

KonKow Valley Band of Maidu
Wallace Clark-Wilson, Chairperson
PO Box 5850 — KonKow / Concow, Maidu
Oroville , CA 95966
(530) 533-1504

Berry Creek Rancheria of Maidu Indians
James Edwards, Chairperson
5 Tyme Way — Tyme Maidu
Oroville , CA 95966
jedwards@berrycreekrancheria.com
(530) 534-3859

(530) 534-1151 Fax

Estom Yumeka Maidu Tribe of the Enterprise Rancheria
Glenda Nelson, Chairperson
2133 Monte Vista Avenue — Maidu
Oroville , CA 95966
info@enterpriserancheria.com
(530) 532-9214

(530) 532-1768 Fax

Tsi Akim Maidu
Grayson Coney, Cultural Director
P.O. Box 510 — Maidu
Browns Valley , CA 95918
tsi-akim-maidu@att.net
530-274-7497

Tsi Akim Maidu
Don Ryberg, Chairperson
P.O. Box 510 — Maidu
Browns Valley , CA 95918
tsi-akim-maidu@att.net
Office 530-274-7479
cell 530-559-8595

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources assessments for the updated contact list for Ord Ferry Bridge Project, Butte County

GENESIS SOCIETY

a Corporation Sole

7053 MOLOKAI DRIVE
PARADISE, CALIFORNIA 95969
(530) 680-6170 VOX
seanjensen@comcast.net

April 6, 2017

Native American Individuals, Groups and Tribes

Subject: ***Ord Ferry Bridge Project, circa 11.6-acres, Butte County, California.***

Dear Interested Native Americans:

Enclosed is a USGS topo-based map showing the location for a bridge replacement project within Butte County, California.

We have been requested to conduct the archaeological survey, and are requesting any information you may have concerning archaeological sites or traditional use areas for this area. Any information you might supply will be used to supplement the archaeological and historical study being prepared for this project.

Project Name:	Ord Ferry Bridge over Little Chico Creek Project
County:	Butte
Maps:	USGS Ord Ferry 7.5'
Location:	Portion of Rancho De Farwell, Llano Seco

Due to federal funding, Caltrans will provide oversight to ensure compliance with Section 106 of the National Historic Preservation Act as well as other federal laws and regulations.

Thanks for your help. Please call with any questions.

Regards,

Sean Michael Jensen

Sean Michael Jensen, Administrator

COMMUNICATIONS LOG, ORD FERRY BRIDGE across LITTLE CHICO CREEK REPLACEMENT PROJECT

Contacted Party	Date	Medium	Comments
Estom Yumeka Maidu Tribe of the Enterprise Rancheria, Glenda Nelson	April 6, 2017 April 28, 2017	Email	Delivered email containing consultation letter and project map. Detailed telephone message left with no response.
Tsi-Akim Maidu, Grayson Coney and Don Ryberg	April 6, 2017 April 28, 2017	Email	Delivered email containing consultation letter and project map. Detailed telephone message left with no response.
Berry Creek Rancheria of Maidu Indians, James Edwards	April 6, 2017 April 28, 2017	Email	Delivered email containing consultation letter and project map. Detailed telephone message left with no response.
KonKow Valley Band of Maidu, Wallace Clark-Wilson	April 6, 2017 April 28, 2017	United States Postal Service	Delivered hard copies of consultation letter and project map. Detailed telephone message left with no response.
Greenville Rancheria, Kyle Self	April 6, 2017 April 28, 2017	Email	Delivered email containing consultation letter and project map. Detailed telephone message left with no response.
Mechoopda Indian Tribe, Dennis E. Ramirez	April 6, 2017 April 28, 2017	Email	Delivered email containing consultation letter and project map. Detailed telephone message left with no response.

ATTACHMENT 2

ARCHAEOLOGICAL SURVEY REPORT FOR ORD FERRY ROAD BRIDGE REPLACMENT AT LITTLE CHICO CREEK PROJECT

Butte County, California

BRLO 5912 (103)

Prepared by ____________________ 11-30-17
Name Sean Michael Jensen Date
Paradise, California

Reviewed by ____________________ 12-19-17
Name William Larson, Associate Environmental Date
Planner, PQS-PI Prehistoric Archaeology

Prepared for Laura Loeffler 12/21/17
Name Laura Loeffler, Branch Chief Date
District 3—Office of Environmental Management, MH

USGS Ord Ferry 7.5'

Circa 11.6 Acres

September 2017

Table of Contents

Summary of Findings	3
Introduction	3
Sources Consulted	6
Background	7
Field Methods	10
Study Findings and Conclusions	11
Other Resources	11
References Cited	11

Figures

Figure 1: Vicinity Maps
Figure 2: Location Maps
Figure 3: APE Maps

Attachment 1: Native American Correspondences
Consultation letter, Native American Heritage Commission (NAHC).
Response from, NAHC, dated April 3, 2017.
Consultation letters sent to Native American individuals/groups on NAHC contact list.
Communications log documenting supplemental consultation communications.

Attachment 2: Records Search
Copy of Records Search from the Northeast Information Center dated 3/30/17.
Caltrans Historic Highway Bridge Inventory page for Bridge No. 12C-0242.

Summary of Findings

Butte County (County) in conjunction with the California Department of Transportation (Caltrans) as assigned by the Federal Highway Administration (FHWA) proposes to replace the functionally obsolete bridge (Bridge No. 12C-0242) along Ord Ferry Road crossing Little Chico Creek in Butte County, California.

This document reports efforts to identify potential archaeological resources within the Area of Potential Effects (APE) in support of the Ord Ferry Road Bridge Replacement at Little Chico Creek Project, and involves a records search undertaken at the Northeast Information Center of the California Historical Resources Information System, at CSU-Chico, consultation with the Native American Heritage Commission (NAHC), consultation with interested Native American Individuals/Groups/Tribes, and an intensive pedestrian survey of the APE.

All survey objectives were met for this project.

No archaeological resources were identified within the APE, nor within 1/4-mile of the APE. The only property present within the APE is a built environment resource that is exempt from evaluation under Attachment 4 of the Section 106 PA.

It is Caltrans' policy to avoid cultural resources whenever possible. If a known site or sites couldn't be avoided by the project, further investigation(s) would be needed. If buried cultural materials are encountered during construction, it is Caltrans' policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. If the project was to change and include areas not previously surveyed, additional survey work will be required.

Introduction

The APE (described in detail below) was subjected to intensive archaeological survey on April 9, 2017. The APE generally consists of a linear corridor extending approximately 2,700 feet in length and ranging from between 30 feet and 540 feet in width, and generally centered on Little Chico Creek. The APE is located approximately 1-mile west of 7 Mile Lane, and approximately 0.5-miles east of River Road, approximately 3.5-miles east of the Sacramento River, in Butte County, California. The proposed project includes the removal of the existing structurally deficient bridge and installation of a new bridge which will increase public safety along this segment of Ord Ferry Road. The general project vicinity is depicted on Figure 1: Vicinity Map. The project's location is depicted on Figure 2: Project Location, and the specific APE is depicted on Figure 3: APE Map.

The pedestrian survey was conducted by Mr. Sean Michael Jensen, M.A., administrator for Genesis Society, Paradise, California. Mr. Jensen is a professional archaeologist, with 30 years experience in archaeology and history of the western United States, who meets the Secretary of Interior's Standards for Professional Qualification, as demonstrated in his inclusion on the California Historical Resources Information System's list of qualified consultants. Mr. Jensen has undertaken over 2,000 separate federal, State and local agency projects distributed throughout California, Oregon, Washington, Arizona, Montana, Nevada, and Hawaii.

Highway Project Location and Description

The present project is located within Caltrans District 3, Butte County, Ord Ferry Road Bridge Replacement at Little Chico Creek Project (Project), and further identified as BRLO 5912 (103).

The APE was subjected to intensive archaeological survey on April 9, 2017. The APE generally consists of a linear corridor extending approximately 2,700 feet in length and ranging from between 30 feet and 540 feet in width, and generally centered on Little Chico Creek. The APE is located approximately 1-mile west of 7 Mile Lane, and approximately 0.5-miles east of River Road, approximately 3.5-miles east of the Sacramento River, in Butte County, California. The proposed project includes the removal of the existing structurally deficient bridge and installation of a new bridge which will increase public safety along this segment of Ord Ferry Road.

The proposed new bridge will replace the existing structures on the current, existing alignment. It will extend approximately 640 feet in length and approximately 43 feet in width and carry (2) twelve-foot traffic lanes and (2) eight-foot shoulders. The cast-in-place reinforced concrete slab bridge is expected to be composed of seventeen spans arranged in two frames with an intermediate hinge. The intermediate supports are expected to be small diameter pile extensions founded on cast-in-steel-shell (CISS) piles. The CISS pile shafts will be driven utilizing a crane and pile hammer. Bridge abutments are anticipated to be reinforced concrete seat style abutments founded on driven piles; likely steel H-piles or small diameter steel pipe piles. Impact pile driving will be required for installation for these bridge abutment piles.

The bridge superstructure construction within the floodplain will utilize cast-in-place methodology with traditional concrete forms, and temporary supports consisting of falsework beams, timer bents, and timber pads. Falsework construction will be relatively simple due to the short 40' spans on the new bridge and with Little Chico Creek being relatively dry during the construction season.

The project will not involve permanent modification or alteration of Little Chico Creek, however permanent rock slope protection is required near both bridge abutment supports and abutment slopes to prevent erosion and scour. Rock slope protection is anticipated along the bank for the width of the bridge and approximately 40 feet on either side of the bridge (existing levee). The only other permanent features placed or removed within the bounds of the Little Chico Creek below the ordinary high-water elevation will be a portion of the new bridge supports and removal of the old bridge supports.

Ord Ferry Road will be widened to 40 feet for a length of approximately 400' feet on both sides of the bridge. At both ends of the bridge, the road surface (Asphalt Concrete pavement) will be tapered to match the existing cross section. The new approach roadway will conform to the existing Hogsback Drain bridge located 400' southwest of the existing Ord Ferry bridge. Fill will need to be imported to provide for a smooth vertical transition from the new bridge deck level to the existing roadway grade. Existing electrical, telephone, and fiber optic utilities located on the west side of the Ord Ferry Road will need to be relocated as part of the project.

Staging of the bridge and roadway approach construction is required to keep the road open to traffic during construction operations. The first construction stage would reduce the existing bridge to a single 11' traffic lane and demolish a portion of the existing bridge. A portion of the new bridge would then be constructed with a lane approximately 13' wide provided for traffic to be moved onto the new bridge portion. The remainder of the existing bridge would be removed with the remainder of the new bridge constructed in its place. This staged bridge construction alternative would require two construction seasons and approximately 18 months of single lane traffic control utilizing a temporary traffic signal system. The Contractor will need to construct a temporary access road just north of the existing bridge to move equipment and materials within the project site. It is anticipated that oversized farm equipment wider than the staged bridge width will also use this temporary road to traverse the project site.

It is anticipated that excavators, dozers, cranes, pavers, dump trucks, concrete trucks, concrete pumps, pile driving hammers, and pile driving equipment will be required to construct the new bridge.

Construction is anticipated to be completed in two construction seasons with a suspension of operations during the winter rainy season.

See Vicinity Map (Figure 1) for the general project location, and Project Location Map (Figure 2) that depicts the project location on a topographic-based USGS quadrangle.

The project will rely on federal funding and meets the definition of an "undertaking" according to 36 CFR §800.16(y). Caltrans, acting as the lead agency under the delegated authority of the Federal Highway Administration, is providing oversight of this undertaking in accordance with the *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (Caltrans PA) (January 1, 2014).

Area of Potential Effects (APE)

The Area of Potential Effects (APE) (Figure 3) for the project was established in consultation with and signed by Raymond Cooper, Local Agency Project Engineer, William Larson, Caltrans Associate Environmental Planner – Archaeology and Michael McCollum, Caltrans District Local Assistance Engineer, on November 29, 2017. The APE Map is identified as Figure 3 in both the Historic Properties Survey Report, and this Archaeological Survey Report.

The APE was established so as to incorporate all ground disturbing impacts associated with construction and improvements proposed in conjunction with the Project. All work will take place within the existing right-of-way and does not require any right-of-way acquisition.

The APE generally consists of a linear corridor extending approximately 2,700 feet in length and ranging from between 30 feet and 540 feet in width, and generally centered on Little Chico Creek. The APE is located approximately 1-mile west of 7 Mile Lane, and approximately 0.5-miles east of River Road, approximately 3.5-miles east of the Sacramento River, in Butte County, California.

Vertical soil disturbance for the project will occur at several depths depending on the location. Since the roadway profile will match or be higher than the existing profile, excavation for the approach roadway will be limited to the depth necessary to construct the roadway structural section. The roadway section will consist of compacted asphalt and aggregate base approximately 2 feet thick. Deeper excavations will be necessary near the bridge abutments in order to construct the bridge footings. Bridge abutment excavation is expected to extend approximately 12-15 feet in depth. Finally, driven piles will be necessary to support the bridge abutments and bridge piers. These piles will extend from the bottom of the footing up to 70 feet below the existing ground surface. The pile tips represent the maximum depth of disturbance within the project limits.

The APE as delineated on Figure 3 is the boundary within and adjacent to which cultural studies have been conducted. No construction activities will occur outside the area that has been surveyed or evaluated by Mr. Jensen for this report. The project is not expected to require any alteration of private properties to accommodate the storage of equipment.

Sources Consulted

Summary of Methods and Results

Prior to conducting the pedestrian field survey, the official Butte County archaeological records maintained by the Northeast Information Center were examined for any existing recorded prehistoric or historic sites (NEIC File No.: W17-45, dated March 30, 2017).

In addition to examining the official records of Butte County as maintained by the Northeast Information Center, the following were also reviewed by the Information Center, or separately:

- The National Register of Historic Places (1988, Supplements through 7-00).
- The California Register of Historical Resources (2012).
- Directory of Properties in the Historic Property Data File for Butte County (2015).
- Office of Historic Preservation Determination of Eligibility (2015).
- The California Inventory of Historic Resources (2014).
- California Points of Historical Interest (1992).
- California Historical Landmarks (2012).
- Historic Spots in California (1990).
- Gold Districts of California (1970).
- Handbook of North American Indians, Vol. 8, California (1978).
- The Caltrans State and Local Bridge Survey (2016).
- USGS Ord Ferry, CA 7.5' quadrangle (1949).

The records search area was established at 1/4-mile radius of the APE.

According to the records maintained by the NEIC, no archaeological surveys have been conducted within the APE. Three investigations have been conducted within the 1/4-mile radius search area. These include:

Report #	Date	Author
839	1988	Kowta
144	1975	Cross and Thorn
5245	2002	Jensen and Jensen

No prehistoric or historic-era sites have been recorded or otherwise identified within the APE boundary, nor within 1/4-mile of the APE boundary, on records maintained at the Northeast Information Center. Additionally, no prehistoric sites, traditional use areas or other cultural issues of concern have been identified by the Native American groups and individuals contacted. The Native American Heritage Commission (NAHC) has no record of Sacred Land listings within, adjacent or close to the project area. The data file and determinations of effect for the Office of Historic Preservation also failed to document resources in the APE. Lastly, the California Inventory failed to identify potential historic resources within the APE.

Summary of Native American Consultation

NAHC was requested to supply any information they had concerning Sacred Land listings for the project area. The NAHC indicated that there are no Sacred Land listings for the project area or adjacent lands (response dated April 3, 2017, included in Attachment 1). The contact list from the Native American Heritage Commission included the following individuals and groups, all of whom were contacted and requested to supply any information they might have concerning prehistoric sites or traditional use areas within the project area (request letters dated April 6, 2017):

1. Dennis Ramirez, Mechoopda Indian Tribe.
2. Kyle Self, Greenville Rancheria.
3. Gary Archuleta, Mooretown Rancheria of Maidu Indians.
4. Wallace Clark-Wilson, KonKow Valley Band of Maidu.
5. James Edwards, Berry Creek Rancheria of Maidu Indians.
6. Glenda Nelson, Estom Yumeka Maidu Tribe of the Enterprise Rancheria.
7. Grayson Coney and Don Ryberg, Tsi-Akim Maidu.

Follow-up telephone calls were made to all of the parties on April 28, 2017 (Communications Log attached). In all cases voicemails were reached, and detailed messages concerning the project description and findings was provided, along with contact information for both Caltrans and Genesis Society. No responses were received.

Consultation will continue for the life of the project.

Background

Environment

In prehistoric times, Little Chico Creek, which flows north-south through the present APE, was a significant surface water source that made possible relatively intensive occupation during all prehistoric phases as well as the early historic time period. A number of ecotones and microenvironments are represented along this Creek (Klaseen and Ellison 1974), which prior to modern development created a complex mosaic of vegetation and dependent fauna. An oak/grassland community once dominated the area, with native flora at one time including gray pine (*Pinus sabiniana*), buckeye (*Aesculus californica*), valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), buck brush (*Ceanothus* sp.) and manzanita (*Arctostaphylos* sp.), redbud (*Cercis occidentalis*), poison oak (*Toxicodendron diversiloba*), toyon (*Heteromeles arbutifolia*), yerba santa (*Eriodictyon* sp.), sycamore (*Platanus racemosa*), Willow and a variety of annual grasses and forbes dominating the wetter areas along Chico Creek, and its overflow channels.

The rich and complex vegetation and resident land fauna, avian, and aquatic species provided substantial dietary and other economic resources important to the Native American economy.

Based on previous cultural resources studies undertaken within the general vicinity of the APE, coupled with the absence of prehistoric cultural materials being documented within these previous investigation areas, the APE appeared to be situated within lands of low to moderate archaeological sensitivity with respect to prehistoric sites. The APE appeared to represent moderate sensitivity with respect to historic-period sites. While historic-period sites had been identified in the general area, the postulate of moderate sensitivity was based on the considerable disturbance to both the surface and subsurface setting, resulting from decades of historic agricultural, contemporary road construction, and contemporary placement of buried and overhead utilities.

Prehistory

The earliest residents in the Great Central Valley are represented by the Fluted Point and Western Pluvial Lakes Traditions, which date from about 11,500 to 7,500 years ago (Moratto 2004). Within portions of the Central Valley, fluted projectile points have been found at Tracy Lake (Heizer 1938) and around the margins of Buena Vista Lake in Kern County. Similar materials have been found to the north, at Samwell Cave near Shasta Lake and near McCloud and Big Springs in Siskiyou County. These early peoples are thought to have subsisted using a combination of generalized hunting and lacustrine exploitation (Moratto 2004).

The population of this early culture underwent a substantial increase in density after about 7,500-6,500 years ago. One of the most securely dated of these post-6,500 year old assemblages is from the Squaw Creek Site located north of Redding. Here, a charcoal-based C-14 date suggests extensive Native American presence by 6,500 years ago, or 4,500 B.C. Most of the artifactual material dating to this time period has counterparts further south, around Borax (Clear) Lake and the Farmington Area east of Stockton. Important artifact types from this time period include large wide-stemmed projectile points and manos and metates.

In the Northern Sacramento Valley, aboriginal populations continued to expand between 6,500 and 4,500 years ago (Ragir 1972). By about 2000 years ago, Macro-Penutian-speaking peoples (including the Maidu) are believed to have arrived in the area, bringing with them an economy which relied on extensive use of bulbs and other plant foods, animal and fishing products more intensively processed with mortars and pestles, and perhaps the bow and arrow and associated small stemmed- and corner-notched projectile points. Arriving ultimately from southern Oregon and the Columbia and Modoc Plateau region and proceeding down the major drainage systems (including the Feather, Yuba and American Rivers), the Penutian-speaking Maidu eventually displaced Hokan populations as far west as the Sacramento Valley floor and the margins of the Sacramento River and, at the time of contact with Euroamerican populations (*circa.* AD 1850), were still expanding into areas previously occupied by the earlier Hokan-speaking peoples (including the Yana who by this date had migrated to the north of Chico). Around Chico, the so-called Shasta (archaeological) Complex represents the material culture record of the local Penutian speakers.

This model of prehistoric cultural development within the northern Sacramento Valley is generally well documented, and derives from research by Chartkoff, Miller and Johnson (n.d.), Ritter (1970), Markley (1975), Kowta (1978), Jensen (1987), Jensen & Jensen (2000, 2002), and others.

Ethnography

As noted above, the Konkow, or Northwest Maidu, were resident in the Chico area at the time of Euro-American contact (*circa.* AD 1840's). These people, whose language was a branch of the Penutian family, occupied a portion of the Sacramento Valley floor along both sides of the Sacramento River, as well as the foothills east of Chico and Oroville near the confluence of the south, middle, north, and west branches of the Feather River, as well as the lower drainages of Big and Little Chico Creeks and Butte Creek. On the basis of linguistic differences and geographical distribution, the Maidu have been divided into three primary groups: the Southern Maidu, or Nisenan; the Northeastern Maidu, or Mountain Maidu; and the Northwestern Maidu, or Konkow (Shipley 1978:83). It is this latter group which laid claim to the Chico area at the time of General John Bidwell's arrival.

The basic social unit for the Maidu was the nuclear family, although the village may also be considered a social, political and economic unit. Villages were usually located on flats adjoining streams, and on ridges high above rivers and creeks, and were most intensively occupied during the winter months (Dixon 1905:175). Villages typically consisted of a scattering of conical bark dwellings, numbering from four or five to several dozen in larger villages, each house containing a single family of from three to seven people (Riddell 1978:373). Larger villages, with from twelve to fifteen or more houses, might also contain a *kumi*, a semi-subterranean earth-covered lodge. The village containing the largest of these structures acted as the ceremonial assembly center (ibid:373). Between three and five villages comprised a "village community" which defended, controlled and exploited a known territory. One such "village" was the Mechoopda, some of whose descendants still live in Chico today.

Resources exploited by the Maidu in the Chico area were both diverse and prolific. A variety of plant and animal species was readily available for collection, processing and consumption, with several different food types complimenting one another during various seasons. During the spring, a variety of herbs, tubers, roots, and grass seeds were collected from environments within close proximity to the winter village. During the summer months, individuals and groups would venture into the higher elevations in order to procure various plants and animals. Small, medium, and large mammals were actively hunted within the mountainous regions east of Chico, with only the coyote, dog, wolf, and bear avoided. Several types of insects were also collected during the summer, including yellow jacket larvae, grasshoppers, locusts, and crickets; all of which could be eaten dry, or roasted, the bulk of which were often stored for the winter months.

The transition between summer and autumn brought with it an abundance of food resources. Late summer fish runs were actively exploited, with salmon providing a large portion of the spoils. In addition to salmon, suckers, eels, and a variety of small, slow fish were actively exploited, especially during the Late Prehistoric periods (Broughton 1988). Fresh water mussels were also collected by the Maidu year-round, but were intensively exploited during periods of low water volume (late summer/early autumn) (Eugster 1990:114). Several types of nut seeds were collected during the early autumn months as well, with acorns provided by various oak species representing the greatest volume of nut meat harvested. While several varieties of acorn producing oaks exist, the Maidu preferred the black oak, golden oak, and the interior live oak. Other acorn producing varieties include the valley oak, blue oak, and the tan oak. The acorns were collected and then crushed in mortars to form acorn flour. Tannic acid had to be leached from the flour with warm water before consumption. A bland bread was baked from the flour, providing a carbohydrate staple.

Technological adaptations by the Maidu allowed for a quasi-sedentary lifestyle, especially within the Chico area where food resources and surface water sources were abundant. Storage was crucial to sedentism, with storage devices, structures, and methods being numerous.

During the course of seasonal rounds and in conjunction with specialized resource exploitation, the Maidu created a wide range of archaeological site "types" in the Chico area. While only fragmentary evidence of the associated material culture remains at many of these sites (due in large part to perishability but also to the impacts to archaeological sites resulting from later [historic] land uses), the range of such site types for this general area of Chico includes:

Surface scatters of lithic artifacts and debitage, often but not always associated with dark brown to black "midden" deposits; surface scatters of lithic artifacts and debitage without associated middens; bedrock milling stations, including both mortar holes and metate slicks; petroglyphs, especially "pitted" or "cupped" rock outcrops; trails; and isolated artifacts and flakes.

Clearly, it was not expected that all such site/feature types would be present within the very small project area, but rather these represent the most likely "*types*" to be encountered if any sites were discovered at all, based on background information and the results of previous survey within the project's vicinity.

History

Early Spanish expeditions arrived in the Great Central Valley of California from Bay Area missions as early as 1804. By the mid-1820's, literally hundreds of fur trappers were annually traversing the Valley on behalf of the Hudson's Bay Company (Maloney 1945), some with devastating consequences for the local Maidu and other valley populations (Cook 1955). By the late 1830's and early 1840's, several small permanent European American settlements had emerged in the Valley and adjacent foothill lands, including ranchos in what are now Shasta, Tehama and Butte Counties. One of these grants was the Rancho de Farwell.

From the late 17th to the early 19th century Spain, and later Mexico, fortified its claim to western North America by founding a series of missions throughout western California, beginning with the Mission San Bruno in Baja California Sur, in 1683, and completing the effort with the Mission San Francisco Solano, in Sonoma, California in 1823. With Mexico gaining independence from Spain in 1821, the newly formed government secularize the Spanish missions and thus increased its land holdings and wealth. Various Mexican governors, beginning in the 1830's, eventually parceled out these vast landholdings. Land was granted to various individuals in order to reward them for their services to the government and the military, as well to serve as an incentive to Mexicans living elsewhere to populate these newly secularized lands. In 1844, Governor Manuel Micheltorena granted Edward A. Farwell 22,194-acres, Rancho de Farwell, which was bound by the Sacramento River to the west, and Chico Creek to the north, and encompassed portions of present-day Chico.

Born in Maine, Farwell arrived in California in 1842, before becoming a Mexican citizen, and ultimately acquiring the rancho. In 1845, Farwell sold the north half of his grant to James and John Williams. Later that year, Farwell died, and having no wife or children, and being indebted to John Bidwell, the latter settled Farwell's estate by selling the southern half of the rancho to one John Potter.

With the signing of the Treaty of Guadalupe Hidalgo in 1848, the United States assumed control of Alta California, and required all Spanish and Mexican land grantees to justify the legitimacy of their claims. James Williams and the heirs of John Williams and the heirs of John Potter filed their claims to the land, in account with the Land Act of 1851. Both the Public Land Commission and the District Court confirmed (1853) and patented (1863) the grant to the Williams and the heirs of Farwell, but not to the heirs of John Potter.

John Bidwell arrived in California in 1841 as a member of the first band of Americans to cross the Sierra Nevada for the purpose of settlement (McGie 1983:33). In the spring of 1843 a party of settlers headed north for Oregon from Sutter's Fort, which included John Bidwell, Peter Lassen and James Bruheim (ibid:34). On this trip, Bidwell was clearly impressed by the beauty of the region around Chico, and on his return from Oregon, Bidwell mapped the rivers and streams and the lay of the land at Chico (ibid:34). This map later formed the basis of several of the grants made by Micheltorena, one of which was the Farwell Grant described above.

The site of Chico Landing, also known as Bidwell's Landing, is located on the Sacramento River, approximately 2 miles northwest of the present APE. This site was used as a ferry crossing and loading dock for the importation and exploration of goods used in the Chico area.

Field Methods

The entire APE was subjected to pedestrian survey, accomplished by walking parallel transects, spaced at 5 meter intervals along both sides of the entire linear APE. In searching for cultural resources, the surveyor took into account the results of background research and was alert for any unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants and other possible markers of cultural sites.

Study Findings and Conclusions

This document reports efforts to identify potential archaeological resources within the APE in support of the Ord Ferry Road Bridge Replacement at Little Chico Creek Project. Tasks undertaken to this end included conducting a records search undertaken at the Northeast Information Center of the California Historical Resources Information System, at CSU-Chico, consultation with the NAHC, consultation with interested Native American Individuals/Groups/Tribes, and an intensive pedestrian survey of the APE.

No archaeological resources were identified within or immediately adjacent to the APE, nor within 1/4-mile of the APE. The only property present within the APE is a built environment resource that is exempt from evaluation under Attachment 4 of the Section 106 PA. Specifically identified as a *Property Type 1: Minor, ubiquitous, or fragmentary infrastructure element*, this feature consists of a concrete stem wall weir/gate located a short distance southwest of the intersection of Burnham Camp Lane and Ord Ferry Road.

It seems unlikely that buried cultural materials related to prehistoric occupation are present within the APE. Although the presence of buried cultural material is always a possibility, in the present case the foregoing conclusion is based on the results of previous archaeological survey on lands in the vicinity and containing similar geomorphological characteristics. While the APE may be situated within/upon Late Holocene alluvial deposits, the floodplain associated with the fluctuating flows of Little Chico Creek remains within a low elevation setting, without any noticeably elevated ground suitable for habitation. Such suitable settings are located along elevated terraces situated west of Little Chico Creek approximately one mile southwest of the present APE. It is in this distant location where prehistoric sites have been documented. The intervening areas, including most of the APE, have been subjected to disturbance associated with agricultural activity. These disturbances have resulted in exposure of the creek bank profiles which were carefully examined during the pedestrian survey, and which did not contain any cultural material. Additionally, road construction and maintenance, which have been ongoing for nearly several decades, have not identified archaeological resources within or near the APE. Geotechnical boring was not undertaken as a component of this project, and none is foreseen. Consequently, the likelihood of encountering intact, buried, prehistoric deposits at this locale appears to be unlikely.

Other Resources

No other resources were identified during the present project.

Unidentified Cultural Materials

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that area until a qualified archaeologist can assess the significance of the find. Additional archaeological survey will be needed if project limits are extended beyond the present survey limits.

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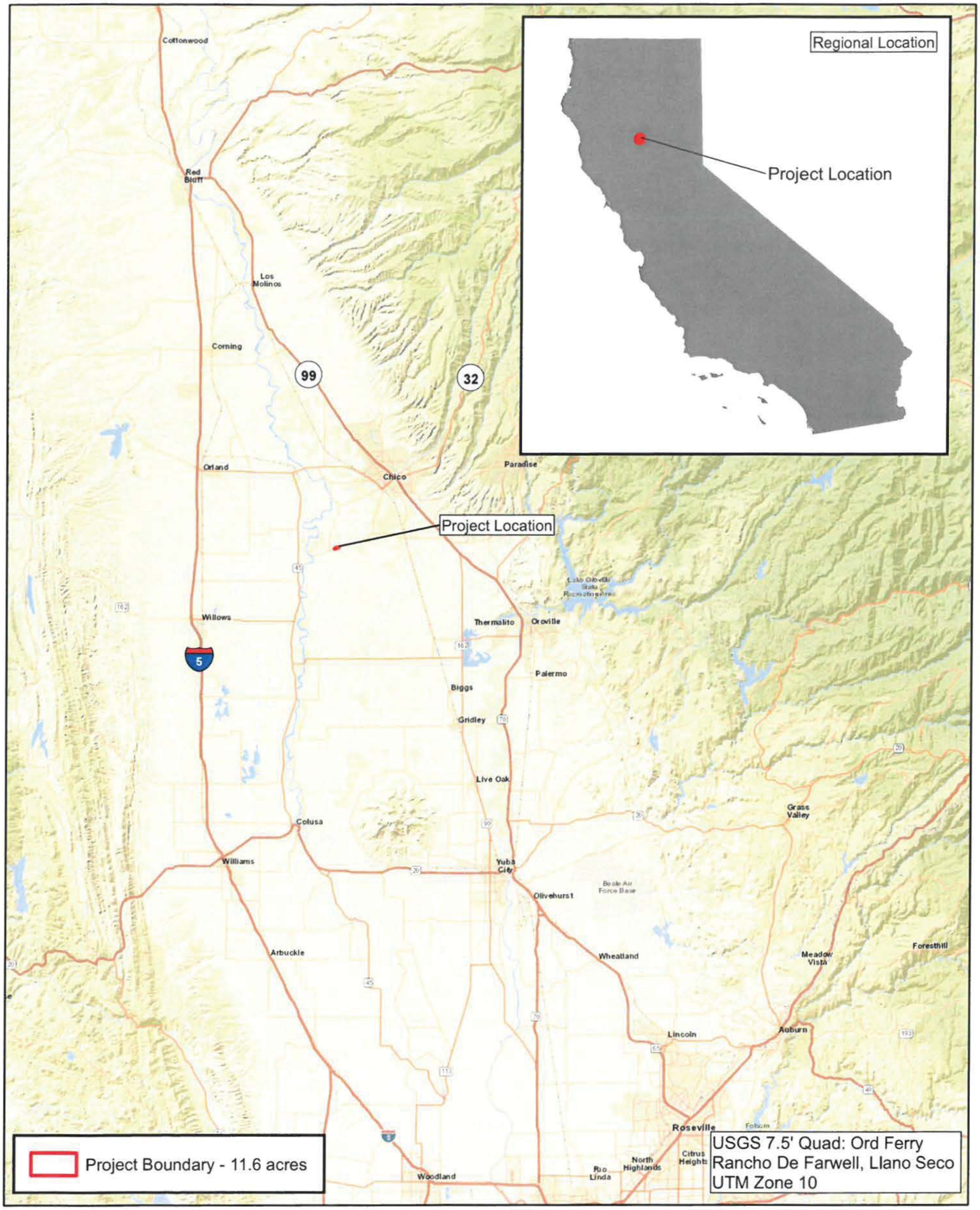
FIGURE 1



NORTH

1:812,500

0 2.5 5 Miles

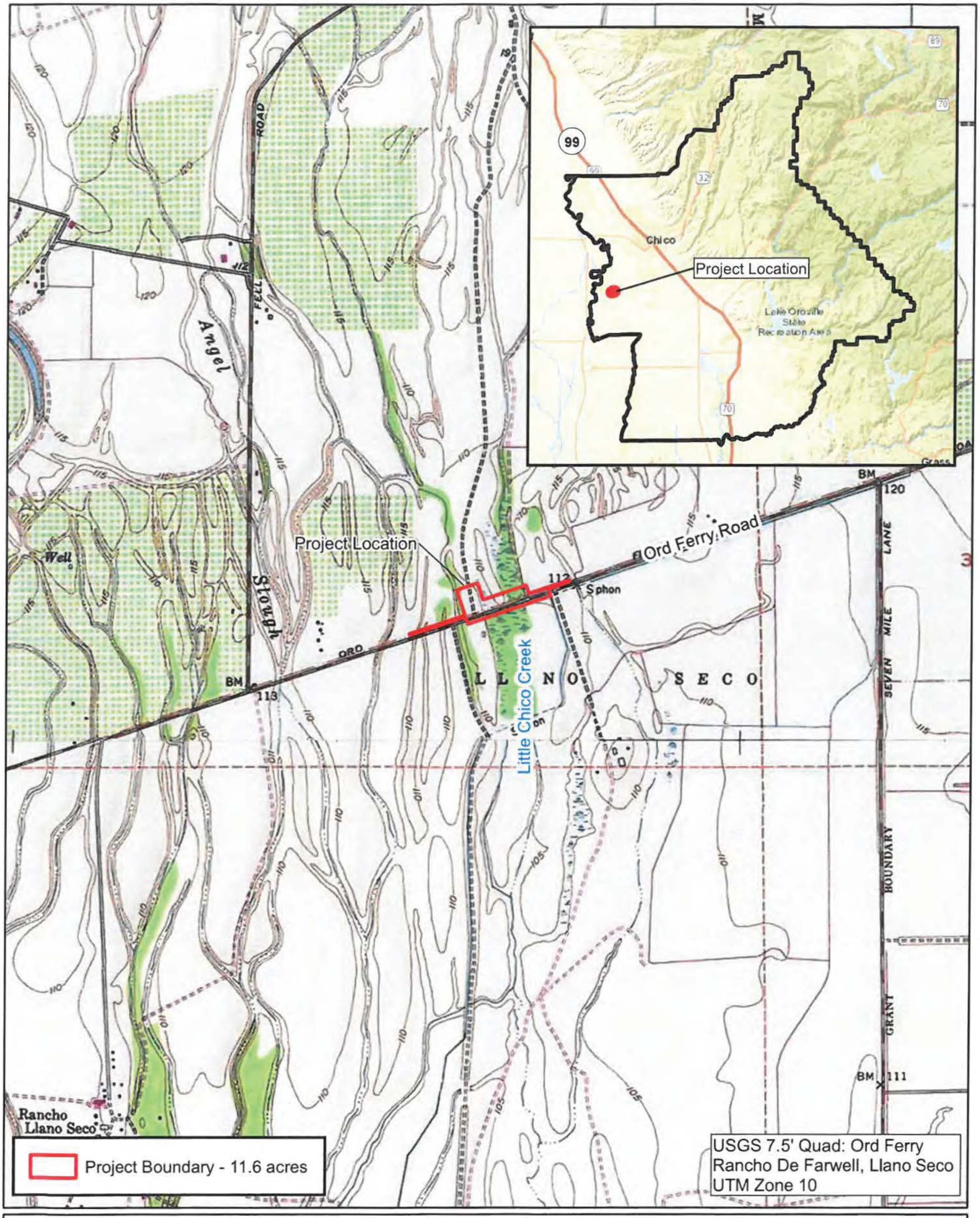
Data Sources: ESRI, Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Regional Location Map
Figure 1

gallaway ENTERPRISES

GE# 16-025 Map Date: 04/20/17

FIGURE 2



NORTH

1:24,000

0 500 1,000 Feet

Data Sources: ESRI,Butte County, USGS

Ord Ferry Road at Little Chico Creek Bridge Replacement Project
Project Location Map
Figure 2

gallaway ENTERPRISES

GE# 16-025 Map Date: 04/20/17

FIGURE 3

LOCAL AGENCY APPROVAL	CALTRANS APPROVAL	CALTRANS DATE APPROVAL	BUTTE COUNTY DEPARTMENT OF PUBLIC WORKS	ORD FERRY ROAD AT LITTLE CHICO CREEK BRLS-5912(103) BRIDGE No. 12C-0242 AREA OF POTENTIAL EFFECT MAP	SHEET 1 OF 1 SHEET
11/29/17 BUTTE COUNTY ENVIRONMENTAL REP — DATE	11/28/17 CALTRANS DISTRICT 3 PROFESSIONALLY QUALIFIED STAFF — DATE	11/28/17 DISTRICT 3 LOCAL ASSISTANCE ENGINEER — DATE	7 County Center Drive Oroville, CA 95965 Phone: (530) 538-7681 Fax: (530) 538-7171		

ATTACHMENT 1

Northeast Center of the
California Historical Resources
Information System

BUTTE
GLENN
LASSEN
MODOC
PLUMAS
SHASTA

SIERRA
SISKIYOU
SUTTER
TEHAMA
TRINITY

123 West 6th Street, Suite 100
Chico CA 95928
Phone (530) 898-6256
neinfocntr@csuchico.edu

ACCESS AGREEMENT

I.C. File #: W17-45

I, the undersigned, have been granted access to historical resources information on file at the Northeast Information Center of the California Historical Resources Information System.

SJ I understand that any CHRIS Confidential Information I receive shall not be disclosed to individuals who do not qualify for access to such information, as specified in Section III (A-E) of the CHRIS Information Center Rules of Operation Manual, or in publicly distributed documents without written consent of the Information Center Coordinator.

SJ I agree to submit historical Resource Records and Reports based in part on the CHRIS information released under this Access Agreement to the Information Center within sixty (60) calendar days of completion.

SJ I agree to pay for CHRIS services provided under this Access Agreement within sixty (60) calendar days of receipt of billing.

SJ I understand that failure to comply with this Access Agreement shall be grounds for denial of access to CHRIS Information.

Print Name: Sean Jensen Date: 3/30/17 Signature: S J

Affiliation: GENESIS SOCIETY

Address: 7053 MOLOKAI DR. City/State/Zip: PARADISE, CA 95969

Billing Address (if different):

Office#: Cell#: 530-680-6170 Email: seanjensen@comcast.net

Project Name: ORD FERRY ROAD BRIDGE

Purpose of Access: PROJECT PLANNING

County: BUTTE Township/Range/Section: RANCHO DE FARWELL

USGS 7.5' Quad: ORD FERRY

STAFF USE ONLY

Time:			
IN: 10:32	**Staff Charges:**	___ hours @ $40.00/hour	$
OUT: 11:00	**Photocopy Charges:**	20 copies @ $0.15/page	$ 3.00
Kyle Pierroz Information Center Staff	**Other:**		$
Backlog ( )	**TOTAL:**		$103.00

In-House Fees: 1 hours @ $100.00/hour $100.00

*** THIS IS NOT AN INVOICE ***

District 03

Butte County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
12C0218	DEVIL SLOUGH	0.3 MI E/O COLUSA CO LINE	5. Bridge not eligible for NRHP	1937	1958
12C0219	GRAIN SLOUGH	0.4 MI E/O COLUSA CO LINE	5. Bridge not eligible for NRHP	1939	1958
12C0220	SCHOHR DRAIN	0.6 MI E/O COLUSA CO LINE	5. Bridge not eligible for NRHP	1958	
12C0221	FEATHER RIVER	NW MNTGMRY ST IN ORVILE	5. Bridge not eligible for NRHP	1982	
12C0222	SUTTER-BUTTE CANAL	0.5 MI E/O LARKIN RD	5. Bridge not eligible for NRHP	1920	
12C0223	WYMAN RAVINE	0.2 MI E OF SH70	5. Bridge not eligible for NRHP	1935	
12C0224	WILSON CREEK	0.4 MI E DUNSTONE DR	5. Bridge not eligible for NRHP	1950	
12C0225	WILSON CREEK	1.8 MI W BANGOR HWY	5. Bridge not eligible for NRHP	1961	
12C0226	WILSON CREEK	1.0 MI W OF BANGOR HWY	5. Bridge not eligible for NRHP	1961	
12C0228	THERMALITO POWER CANAL	0.8 MI NW NELSON AVE	5. Bridge not eligible for NRHP	1965	
12C0229	FEATHER RIVER OUTLET	1 MI E/O HAMILTON RD	5. Bridge not eligible for NRHP	1966	
12C0230	EDGAR SLOUGH	JUST S NELSON RD	5. Bridge not eligible for NRHP	1965	
12C0231	KUSEL ROAD OH	1.1 MI E SH 70	5. Bridge not eligible for NRHP	1962	
12C0232	RICHVALE WEST DRAIN	0.1 KM N OF RICHVALE HWY	5. Bridge not eligible for NRHP	1996	
12C0235	WESTERN CANAL	1 MI N OF NELSON RD	5. Bridge not eligible for NRHP	1960	
12C0236	LITTLE CHICO CREEK	AT ORANGE ST	5. Bridge not eligible for NRHP	1940	1951
12C0237	SYCAMORE CREEK	0.2 MI N LASSEN AVE	5. Bridge not eligible for NRHP	1956	1992
12C0239	LAGOON CREEK	1 MI E GLENN/BUTTE CO LI	5. Bridge not eligible for NRHP	1970	
12C0240	HOGBACK DRAIN	0.5 MI W RIVER RD	5. Bridge not eligible for NRHP	1980	
12C0241	ANGEL SLOUGH	0.1 MI E OF RIVER RD	5. Bridge not eligible for NRHP	1985	
12C0242	LITTLE CHICO CREEK	1 MI EAST OF RIVER ROAD	5. Bridge not eligible for NRHP	1949	
12C0243	DURHAM MUTUAL DITCH	0.5 MI E OF ESQUON RD	5. Bridge not eligible for NRHP	1972	
12C0245	HAYES CANYON	0.8 MI E OF SH 99	5. Bridge not eligible for NRHP	1970	
12C0246	WEST BRANCH LITTLE DRY CREEK	1.5 MI E OF SH 99	5. Bridge not eligible for NRHP	1970	
12C0247	BERRY CANYON	3.1 MI EAST OF SR 99	5. Bridge not eligible for NRHP	1970	
12C0248	CLEAR CREEK	4.1 MI E OF SH 99	5. Bridge not eligible for NRHP	1970	
12C0249	HORSETHIEF CANYON	1 MI W WHEELOCK ROAD	5. Bridge not eligible for NRHP	1971	
12C0250	DRY CREEK	JUST E WHEELOCK RD	5. Bridge not eligible for NRHP	1973	
12C0251	SUTTER-BUTTE CANAL	0.9 MI E/O RTE 99	5. Bridge not eligible for NRHP	1956	
12C0252	MAIN DRAINAGE CANAL	3.91 MI N/E FROM SH 99	5. Bridge not eligible for NRHP	1938	
12C0255	MIDWAY ROAD OH	1.2MI NO DAYTON-DURHAM HY	5. Bridge not eligible for NRHP	1975	
12C0258	THERMALITO CANAL	0.4 MI NE TBLE MTN BL	5. Bridge not eligible for NRHP	1966	
12C0260	THERMALITO FOREBAY	2.1 MI W/O ST HWY 70	5. Bridge not eligible for NRHP	1968	
12C0261	CHEROKEE ROAD OH	1 MI NE TBLE MTN BL	5. Bridge not eligible for NRHP	1963	
12C0263	M & T CANAL	0.62 MI E OF RIVER ROAD	5. Bridge not eligible for NRHP	1979	
12C0264	NORTH FORK HONCUT CREEK	JUST N OF AVACADO ROAD	5. Bridge not eligible for NRHP	1930	
12C0265	WILSON CREEK	5 MI E/O ST HWY 70	5. Bridge not eligible for NRHP	1950	
12C0267	GOLD RUN CREEK	1.9 MI S E SHIPPEE RD	5. Bridge not eligible for NRHP	1955	
12C0268	DRY CREEK	0.15 MI N SHIPPEE RD	5. Bridge not eligible for NRHP	1930	1952
12C0269	DRY CREEK OVERFLOW	0.2 MI N/W SHIPPEE RD	5. Bridge not eligible for NRHP	1922	1931
12C0270	DRY CREEK OVERFLOW	0.25 MI N/W SHIPPEE RD	5. Bridge not eligible for NRHP	1955	
12C0271	WYANDOTTE CREEK	1.5 MI E/O ST HWY 70	5. Bridge not eligible for NRHP	1937	1976
12C0272	PLEASANT VALLEY DITCH	1.3 MI EAST OF ST ROUT 99	5. Bridge not eligible for NRHP	1962	