DRAFT

INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

CITY OF CONCORD BRIDGE PREVENTATIVE MAINTENANCE PROJECT

CITY OF CONCORD

CONTRA COSTA COUNTY, CALIFORNIA

LSA

August 2016

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CEQA MITIGATED NEGATIVE DECLARATION

CITY OF CONCORD BRIDGE PREVENTATIVE MAINTENANCE PROJECT

CITY OF CONCORD

CONTRA COSTA COUNTY, CALIFORNIA

Submitted to:

City of Concord
Community and Economic Development
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LSA

August 2016

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1.0 INTRODUCTION

The City of Concord (City), in conjunction with the California Department of Transportation (Caltrans), proposes to repair various bridge deficiencies at 10 bridges in the City. These bridges have been determined to require repairs under the Bridge Preventive Maintenance Program (BPMP).

Although these 10 bridges are part of a larger project that includes 17 bridges, an environmental documentation strategy has been developed to sort the bridge repairs into two categories based on the proposed work at each bridge and whether or not consultation under Section 7 of the Federal Endangered Species Act (FESA) would be required. Those bridges not requiring Section 7 consultation were documented in a Natural Environment Study (Minimal Impacts) (NES [MI]) while the remaining bridges will be documented in a Natural Environment Study (NES) and a Biological Assessment (BA). The 7 bridges not requiring Section 7 consultation were assessed under a California Environmental Quality Act (CEQA) categorical exemption since they had no impacts. This document assesses the environmental impacts of the remaining 10 bridges.

The City will serve as a lead agency for the CEQA review while Caltrans will be the lead agency for the National Environmental Policy Act (NEPA).

The project consists of a single build alternative which includes repairs which vary and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping.

Brief descriptions of the proposed repairs at each of the 10 bridges are provided below:

28C0091L – Concord Avenue over Walnut Creek – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, removal, and reconstruction of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Repairs below deck consist of repairs to spalls on the abutments and piers. Work under the bridge will be accomplished with hand tools and ladders. Staging will occur on adjacent private parking lots and access will be from trails/roadway on both ends of the bridge. Work is expected to take 25 working days to complete.

28C0091R – Concord Avenue over Walnut Creek – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, removal, and reconstruction of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include replacement of rock slope protection (RSP) at piers, replacement/repair of retaining walls, repair of concrete spalls at pier walls and abutments, and repair I-beam damage. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on adjacent private parking lots and access will be from trails/roadway on both ends of the bridge. Work is expected to take 35 working days to complete.

28C0115 – Ygnacio Valley Road over Galindo Creek – Repairs are planned above and below the bridge deck. Above deck repairs include construction of overside drain to reroute roadway surface drainage and repair of AC dike. Below deck repairs include RSP placement at upstream and downstream ends of the culvert, and coring through downstream retaining walls and tieback placement as well as repair of spalled concrete surfaces. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on the north side of the culvert and access will be from roadways on both ends of the bridge. Work is expected to take 16 working days to complete.

28C0183 – Willow Pass Road over Walnut Creek – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, repair of metal bridge railing, removal, and reconstruction of portions of the sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include RSP for erosion control, repair of spalled concrete surfaces, and rehabilitation of joints between abutment 1 and pier 4. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on adjacent private parking lots and access will be from Iron Horse bike trail on the west side of the bridge and private parking areas on the east side of the bridge. Work is expected to take 34 working days to complete.

28C0221 – Court Lane over Galindo Creek - Repairs are planned above and below the bridge deck. Above deck repairs are limited to landscaped tree removal. Below deck repairs include RSP for erosion control and repair of concreted rock below headwall. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take 12 working days to complete.

28C0222 – St. Francis Drive over Galindo Creek - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include RSP for erosion control, construction of shotcrete lagging and wing walls, and removal of concrete. Work under the bridge will be accomplished with a loader/excavator, concrete truck (parked on the bridge) with hose, and hand tools. Staging will occur on the street and access will be from the street. Work is expected to take 18 working days to complete.

28C0224 – Whitman Road over SDM Channel - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of chain link fence posts. Below deck repairs include removal of unsound concrete at spall locations and cleaning/patching areas where reinforcement is exposed. Work under the bridge will be accomplished with hand tools but will require water diversion. Work is expected to take a total of 8 working days to complete.

28C0278 – Claudia Drive over Holbrook Channel - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of portions of sidewalks that have been damaged by settlement. Below deck repairs include removal and replacement of unsound concrete on soffit and pier walls and around the utility opening. Work under the bridge will be accomplished with hand tools but will require water diversion. Work is expected to take a total of 8 working days to complete.

28C0357 – San Miguel Road over Pine Creek - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of chain link fencing. Below deck repairs include removal and replacement of the East and West parapet wall of the culvert,

removal and replacement of unsound concrete on the culvert and retaining wall, and replacement of a joint on the east side of the structure. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take a total of 16 working days to complete.

28C0361 – Concord Boulevard over Mount Diablo Creek - Repairs are planned below the bridge deck. Repairs include rock slope protection rehabilitation and placement. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take a total of 8 working days to complete.

1.1 ENVIRONMENTAL REVIEW

The City of Concord Bridge Preventative Maintenance Project by the City of Concord constitutes a "Project" in accordance with CEQA. Prior to approving the proposed Project, the City must provide environmental review in accordance with CEQA to assess the potential effects of the Project, including mitigation where necessary.

This Mitigated Negative Declaration (MND) has been prepared as the environmental documentation in anticipation of determining that all potentially significant impacts from implementing the proposed Project can be mitigated to levels less than significant. Accordingly, a Mitigated Negative Declaration is being considered to provide environmental review and clearance for the Project. Information included in this document is intended to clarify the areas of potential environmental concern, while evaluating the potential impacts of the Project on the environment.

1.2 SUMMARY INFORMATION

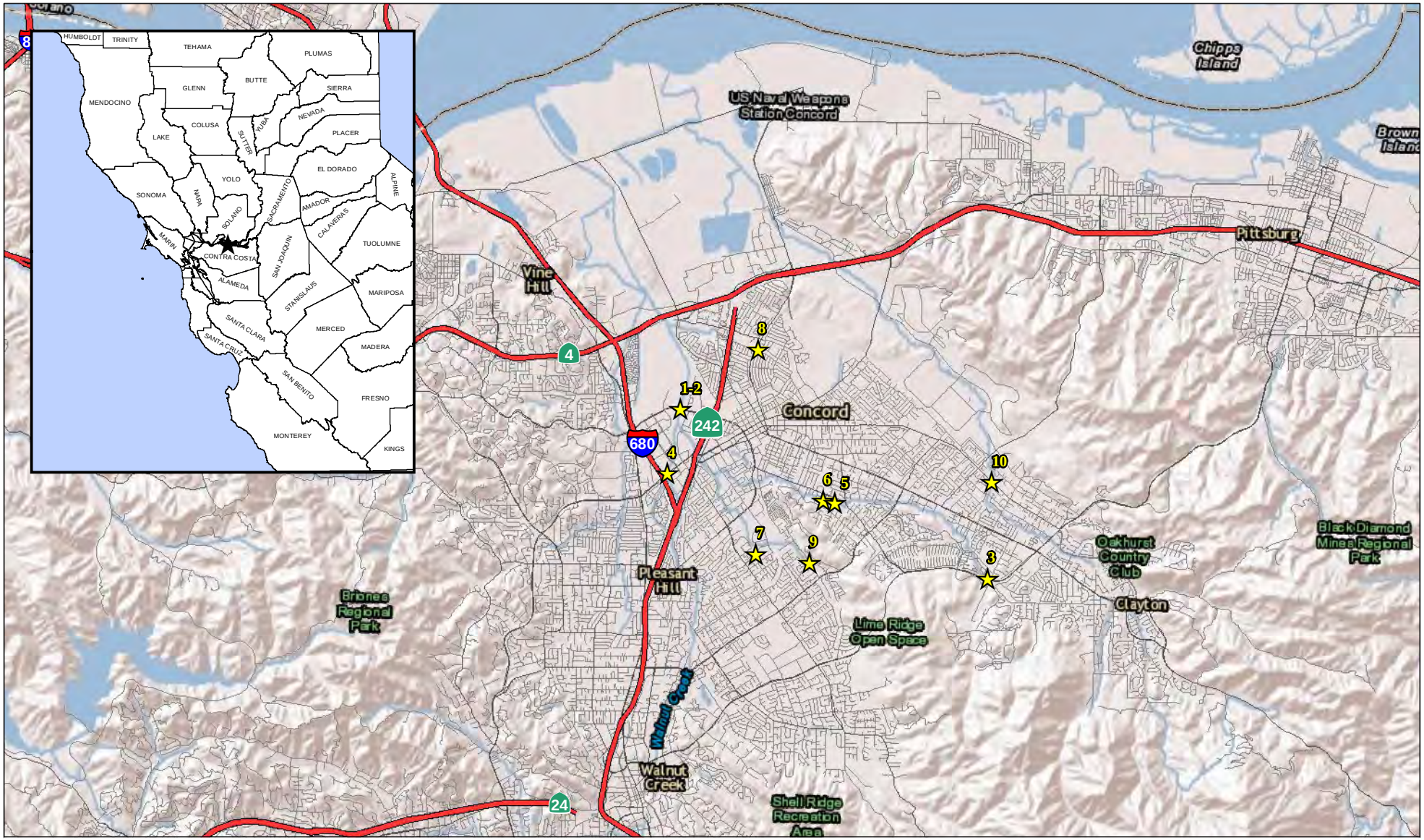
1. **Project Title:** City of Concord Bridge Preventative Maintenance Project
2. **Lead Agency Name and Address:**

   City of Concord
   Community and Economic Development
   1950 Parkside Drive, MS/40
   Concord, CA 94519
   (925) 671-3108

3. **Contact Person and Phone Number:**

   Jeff Rogers, Project Engineer
   (925) 671-3108

4. **Project Location:** The 10 bridges are located in the City of Concord in Contra Costa County. All of the bridges are located in urban locations throughout the City. **Figure 1: Regional Vicinity** shows the location of the proposed Project site on a regional scale. **Figure 2: Project Location** shows the locations of the bridges on a local scale.
5. **Project Sponsor's Name and Address:** N/A



LEGEND

★ **Bridge Locations**

1-2. Concord Ave at Walnut Creek

3. Ygnasio Valley Rd at Galindo Creek

4. Willow Pass Rd at Walnut Creek

5. Court Lane at Galindo Creek

6. Saint Francis Dr at Galindo Creek

7. Whitman Rd at SDM Channel

8 Claudia Ave at Holbrook Channel

9. San Miguel Bridge at Pine Creek

10. Concord Blvd at Mount Diablo Creek

0 1 2
MILES

SOURCE: ESRI Imagery (4/2008)

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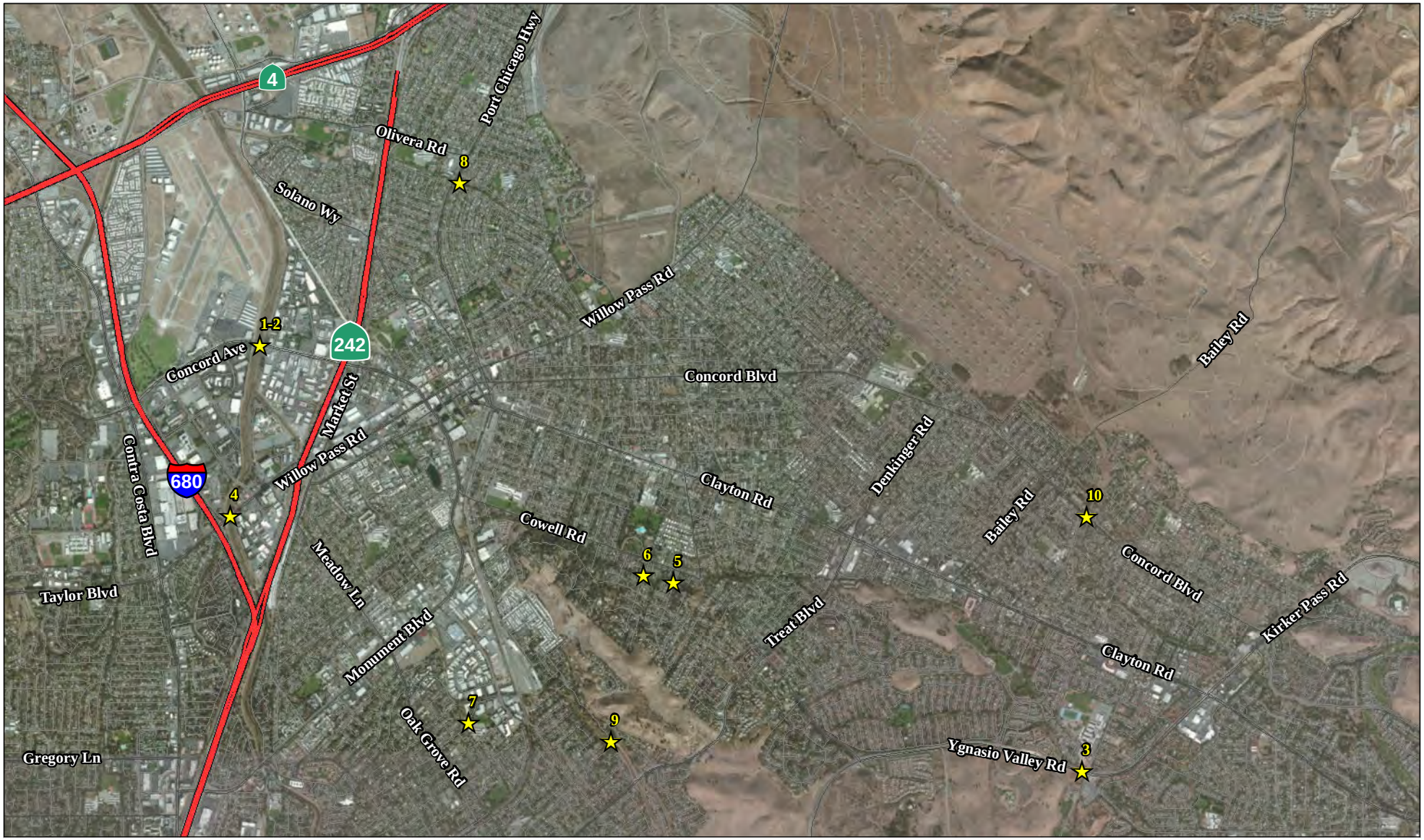
FIGURE 1

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Project Location Map



LEGEND

Bridge Locations

1-2. Concord Ave at Walnut Creek

3. Ygnasio Valley Rd at Galindo Creek

4. Willow Pass Rd at Walnut Creek

5. Court Lane at Galindo Creek

6. Saint Francis Dr at Galindo Creek

7. Whitman Rd at SDM Channel

8 Claudia Ave at Holbrook Channel

9. San Miguel Bridge at Pine Creek

10. Concord Blvd at Mount Diablo Creek

0 2000 4000
FEET

SOURCE: ESRI Aerial Imagery (5/2010)

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FIGURE 2

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Project Vicinity Map

6. **General Plan Designation:** As shown in **Table 1: General Plan Designations**, the General Plan designations differ at each Project site but are generally residential or open space.

Table 1: General Plan Designations

Bridge Project Number and Description	General Plan Designation
28C0091L – Concord Avenue over Walnut Creek	Open Space surrounded by West Concord Mixed-Use, Business Park, and Regional Commercial
28C0091R – Concord Avenue over Walnut Creek	Open Space surrounded by West Concord Mixed-Use, Business Park, and Regional Commercial
28C0115 – Ygnacio Valley Road over Galindo Creek	Public/Quasi-Public, Business Park
28C0183 – Willow Pass Road over Walnut Creek	Open Space surrounded by West Concord Mixed-Use
28C0221 – Court Lane over Galindo Creek	Low Density Residential
28C0222 – St. Francis Drive over Galindo Creek	Low Density Residential
28C0224 – Whitman Road over SDM Channel	Industrial Mixed-Use, Public/Quasi-Public, Medium Density Residential
28C0278 – Claudia Drive over Holbrook Channel	Low Density Residential
28C0357 – San Miguel Road over Pine Creek	Open Space surrounded by Low Density Residential
28C0361 – Concord Boulevard over Mount Diablo Creek	Open Space, Low Density Residential, and Medium Density Residential

Source: City of Concord 2030 General Plan, 2007.

7. **Zoning:** As shown in **Table 2: Zoning Designations**, the zoning designations differ at each Project site but are generally residential or open space.

Table 2: Zoning Designations

Bridge Project Number and Description	Zoning Designation
28C0091L – Concord Avenue over Walnut Creek	Open Space
28C0091R – Concord Avenue over Walnut Creek	Open Space
28C0115 – Ygnacio Valley Road over Galindo Creek	Industrial Business Park, Planned District, Public/Quasi-Public
28C0183 – Willow Pass Road over Walnut Creek	Open Space
28C0221 – Court Lane over Galindo Creek	Residential Single-Family (minimum lot size 10,000)
28C0222 – St. Francis Drive over Galindo Creek	Residential Single-Family (minimum lot size 10,000)
28C0224 – Whitman Road over SDM Channel	Residential Single-Family (minimum lot size 10,000), Residential Medium Density, Industrial Mixed-Use, Public/Quasi-Public
28C0278 – Claudia Drive over Holbrook Channel	Residential Single-Family (minimum lot size 6,000), Neighborhood Commercial
28C0357 – San Miguel Road over Pine Creek	Rural Residential, Open Space
28C0361 – Concord Boulevard over Mount Diablo Creek	Residential Medium Density, Residential Low Density, Open Space

Source: City of Concord Zoning Map, www.concordprospector.com, Accessed May 1, 2015.

8. **Description of Project:**

The City of Concord (City), in conjunction with the California Department of Transportation (Caltrans), proposes to repair various bridge deficiencies at 10 bridges in the City. The project consists of a single build alternative which includes repairs which vary and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping.

9. **Other Public Agencies whose Approval is Required (e.g., permits, financing approval, or participation agreement).**
   - City of Concord CEQA Approval
   - City's Planning Department (permit for tree removal)
   - United States Army Corps of Engineers (Corps) 404
   - Regional Water Quality Control Board (RWQCB) 401
   - California Department of Fish and Wildlife (CDFW) Streambed Alteration Agreement
   - National Marine Fisheries Service (NMFS) Consultation

10. **Environmental Factors Potentially Affected:**

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

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

11. **Determination.** (To be completed by the Lead Agency.)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION would 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

_____ _____
Signature Date

2.0 ENVIRONMENTAL EVALUATION

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Environmental Setting

The proposed Project is located in the City of Concord in Contra Costa County.

Concord's visual character is partially defined by its location within two flat river valleys (Ygnacio Valley and Clayton Valley, with Lime Ridge separating the two), bordered by the rolling Los Medanos Hills to the east, Mount Diablo to the southeast, and Suisun Bay to the north. From the flatland areas of Concord, views of the surrounding hills are prominent. Some of the residential neighborhoods within Concord have views of the Suisun Bay and San Francisco Bay Delta to the north of the City. Mount Diablo State Park, located to the southwest, is visible from many locations throughout the City. In addition to these scenic vistas, Concord is traversed by several creek corridors with dense vegetation and mature trees that contribute to the city's aesthetic quality. Visual connections to Suisun Bay are limited due to the historical development of military and industrial uses. Large-scale industrial and port-related facilities line the bayfront north of State Route 4, while wetlands and the tidal area of the Concord Naval Weapons Stations lie to the east. Views of the hills to the east and south create a sense of identity for city residents, local businesses, and visitors.

There are several sites where work will be occurring. The Project sites are characterized by developed areas and rights-of-ways, or ruderal grasslands and disturbed, sparsely vegetated areas. There is no natural vegetation community within this BSA; landscaped vegetation and ruderal/ruderal grassland are the only vegetation communities in the BSA.

Highway 24 in southwestern Contra Costa County is an officially designated State Scenic Highway. Highway 24 is located approximately 3 miles southwest of the City's southwestern most limit. Highway 4 in eastern Contra Costa County is an Eligible State Scenic Highway. Highway 4 (where designated as Eligible State Scenic Highway) is approximately 10 miles east of the City of Concord eastern most limit. No state scenic highways traverse the City.[1]

With the exception of landscaped vegetation, no vegetation removal will occur as a part of the project.

Discussion

a) Have a substantial adverse effect on a scenic vista?

No Impact. The proposed Project would consist of conducting maintenance on ten bridges in the City of Concord. The repairs would be completed within the footprint of the existing bridges and not detract from the visual character of the sites. The proposed Project is not located near nor would construction and operational activities alter or block views of County-designated scenic vistas. No impacts would occur.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

No Impact. The California Scenic Highway Program, maintained by the California Department of Transportation (Caltrans), protects scenic State highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. Caltrans has not designated any state scenic highways that traverse the City. Development of the proposed Project would be limited to the areas of the existing bridges. No vegetation removal beyond landscaped vegetation will occur as a part of the project. Construction and operation of the proposed Project would not substantially damage scenic resources, including trees, rock outcroppings, or historic buildings within a State scenic highway. No impacts would occur.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less than Significant Impact. Proposed bridge repairs vary greatly at each location and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping. Most of these activities would occur at the overcrossing of the existing bridge in a relatively disturbed area. Residents living around the proposed Project site would be able to see demolition and construction activities occurring; however, these activities would be confined to the creek overcrossing and would not degrade the visual characteristics of the surrounding uses. No vegetation removal will occur as a part of the project. To further ensure that the visual character and quality of the site and surrounding areas remain intact during Project construction and operational activities the following Best Management Practices (BMPs) would be implemented:

- During placement of Rock Slope Protection (RSP), native topsoil would be incorporated within the RSP above the Ordinary High Water Mark (OHWM) to provide a seeding and planting

[1] Caltrans, California Scenic Highway Mapping Program, Contra Costa County, http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm, accessed on July 15, 2014.

medium. In addition, locally-obtained willow cuttings/poles would be installed within the RSP upon completion of construction; and,

- Areas disturbed during construction shall be re-vegetated with the seed mix specified in Table A of **Mitigation Measure BIO-1**.

With implementation of these BMPs no further mitigation would be required. Impacts would be less than significant.

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

No Impact. Light pollution in most of the city is minimal, and is restricted primarily to street lighting along major arterials streets and to night-time illumination of commercial buildings, shopping centers, and industrial buildings. Existing sources of light and glare include vehicles traveling on the bridges and residential, commercial, and industrial uses surrounding the Project sites. No new light standards will be installed as part of the proposed project. Minor bridge maintenance will not generate any additional traffic. Therefore, the proposed Project would not create a new source of substantial light or glare, which would adversely impact day or nighttime views in the area. No impacts would occur.

II. AGRICULTURAL AND FORESTRY RESOURCES

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

Environmental Setting

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) produces maps and statistical data used for analyzing impacts on California's agricultural resources based on soil information documented by the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS). Agricultural land is rated by the NRCS according to soil quality and

irrigation status. The best land suited for agricultural production is designated as Prime Farmland, Unique Farmland, and Farmland of Statewide Importance and collectively these soils are known as Important Farmland. The FMMP maps are updated every two years with the use of a computer mapping system, aerial imagery, public review, and field reconnaissance. FMMP's statistical and mapping information is contiguous with modern soil surveys developed by the U.S. Department of Agriculture. The FMMP designates land into the following categories: Prime Farmland; Farmland of Statewide Importance, Unique Farmland; Farmland of Local Importance; Grazing Land; Urban and Built-Up Land; Other Land; and, Water. The following provides definitions of each of these designations:

- **Prime Farmland –** Farmland with the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date;
- **Farmland of Statewide Importance –** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date;
- **Unique Farmland –** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee;
- **Grazing Land** – Land on which the existing vegetation is suited for the grazing of livestock. This category was developed in cooperation with the California Cattleman's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities;
- **Urban and Built-Up Land –** Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes;
- **Other Land –** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped under this designation; and,
- **Water –** Perennial water bodies with an extent of at least 40 acres.

Land in the City of Concord is "Urban and Built-Up Land" and "Nonagricultural or Natural Vegetation." Maps from the FMMP were reviewed to determine if the proposed Project site was located within an area designated as Important Farmland. All of the proposed Project sites are on urban and built up land except for Bridge Number 28C0115 – Ygnacio Valley Road over Galindo Creek, which is on the border of urban and built up land and grazing land.[1]

[1] http://maps.conservation.ca.gov/ciff/ciff.html

The California Land Conservation Act, better known as the Williamson Act, has been California's premier agricultural land protection program since its enactment in 1965. The Williamson Act preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts. Private landowners voluntarily restrict their land to agricultural and compatible open-space uses under minimum 10-year rolling term contracts with local governments (local County or City). In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value. In August of 1998, the Legislature enhanced the Williamson Act with the Farmland Security Zone (FSZ) provisions. The FSZ provisions offer landowners greater property tax reduction in return for a minimal rolling contract term of 20 years. As of the 2014 estimate, approximately 14.5 million reported acres of land were enrolled under the Williamson Act in California and 43,537 acres in Contra Costa County.[1] No Williamson Act Contract Lands are located in or surrounding the proposed Project area. One Williamson Act Contracted parcel is located northeast of Mallard Reservoir, but this is far from any of the Project sites.[2]

The proposed Project sites, as indicated in **Table 3: Zoning Designations**, are not zoned for agricultural land.

Table 3: Zoning Designations

Bridge Project Number and Description	Zoning Designation
28C0091L – Concord Avenue over Walnut Creek	Open Space
28C0091R – Concord Avenue over Walnut Creek	Open Space
28C0115 – Ygnacio Valley Road over Galindo Creek	Industrial Business Park, Planned District, Public/Quasi-Public
28C0183 – Willow Pass Road over Walnut Creek	Open Space
28C0221 – Court Lane over Galindo Creek	Residential Single-Family (minimum lot size 10,000)
28C0222 – St. Francis Drive over Galindo Creek	Residential Single-Family (minimum lot size 10,000)
28C0224 – Whitman Road over SDM Channel	Residential Single-Family (minimum lot size 10,000), Residential Medium Density, Industrial Mixed-Use, Public/Quasi-Public
28C0278 – Claudia Drive over Holbrook Channel	Residential Single-Family (minimum lot size 6,000), Neighborhood Commercial
28C0357 – San Miguel Road over Pine Creek	Rural Residential, Open Space
28C0361 – Concord Boulevard over Mount Diablo Creek	Residential Medium Density, Residential Low Density, Open Space

Source: City of Concord Zoning Map, www.concordprospector.com, Accessed May 1, 2015.

The proposed Project site is not designated as forestland or timberland, and there are no areas around or near the proposed Project site with such designations.

[1] California Department of Conservation, The California Land Conservation Act 2014 Status Report, The Williamson Act, March 2015, pg. 34.
http://www.conservation.ca.gov/dlrp/lca/stats_reports/Documents/2014%20LCA%20Status%20Report_March_2015.pdf

[2] http://www.co.contra-costa.ca.us/DocumentCenter/Home/View/882

Discussion

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 a non-agricultural use?

No Impact. The Project sites are not located on or near Important Farmland. Thus no impact would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project sites are not located on or near Williamson Act contract lands. As shown above, the Project sites are not zoned for agricultural use. Thus no impact would occur.

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))?

No Impact. The Project sites are not designated as forestland or timberland and there are no areas around or near the proposed Project site with such designations.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed Project site is not located in an area designated as forestland under the zoning code or general plan of the City of Concord. Therefore, implementation of the proposed Project would not result in the loss of forestland or conversion of forestland to non-forestland uses. No impacts would occur.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The proposed Project is not located on or near any Important Farmland, Williamson Act Contract parcels, agriculturally-zoned parcels, forestland or timberland, or any site used for agriculture. The Project consists of relatively minor bridge maintenance and repairs. Implementation of the proposed Project would not convert any parcels from active agricultural land or forest land to non-agricultural land.

III. AIR QUALITY

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

Environmental Setting

Air quality is a function of both local climate and local sources of air pollution. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

There are four categories of air pollutants: ground level ozone and its key precursors, ROG and NOx; particulate matter; air toxics; and greenhouse gases.

State and Federal Standards

Air quality monitoring stations are located throughout the nation and maintained by the local air districts and state air quality regulating agencies. Data collected at permanent monitoring stations are used by the EPA to identify regions as "attainment" or "nonattainment" depending on whether the regions meet the requirements stated in the previous National Air Quality Standards (NAAQS). Nonattainment areas are imposed with additional restrictions as required by the EPA. The classifications are used as a foundation to create air quality management strategies to improve air quality and comply with the NAAQS.

Ozone levels exceeded the federal 8-hour standards twice in 2012 and 2014, and the state 8-hour standards five times between 2012 and 2014; there were no exceedances in 2013 at the Concord air quality monitoring station. $PM_{2.5}$ and PM_{10} levels exceeded the federal 24-hour standards one time between 2012 and 2014 at the Concord air quality monitoring station. Furthermore, no exceedances

of the State or federal carbon monoxide (CO) standards have been recorded at the monitoring stations during the 3-year period.

The Bay Area is an unclassified area for the federal PM_{10} standard and a nonattainment area at the State level. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status. The Bay Area is currently considered an attainment area for State and federal CO standards[1].

The status for each of the criteria pollutants for Contra Costa County are summarized in **Table 4: SFBAAB Air Quality Attainment Status for Contra Costa County (2012)**.

Table 4: SFBAAB Air Quality Attainment Status for Contra Costa County (2012)

Pollutant	State	Federal
Ozone (1 hour)	Serious/Nonattainment	No Federal Regulation
Ozone (8 hour)	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Lead	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Attainment
Sulfates	Attainment	No Federal Regulation
Hydrogen Sulfide	Unclassified	No Federal Regulation

Source: California Air Resources Board, 2012. Area Designations. http://www.arb.ca.gov/desig/desig.htm. Accessed February 26, 2014.

Bay Area Air Quality Management District (BAAQMD)

The proposed project is located in Contra Costa County within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen substantially. In the City of Concord and the rest of the air basin, exceedances of air quality standards occur primarily during meteorological conditions conductive to high pollutant levels, such as cold, windless winter nights or hot, sunny summer afternoons.

BAAQMD Thresholds

In June 2010, BAAQMD adopted updated draft California Environmental Quality Act (CEQA) Air Quality Guidelines and finalized them in May 2011.[2] These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In late 2010, the Building Industry Association filed a lawsuit in Alameda Superior Court, challenging BAAQMD's CEQA Guidelines on the grounds that the agency did not comply with CEQA. On March 5, 2012, the Alameda County Superior Court issued a judgment finding that the BAAQMD had failed to comply with CEQA when it adopted the thresholds of significance in the

[1] California Air Resources Board, 2015.

[2] BAAQMD, 2011. *CEQA Quality Guidelines*. May.

BAAQMD *CEQA Air Quality Guidelines*. The court did not determine whether the thresholds of significance were valid on their merits, but found that the adoption of the thresholds was a project under CEQA. The court issued a writ of mandate ordering the BAAQMD to set aside the thresholds and cease dissemination of them until the BAAQMD complied with CEQA. In May of 2012, the BAAQMD filed an appeal of the court's decision. In August of 2013 the First District Court of Appeal overturned the trial court and held that the thresholds of significance were not subject to CEQA review. The BAAQMD has not reinstated the 2011 Guidelines; however, the County notes that the Alameda County Superior Court, in ordering BAAQMD to set aside the thresholds, did not address the merits of the science or evidence supporting the thresholds. The City finds that, despite the court ruling, the science and reasoning contained in the BAAQMD 2011 *CEQA Air Quality Guidelines* provide the latest state-of-the-art guidance available. For that reason, substantial evidence supports continued use of the BAAQMD 2011 *CEQA Air Quality Guidelines*. The City has therefore incorporated them into this Initial Study for purposes of identifying significant air quality impacts.

The BAAQMD has established construction significance criteria of an average of 54 pounds per day of ROG, NO_x, and $PM_{2.5,}$ and 82 pounds per day of PM_{10} exhaust emissions for the construction period. The BAAQMD also requires implementation of their Basic Construction Mitigation Measures to reduce fugitive dust emissions to a less than significant level.

Bay Area 2010 Clean Air Plan

An air quality plan describes air pollution strategies to be implemented by a city, county, or region classified as a nonattainment area. The main purpose of air quality plans is to bring the area into compliance with the requirements of Federal and state air quality standards. The air quality plans use the assumptions and projections of local planning agencies to determine control strategies for regional compliance status. Since the plans are based on local General Plans (i.e., City of Concord General Plan), projects that are deemed consistent with applicable General Plans are usually found to be consistent with the air quality plans.

The Bay Area 2010 Clean Air Plan is the applicable air quality plan for the proposed Project area. The Bay Area 2010 Clean Air Plan was adopted on September 15, 20101 and is an update to the 2005 Bay Area Ozone Attainment Strategy. Numerous strategies are set forth in the Bay Area 2010 Clean Air Plan to reduce four categories of air pollutants: ground level ozone and its key precursors, ROG and NO_x; particulate matter; air toxics; and greenhouse gases. Consistency with the Clean Air Plan can be determined if the project: 1) supports the goals of the Clean Air Plan; 2) includes applicable control measures from the Clean Air Plan; and 3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan. A project is deemed inconsistent with the Bay Area 2010 Clean Air Plan if it results in population or development growth that exceeds the estimates accounted for in the plan, thereby generating additional emissions.

Project Construction

Air pollutant emissions associated with construction of the proposed Project would occur over the short-term. Construction vehicle traffic, the use of construction equipment, and wind blowing over exposed earth would emit exhaust and dust that affect local and regional air quality.

<u>Discussion</u>

[1] Bay Area Air Quality Management District, 2010. Bay Area 2010 Clean Air Plan. September 15.

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The Bay Area 2010 Clean Air Plan is the current control strategy to reduce ozone, particulate matter (PM), air toxins, and greenhouse gases (GHGs) for the City of Concord. The 2010 Clean Air Plan was based on the ABAG population and employment projections for the San Francisco Bay Area, including growth that would be accommodated under the City's General Plan. The BAAQMD monitors air quality at several locations in the San Francisco Bay Air Basin. Historically, problematic criteria pollutants in urbanized areas include ozone, particulate matter, and carbon monoxide. Combustion of fuels and motor vehicle emissions are a major source of each of these three criteria pollutants. Concord is within the San Francisco Bay Area Air Ozone non-attainment area as delineated by the USEPA.

As the proposed Project is a series of bridge repairs and preventative maintenance, it would not result in the generation of additional vehicle trips and is not expected to increase regional Vehicle Miles Traveled (VMT). The Clean Air Plan's control measures would not apply to the Project. The Project involves minimal construction and would not substantially increase air pollution or hinder the Clean Air Plan's strategies for bringing the area into compliance. As such, the proposed Project would not conflict with or obstruct implementation of the Clean Air Plan. Impacts would be less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less Than Significant With Mitigation Incorporated. Municipal Code Chapter 86 Article III (Grading, Erosion, and Sedimentation Control) establishes construction management requirements related to air quality issues as part of the grading permit.

Short Term (Construction) Emissions. Short-term air pollutant emissions associated with the proposed Project would occur in association with construction activities such as vehicle and equipment use. Proposed bridge repairs vary greatly at each location and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping. Vehicle / equipment use would contribute to short-term air pollution emissions.

Construction activities at the Project site would generate exhaust emissions from engines, on-site heavy duty construction vehicles, equipment hauling materials to and from the site, and motor vehicles transporting construction crews. Exhaust emissions during construction would vary daily as construction activity levels change. The project would require the operation of approximately 2-3 pieces of equipment at any given time during the construction period. The use of construction equipment would result in localized exhaust emissions that could affect the residential units surrounding the Project site.

Fugitive dust emissions are associated with excavation, land clearing, exposure, and cut-and-fill operations. Construction activities at the Project site would include the use of construction vehicles and equipment which would increase air pollutants associated with burning fossil fuel and dust on a short-term basis (a three month period). Dust generated daily during construction would vary substantially, depending on the level of activity, the specific operations, and weather condition. Blowing dust, from on-site construction activities, can contribute to increased PM_{10} and $PM_{2.5}$

concentrations in the immediate project vicinity. Construction activities on the proposed Project site have the potential to contribute to the District's existing state nonattainment status for particulate air quality, contributing slight increases to $PM_{2.5}$ and Ozone. However, due to the limited extent of development proposed, the projected short-term emissions of criteria pollutants as a result of Project construction are expected to be below emissions thresholds set forth by the BAAQMD.

However, the Project will comply with BAAQMD specific measures for dust control related to construction projects. These measures are intended to reduce PM_{10} and $PM_{2.5}$ fugitive dust emissions to less than significant levels during the construction period.

Implementation of the BAAQMD's Basic Construction Mitigation Measures, as described in **Mitigation Measure AIR-1** below, would reduce this short-term construction period air quality impact to a less than significant level.

> **Mitigation Measure AIR-1:** The following construction practices shall be implemented at the project site during construction of the project:
>
> 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
> 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
> 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
> 4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
> 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
> 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
> 7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
> 8. The contractor shall post a publicly visible sign with the telephone number and person to contact at the City of Concord regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

With the implementation of **Mitigation Measure AIR-1**, short-term construction-related dust and air pollutant emission levels would be reduced and short-term impacts would be less than significant.

Long-Term (Operational) Emissions. Operational air emission impacts are associated with any change in permanent use of the Project site by on-site stationary and off-site mobile sources that

substantially increase vehicle trip emissions. No stationary sources are associated with the proposed Project and new vehicle trips would not be generated or significantly increase VMT. Once completed, the proposed project would not generate significant vehicle or other emissions. It is not anticipated that these improvements would increase vehicular emissions in the Project areas and the surrounding uses in excess of current projected growth. Therefore, operational activities associated with the proposed Project would not contribute substantially to an existing or projected air quality violation. Operational impacts would be less than significant.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?

Less Than Significant Impact. As described above in Section III(b), the proposed Project could result in temporary increases in air pollutant emissions due to construction activities. The proposed Project would not result in increased air pollutant emissions during its operation. Increases of temporary air pollutant emissions would not result in a cumulatively considerable net increase of criteria pollutants for which the Project region is in nonattainment status for federal or state ambient air quality standards. Implementation of the best management practices described above, would further reduce temporary (construction) impacts regarding air quality issues to a less than significant level.

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. Sensitive receptors are facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as young children, the elderly, and people with illnesses. Construction activities occurring on the Project site may expose these residents to airborne particulates and fugitive dust, as well as a small quantity of pollutants associated with the use of construction equipment (e.g., diesel-fueled vehicles and equipment) on a short-term basis. Implementation of the best management practices shown above would reduce construction-related emissions, thus further minimizing possible exposure of these sensitive receptors to substantial pollutant concentrations. As discussed in Section III(b), the proposed Project would not result in increased pollutant emissions during operation since its implementation would not increase traffic. Therefore, the nearby sensitive receptors would not be exposed to substantial pollutant emissions during Project operation. Impacts would be less than significant.

e) Create objectionable odors affecting a substantial number of people?

Less Than Significant Impact. Odors are also an important element of local air quality conditions. Specific activities allowed within each land use category can raise concerns related to odors on the part of nearby neighbors. Major sources of odors include restaurants and wastewater treatment plants. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceeds regulatory thresholds.

The BAAQMD CEQA Guidelines (BAAQMD, 2012) lists potential odor sources that could cause significant environmental impacts. The proposed Project would include bridge improvements and is not included on the list. Some objectionable odors could be generated from the operation of diesel-powered construction equipment during the project construction period. In addition, odors from construction equipment and vehicles on the Project site would be dispersed quickly and would not likely subject the adjacent residential units to objectionable odors. These odors would be short-term in nature and would not result in permanent impacts to sensitive receptors in the vicinity of the

project site. Implementation of the proposed project would not create objectionable odors affecting a substantial number of people. Impacts would be less than significant.

IV. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

A Natural Environment Study (see Appendix A) was prepared for the proposed Project and approved in March 2015. The following summarizes the setting and methods used to determine the biological impacts with implementation of the proposed Project. Results from the analysis in the NES were used in addressing the impacts and developing mitigation measures.

For purposes of the biological analysis, a Biological Study Area (BSA) was established. The Biological Study Area (BSA) at each bridge includes the project footprint, all access and staging areas, and lands beyond the footprint to the edge of the road right-of-way that could potentially be

affected by project construction and/or were determined necessary to inventory in order to perform an adequate analysis of project impacts. The majority of the BSA at each bridge is either developed or consists of ruderal grasslands and disturbed, sparsely vegetated areas. The only natural communities within the BSA are associated with the channels below some of the bridge crossings and include annual brome grassland, black willow riparian, Valley oak riparian, and cattail marsh.

1. **28C0091L** – *Concord Avenue over Walnut Creek* – The BSA at this bridge is located within the central portion of the City in an urbanized area. Surrounding lands consist of urbanized commercial and industrial areas, including the Buchanan Field Airport. Developed areas in within this BSA consist of the Concord Avenue Bridge and bridge approaches. The only natural communities that occur in this BSA is annual brome grassland and open water.

2. **28C0091R** – *Concord Avenue over Walnut Creek* – The BSA at this bridge is incorporated into the BSA for bridge 28C0091L above, as these two bridges constitute both directions of traffic along Diamond Boulevard over Walnut Creek.

3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – The BSA at this bridge is located in the far eastern part of the City in a developed area. The area surrounding the project site consists of urban residential and commercial development, with the exception of a vacant lot southeast of the bridge. Natural communities that occur within the BSA are limited to the annual brome grassland and black willow thicket associated with Galindo Creek.

4. **28C0183** – *Willow Pass Road over Walnut Creek* - The BSA at this bridge is located in the central part of the City in an urbanized commercial area. Surrounding areas consist of commercial development and a freeway. Natural communities within the BSA are annual brome grassland, cattail marsh and open water.

5. **28C0221** – *Court Lane over Galindo Creek* - The BSA at this bridge is located in the eastern part of the City in a developed residential area. There is no natural vegetation community within this BSA; landscaped vegetation and ruderal/ruderal grassland are the only vegetation communities in the BSA.

6. **28C0222** – *St. Francis Drive over Galindo Creek* – The BSA at this bridge is located in the eastern part of the City in a developed residential area. The only vegetation communities that occur within the BSA are landscape vegetation and ruderal/ruderal grassland.

7. **28C0224** – *Whitman Road over SDM Channel* – The BSA at this bridge is located in the southern part of the City in an urban residential area. The natural communities that occur within the BSA consist of cattail marsh, ruderal/ruderal grassland, and open water.

8. **28C0278** – *Claudia Drive over Holbrook Channel* – The BSA at this bridge is located in the northern part of the City in an urban residential area. Vegetation communities that occur within this area include ruderal/ruderal grassland and landscaped vegetation from the neighboring residences.

9. **28C0357** – *San Miguel Road over Pine Creek* – The BSA at this bridge is located in the southern part of the City in a developed residential area. Developed features within the BSA include the San Miguel Bridge, bridge approaches and the Contra Costa Canal Trail. The vegetation within BSA includes landscaped vegetation and cattail marsh.

10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – The BSA at this bridge is located in the far eastern part of the City in an urban residential area. Vegetation communities

that occur within the BSA include Valley oak riparian associated with Mount Diablo Creek and ruderal/ruderal grasslands.

A list of sensitive wildlife and plant species potentially occurring within the BSA was compiled to evaluate potential impacts resulting from Project construction. Sources used to compile the list include the California Natural Diversity Data Base (CNDDB), the U.S. Fish and Wildlife Service (USFWS) online special status species list, and the California Native Plant Society (CNPS) Online Edition. The species list obtained from the CNDDB, CNPS, and USFWS were reviewed to determine which species could potentially occur in the Project area.

Special status wildlife species that may occur in the BSA, or in the vicinity, include several bat species, San Joaquin pocket mouse (*Perognathus inornatus*), Cooper's hawk (*Accipiter cooperii*), tricolored blackbird (*Agelaius tricolor*), short-eared owl (*Asio flammeus),* Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), Pacific pond turtle (*Emys marmorata*), California red-legged frog (*Rana draytonii*) (CRLF), and central California coast steelhead (*Oncorhynchus mykiss*) (CCC steelhead). Nesting birds may also be present in the Valley oak woodland and riparian communities adjacent to the BSA. No special status plants are expected to occur in the BSA.

Wildlife movement corridors are linear habitats that function to connect two or more areas of significant wildlife habitat. These corridors may function on a local level as links between small habitat patches (e.g., streams in urban settings) or may provide critical connections between regionally significant habitats (e.g., deer movement corridors). The creeks may provide potential corridors for smaller species of wildlife.

Aquatic resources within the BSA include the SDM Channel, Walnut Creek, Mount Diablo Creek, Pine Creek, Holbrook Creek, and Galindo Creek.

The NES documented the environmental conditions around the Project site and included field surveys for vegetation mapping and jurisdictional waters delineation conducted by Mike Trueblood, Biologist of LSA Associates, Inc., on April 13-14 and July 17, 2011.

Discussion

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. As described above no state or federally listed or proposed plant species occur in the BSA; therefore, none would be affected by implementation of the proposed Project. The proposed Project has the potential to affect several state and federally listed or proposed animal species occurring within the BSA. Impacts to these special status species are described below.

Bats. Three species of bats may be present in the BSA, the pallid bat (*Antrozous pallidus*) and the western red bat (*Lasiurus blossevillii*), both are State species of concern, and the hoary bat (*Lasiurus cinereus*), a State special species. None of these species have federal status.

Bats are nocturnal and are found in a variety of habitats. Many species forage over water; some also hunt over shrubs or meadows, within trees, and along forest edges. Some species have separate roosts for day, night, maternal, and hibernation use, whereas some species may use the same roost for more than one purpose. Bats roost in a variety of crevices, cavities, and protected sites; roosting sites may

include bridges, buildings, cliff crevices, caves, mines, and trees. Multiple species often roost together.

There are 11 occurrences for the pallid bat within the search area. The closest occurrence, dated 1942, is located approximately 1.5 mi northwest of Bridge 28C0361 and 1.3 mi northeast of Bridge 28C0221. The open water, annual brome grassland, and cattail marsh provides suitable foraging habitat for this species. Potential day roosts may be observed in tree hollows in the Valley oak woodland within the BSA. Potential night roost habitat for the pallid bat is present at all 10 bridges.

There is only one occurrence of the western red bat in the search area. Dated 2004, this occurrence is located approximately 9 mi east of the BSA. The Valley oak woodland provides suitable day roost habitat. The open water, annual brome grassland, and cattail marsh provides suitable foraging habitat for this species. Potential night roost habitat for the western red bat is present at all 10 bridges.

The closest documented occurrence for the hoary bat is located in the center of the BSA, approximately 1 mi northwest of Bridge 28C0222. The Valley oak woodland around Bridge 28C0361 provides suitable day roost habitat. The open water, annual brome grassland, and cattail marsh provides suitable foraging habitat. Potential night roost habitat for the hoary bat is present at all 10 bridges.

The project will result in permanent impacts to Valley oak woodland, totaling 0.002 ac, at bridge No. 28C0361 over Mount Diablo Creek.

Because no trees will be removed at Bridge No. 28C0361 there will be no permanent impacts to bat roosting habitat. No bat roosting habitat exists within the Project area of Bridge No. 28C0221, where landscaped tree removal will occur. As such, there will be no temporary impacts to bat roosting habitat.

The project will result in permanent and temporary impacts to foraging habitat for the bats. **Table 5: Impacts to Bat Foraging Habitat (acres)** shows impacts to the annual brome grassland, cattail marsh and open water.

Table 5: Impacts to Bat Foraging Habitat (acres)

Bridge No.	Annual Brome Grassland		Cattail Marsh		Open Water	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
28C0091L	0.005	0.08	0	0	0	0
28C0091R						
28C0115	0.013	0.012	0	0	0	0
28C0183	0	0.153	0	0.055	0	0.076
28C0221	0	0	0	0	0	0
28C0222	0	0	0	0	0	0
28C0224	0	0	0	0.1	0	0.005
28C0278	0	0	0	0	0	0
28C0357	0	0	0	0.04	0	0

28C0361	0	0	0	0	0	0
Total	**0.018**	**0.245**	**0**	**0.195**	**0**	**0.081**

There is an abundance of similar habitat available for these species in the region, and the small amount of habitat that would be removed within implementation of the proposed Project would not substantially impact these species. The following mitigation measure would be implemented:

Mitigation Measure BIO-1: The following measures shall be implemented to reduce any potential impacts to foraging bats:

9. Construction activities that could affect roosting bats, as determined by a qualified biologist, will be conducted during daylight hours to avoid disturbing bats potentially utilizing the bridge structure or trees at night.
10. Following completion of the new bridge, all fill slopes, temporary impact and/or otherwise disturbed areas shall be revegetated with the seed mix specified in Table A. Invasive exotic plants will be controlled to the maximum extent practicable.

Table A: Native Seed Mix

Scientific Name	Common Name	Rate (Lbs./Acre)	Minimum Percent Germination
Artemisia douglasiana	Mugwort	2.0	50
Baccharis pilularis	Coyote brush	1.0	40
Elymus X triticum	Regreen	10.0	80
Eschscholzia californica	California poppy	2.0	70
Lupinus bicolor	Bicolored lupine	4.0	80

Implementation of **Mitigation Measure BIO-1**, presented above, would reduce potential impacts to the bat species occurring in the Project area. Impacts would be less than significant.

Cooper's Hawk. Cooper's hawks (*Accipiter cooperii*) are on the State watch list for nesting, but have no other formal status. In California, they are primarily year-long residents, and are found throughout most of the wooded portion of the State.

Cooper's hawks favor riparian areas and those near open water for nesting, and often use broken woodlands and habitat edges for hunting. Cooper's hawks are aerial specialists that primarily catch birds in flight. Prey may be chased through trees and thickets, or snatched from a perch. These hawks build stick nests in dense stands of live oak, riparian deciduous forest, and occasionally coniferous forest, usually near a stream. Birds are monogamous. Breeding season is March through August, with peak activity May through July. Young are dependent on adults for 30 – 40 days after fledging.

There are two CNDDB results within the search area for this species. The closest occurrence, dated 1999, is located approximately 9.5 mi west of Bridge 28C0091 L/R.

The Valley oak woodland, at Bridge 28C0361, and landscape habitat, at Bridges 28C0278 and 28C0224 provides suitable nesting habitat for this species. The black willow thicket, ruderal/ruderal grassland, and annual brome grasslands throughout the BSA provide suitable foraging habitat.

The project will result in permanent and temporary impacts to nesting habitat for the Cooper's hawk, as shown in **Table 6: Impacts to Cooper's Hawk Nesting Habitat (acres)**.

Table 6: Impacts to Cooper's Hawk Nesting Habitat (acres)

Bridge No.	Valley Oak Woodland		Landscape	
	Permanent	Temporary	Permanent	Temporary
28C0091L	0.00	0.00	0.00	0.00
28C0091R				
28C0115	0.00	0.00	0.00	0.00
28C0183	0.00	0.00	0.00	0.00
28C0221	0.00	0.00	0.03	0.00
28C0222	0.00	0.00	0.00	0.013
28C0224	0.00	0.00	0.00	0.00
28C0278	0.00	0.00	0.00	0.003
28C0357	0.00	0.00	0.00	0.007
28C0361	0.002	0.00	0.00	0.00
Total	**0.002**	**0.00**	**0.03**	**0.023**

Permanent and temporary impacts will occur to foraging habitat as a result of disturbance to black willow thicket, ruderal/ruderal grassland, and annual brome grassland, as shown in **Table 7: Impacts to Foraging Habitat for Coopers Hawk.**

Table 7: Impacts to Foraging Habitat for Coopers Hawk

Bridge No.	Annual Brome Grassland		Black Willow Thicket		Ruderal/Ruderal Grassland	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
28C0091L	0.005	0.080	0.00	0.00	0.00	0.00
28C0091R						
28C0115	0.013	0.012	0.019	0.013	0.00	0.00
28C0183	0.00	0.153	0.00	0.00	0.00	0.00
28C0221	0.00	0.00	0.00	0.00	0.001	0.00
28C0222	0.00	0.00	0.00	0.00	0.00	0.016
28C0224	0.00	0.00	0.00	0.00	0.00	0.004
28C0278	0.00	0.00	0.00	0.00	0.00	0.007
28C0357	0.00	0.00	0.00	0.00	0.00	0.00
28C0361	0.00	0.00	0.00	0.00	0.008	0.006
Total	**0.018**	**0.245**	**0.019**	**0.013**	**0.009**	**0.033**

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The following mitigation measure would be implemented.

Mitigation Measure BIO-2: The following measures shall be implemented to reduce potential impacts to Cooper's hawks:

1. If possible, all trees that will be impacted by project construction shall be removed during the non-nesting season (between September 16 and February 1), to avoid take of a nest or bird. If this is not possible, a survey for nesting

Cooper's hawks shall be conducted in the BSA and within a 500 ft radius by a qualified biologist. The survey shall be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

2. If nesting Cooper's hawks are found within 500 ft of the BSA, a qualified biologist shall evaluate the potential for the proposed project to disturb nesting activities. The evaluation criteria shall include, but are not limited to, the location/orientation of the nest in the nest tree, the distance of the nest from the BSA, and line of sight between the nest and the BSA.
3. CDFW and Caltrans shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.
4. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.
5. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A. Invasive exotic plants will be controlled to the maximum extent practicable.

Implementation of **Mitigation Measure BIO-2** would reduce potential impacts to Cooper's hawk in the area of the proposed Project. Impacts would be less than significant.

Tricolored Blackbird. The tricolored blackbird (*Agelaius tricolor*) is a California Species of Concern and a USFWS Migratory Non-game Bird of Management Concern.

Tricolored blackbirds are highly colonial, gregarious in all seasons, and nomadic in fall. They are largely endemic to the lowlands of California, and prefer to nest in freshwater marshes with dense growths of herbaceous vegetation, such as mustard, blackberry, and thistle. Willow and cottonwood riparian areas are also used for nesting. A nesting area must be large enough to support a minimum colony of about 50 pairs. They feed in flocks even when breeding; foraging in grassy fields, crops, flooded areas and edges of ponds, and eating insects, seeds, and cultivated grains.

There are seven CNDDB occurrences in the search area. The closest location, dated 1980, is located approximately 3.8 mi northwest of the BSA.

The black willow thicket at the Bridge 28C0115 provides suitable nesting habitat for this species. The annual brome grassland, ruderal grassland and cattail marsh throughout the BSA provides suitable foraging habitat.

The proposed project will result in impacts to tricolored blackbird nesting habitat at Bridge 28C0115 over Galindo Creek. Permanent impacts, totaling 0.019 ac, will occur as a result of placement of RSP and temporary impacts, totaling 0.013 ac, will occur as a result of project staging and access.

The annual brome grassland, ruderal/ruderal grassland and cattail marsh provide suitable foraging habitat for tricolored blackbirds. Temporary and permanent impacts are shown in **Table 8: Impacts to Tricolored Blackbird Foraging Habitat (acres)**.

Table 8: Impacts to Tricolored Blackbird Foraging Habitat (acres)

Bridge No.	Annual Brome Grassland		Ruderal/Ruderal Grassland		Cattail Marsh	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00	0.00	0.00
28C0115	0.013	0.012	0.00	0.00	0.00	0.00
28C0183	0.00	0.153	0.00	0.00	0.00	0.055
28C0221	0.00	0.00	0.001	0.00	0.00	0.00
28C0222	0.00	0.00	0.00	0.016	0.00	0.00
28C0224	0.00	0.00	0.00	0.004	0.00	0.010
28C0278	0.00	0.00	0.00	0.007	0.00	0.00
28C0357	0.00	0.00	0.00	0.00	0.00	0.004
28C0361	0.00	0.00	0.008	0.006	0.00	0.00
Total	**0.018**	**0.245**	**0.009**	**0.033**	**0.00**	**0.069**

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The following mitigation measure would be implemented.

Mitigation Measure BIO-3: The following measures shall be implemented to reduce potential impacts to tricolored blackbirds:

1. If construction begins during the nesting season (February 1 to August 31), a survey for nesting tricolored blackbirds shall be conducted in the BSA and within a 100-ft radius by a qualified biologist. The survey shall be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.
2. If nesting tricolored blackbirds are found within 100 ft of the BSA during the survey, a setback of 100 ft from nesting areas shall be established and marked with ESA fencing. ESA fencing shall be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.
3. CDFW and Caltrans shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.
4. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.
5. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A. Invasive exotic plants will be controlled to the maximum extent practicable.

Implementation of **Mitigation Measure BIO-3** would reduce potential impacts to tricolored blackbirds in the area of the proposed Project. Impacts would be less than significant.

Short-Eared Owl. The short-eared owl (*Asio flanneus*) is a State species of concern; it has no federal status. Found primarily in the Central Valley, western Sierra Nevada foothills, and along the coastline. This species inhabits open annual grasslands, prairies, meadows, marshes and woodlands. For nesting, this species requires dense vegetation such as tall grasses, cattails, and wetlands. Voles and other small mammals are its primary food source, with occasional reptiles and amphibians.

There is only one CNDDB record for this species in the search area, dated 1987. This occurrence is located approximately 10 mi northeast of the BSA.

The cattail marsh, ruderal grassland, and annual brome grasslands throughout the BSA provide suitable foraging habitat for this species. There is no suitable nesting habitat in the BSA due to the location in an active floodplain.

The project will result in permanent and temporary impacts to foraging habitat for the short-eared owl. The impacts to foraging habitat are the same as those for tricolored blackbird, listed above.

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The following mitigation measure would be implemented.

> **Mitigation Measure BIO-4:** The following measures shall be implemented to reduce potential impacts to short-eared owls:
>
> 1. If nesting short-eared owls are found within 100 ft of the BSA during the survey, a setback of 100 ft from nesting areas shall be established and marked with ESA fencing. ESA fencing shall be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.
> 2. CDFW and Caltrans shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.
> 3. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.
> 4. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A. Invasive exotic plants will be controlled to the maximum extent practicable.

Implementation of **Mitigation Measure BIO-4** would reduce potential impacts to short-eared owls in the area of the proposed Project. Impacts would be less than significant.

Northern Harrier. The northern harrier (*Circus cyaneus*) is a State species of concern; it has no federal status. This species breeds in wide-open habitats that range from Arctic to grasslands to marshes. Nests are placed on the ground, usually in a dense clump of vegetation such as willows, grasses, sedges, and bulrushes. This species is most commonly found in large, undisturbed areas of

wetlands and grasslands. Flying low over the ground, harriers eat small mammals, reptile, birds, and amphibians.

There are two CNDDB records within the search area. The closest record, dated 1992, is located approximately 9.5 mi northwest of the BSA.

The annual brome grassland and ruderal grassland provides suitable foraging habitat for northern harrier. These communities are located as all 10 bridge locations. There is no suitable nesting habitat present in the BSA duet to the location within an active floodplain.

The project will result in permanent impacts as a result of slope paving and rehabilitation and placement of RSP. Temporary impacts will occur as a result of construction access and staging. Permanent and temporary impacts are shown in **Table 9: Permanent and Temporary Impacts to Northern Harrier Foraging Habitat (acres)**, below.

Table 9: Permanent and Temporary Impacts to Northern Harrier Foraging Habitat (acres)

Bridge No.	Annual Brome Grassland		Ruderal/Ruderal Grassland	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00
28C0115	0.013	0.012	0.00	0.00
28C0183	0.00	0.153	0.00	0.00
28C0221	0.00	0.00	0.001	0.00
28C0222	0.00	0.00	0.00	0.016
28C0224	0.00	0.00	0.00	0.004
28C0278	0.00	0.02	0.00	0.007
28C0357	0.00	0.00	0.00	0.00
28C0361	0.00	0.00	0.008	0.006
Total	**0.018**	**0.245**	**0.009**	**0.033**

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The following mitigation measure would be implemented.

Mitigation Measure BIO-5: The following measures shall be implemented to reduce potential impacts to northern harrier:

1. If nesting northern harrier are found within 100 ft of the BSA during the survey, a setback of 100 ft from nesting areas shall be established and marked with ESA fencing. ESA fencing shall be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.
2. CDFW and Caltrans shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

3. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.
4. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A. Invasive exotic plants will be controlled to the maximum extent practicable.

Implementation of **Mitigation Measure BIO-5** would reduce potential impacts to northern harrier in the area of the proposed Project. Impacts would be less than significant.

Silvery Legless Lizard. The silvery legless lizard (*Anniella pulchra pulcra*) is a State species of concern; it has no federal status. The silvery legless lizard is nearly endemic to California and ranges from Antioch, in Contra Costa county, south through the Coast, Transverse, and Pacific ranges. This species is primarily found in areas with sandy or loose loamy soils such as under the sparse vegetation of beaches or pine-oak woodland or near sycamores or oaks that grow on stream banks.

There are five CNDDB records within the search area. The closest record, dated 2004, is located approximately 8.5 mi east of the BSA.

The Valley oak woodland, located at bridge 28C0361 over Mount Diablo creek, provides suitable habitat for this species.

The project will remove 0.002 ac of Valley oak woodland at Bridge 28C0361 over Mount Diablo Creek as a result of placement of RSP. There will be no temporary impacts to Valley oak woodland as a result of this project.

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The following mitigation measure would be implemented.

Mitigation Measure BIO-6: The following measures shall be implemented to reduce potential impacts to silvery legless lizards:

1. Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of silvery legless lizards. If silvery legless lizards are observed in the BSA, they shall be relocated outside of the work area by a qualified biologist.
2. Following completion of the new bridge, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A.

Implementation of **Mitigation Measure BIO-6** would reduce potential impacts to silvery legless lizard in the area of the proposed Project. Impacts would be less than significant.

Pacific Pond Turtle. The Pacific pond turtle (*Emys marmorata*) is a State species of concern; it has no federal status. The Pacific pond turtle ranges from western Washington State south to northwestern Baja California. Two subspecies occur in California: the north Pacific pond turtle (*E.m. marmorata*); and the south Pacific pond turtle (*E.m. pallida*). The BSA is within the range of intergradation between the two subspecies. The pond turtle is a highly aquatic species, found in ponds, marshes,

rivers, streams, and irrigation ditches that typically have rocky or muddy bottoms and are vegetated with aquatic vegetation. Eggs are laid at upland sites, away from the water, from April through August.

There are 25 CNDDB records for the Pacific pond turtle in the search area. The closest record, dated 2006, is located approximately 2.5 mi northwest of Bridge 28C0091L/R.

The annual brome grassland and ruderal/ruderal grassland provides suitable upland habitat while the open water and cattail marsh provide suitable aquatic habitat for this species.

Permanent and temporary impacts to upland and aquatic habitat for the Pacific pond are shown below in **Table 10: Permanent and Temporary Impacts to Pacific Pond Turtle Upland Habitat** and **Table 11: Permanent and Temporary Impacts to Pacific Pond Turtle Aquatic Habitat**.

Table 10: Permanent and Temporary Impacts to Pacific Pond Turtle Upland Habitat

Bridge No.	Annual Brome Grassland		Ruderal/Ruderal Grassland	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00
28C0115	0.013	0.012	0.00	0.00
28C0183	0.00	0.153	0.00	0.00
28C0221	0.00	0.00	0.001	0.00
28C0222	0.00	0.00	0.00	0.016
28C0224	0.00	0.00	0.00	0.004
28C0278	0.00	0.00	0.00	0.007
28C0357	0.00	0.00	0.00	0.00
28C0361	0.00	0.00	0.008	0.006
Total	**0.018**	**0.245**	**0.009**	**0.033**

Table 11: Permanent and Temporary Impacts to Pacific Pond Turtle Aquatic Habitat

Bridge No.	Open Water		Cattail Marsh	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.00	0.00	0.00	0.00
28C0115	0.00	0.00	0.00	0.00
28C0183	0.00	0.076	0.00	0.055
28C0221	0.00	0.00	0.00	0.00
28C0222	0.00	0.00	0.00	0.00
28C0224	0.00	0.005	0.00	0.010
28C0278	0.00	0.00	0.00	0.00
28C0357	0.00	0.00	0.00	0.004
28C0361	0.00	0.00	0.00	0.00
Total	**0.00**	**0.076**	**0.00**	**0.069**

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The following mitigation measure would be implemented.

> **Mitigation Measure BIO-7:** The following measures shall be implemented to reduce potential impacts to Pacific pond turtle:
>
> 1. Prior to the start of construction activities that would affect ponds, canals, or other perennial water features, a qualified biologist shall survey the subject water feature for the presence of Pacific pond turtles. If Pacific pond turtles are observed, they shall be relocated outside of the work area by a qualified biologist.
> 2. Worker environmental awareness training shall be conducted by a qualified biologist for all construction personnel. The training shall instruct workers about the purpose of ESA fencing and the resources being protected.
> 3. Measures consistent with the current Caltrans' BMP Manual (including the SWPPP and WPCP Manuals shall be implemented to minimize effects to aquatic habitats resulting from erosion, siltation, etc. during construction.
> 4. Following completion of construction, all graded slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A.

Implementation of **Mitigation Measure BIO-7** would reduce potential impacts to Pacific pond turtle in the area of the proposed Project. Impacts would be less than significant.

California Red-Legged Frog. The California red-legged frog (*Rana draytonii*) (CRLF) is federally listed as threatened. The CRLF inhabits lowlands and foothills in or near permanent sources of water. This frog prefers ponds, creeks, or marshes with extensive shoreline vegetation. Intermittent streams provide suitable habitat if some surface water remains through the summer. Breeding generally occurs in ponds or stream pools that contain water through late summer and support dense, shrubby, or emergent vegetation such as overhanging willows intermixed with cattails. However, breeding habitat can be varied and may include sag ponds, lagoons, stock ponds, and backwaters within streams and creeks.

CRLF use upland areas and riparian vegetation for resting, feeding, dispersal, and estivation. Riparian areas can meet all of these needs; the scope of upland habitat use is not well understood. CRLF may spend considerable time in suitable upland areas during the summer dry period. They may use a variety of places for estivation, including small mammal burrows, cracks at the bottom of a dry pond, spaces under boulders, rocks, and downed trees, and agricultural features such as drains, watering troughs, and abandoned sheds. Dispersal may occur across varying topography and vegetation type, and during winter rain events CRLF may travel up to 2 mi between water sources. Use of upland and riparian areas is most likely dependent on a number of factors, such as climatic conditions, habitat suitability, and life stage.

The BSA is located within the current range of the CRLF and all 10 bridges provide suitable aquatic non-breeding habitat and upland estivation habitat for this species. The stream flow at nine of the bridges is too swift to provide breeding habitat for CRLF. The water at Bridge 28C0091L/R flows slow enough to provide suitable breeding habitat; however, this reach is not suitable breeding habitat

due to the lack of vegetative cover. Bridge 28C0091L/R lacks the dense vegetation required for maintaining suitable shelter or water temperatures for breeding.

CRLF is well documented within the search area, with 113 documented occurrences. The two closest CNDDB records to the BSA occur approximately 1.3 miles northeast of Bridge 28C0361. The occurrences, dated 2005 and 2008, were observed on the Concord Naval Weapons Station.

The survey results for CRLF at the 10 bridges are described below:

1. **28C0091L** – *Concord Avenue over Walnut Creek* – Walnut Creek is a perennial stream which, unless in severe drought, always holds water. Although there is suitable upland and aquatic non-breeding habitat within the BSA, it is unlikely that CRLF will be present in the BSA. The BSA is located just above the tidal influence and, during high tide; some brackish water may enter the BSA, rendering it unsuitable for CRLF. In addition, there are no documented records or observations of CRLF in Walnut Creek.
2. **28C0091R** – *Concord Avenue over Walnut Creek* – The CRLF habitat at this bridge is incorporated into the BSA for bridge 28C0091L above, as these two bridges constitute both directions of traffic along Concord Avenue over Walnut Creek.
3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – Galindo Creek is an intermittent creek that provides suitable habitat for CRLF. Galindo Creek flows from Mount Diablo State Park, located southeast of the BSA. CRLF is well documented in and around Mount Diablo State Park and it is likely that CRLF may migrate into the BSA. Galindo Creek provides suitable aquatic non-breeding habitat; the black willow thicket and annual brome grassland provides suitable upland habitat for CRLF.
4. **28C0183** – *Willow Pass Road over Walnut Creek* – With the exception of developed areas, the majority of the BSA provides suitable aquatic non-breeding habitat for CRLF. However, as stated above, there is no history of CRLF occurring in Walnut Creek and the BSA is in a highly developed area, decreasing the likelihood that the species would occur in the BSA.
5. **28C0221** – *Court Lane over Galindo Creek* – As stated above, Galindo Creek provides suitable habitat for CRLF and flows from Mount Diablo, which has a high population of CRLF. The ruderal/ruderal grassland habitats provide suitable aquatic non-breeding habitat; the landscaped vegetation provides suitable upland habitat. CRLF may occur in the BSA.
6. **28C0222** – *St. Francis Drive over Galindo Creek* – As stated above, Galindo Creek provides suitable habitat for CRLF. The ruderal/ruderal grassland habitat provides suitable aquatic non-breeding habitat; the landscaped vegetation provides suitable upland habitat. CRLF could occur in the BSA.
7. **28C0224** – *Whitman Road over SDM Channel* – There are no known occurrences of CRLF in the SDM Channel and the BSA is located in a highly urban area. The BSA provides suitable aquatic non-breeding habitat for CRLF in the open water and cattail marsh; the annual brome grasslands provides suitable upland habitat. It is unlikely that CRLF would occur in the BSA.
8. **28C0278** – *Claudia Drive over Holbrook Channel* – There are no known occurrences or history of CRLF in the Holbrook Channel and the BSA is located in a highly urban area. The BSA provides suitable aquatic non-breeding habitat for CRLF in the ruderal/ruderal grassland habitats. The landscaped vegetation provides suitable upland habitat. It is unlikely that CRLF would occur in the BSA.

9. **28C0357** – *San Miguel Road over Pine Creek* – Pine Creek originates in Mount Diablo State Park; CLRF are known to occur in the State Park and Pine Creek. The BSA provides suitable aquatic non-breeding habitat in the cattail marsh; the annual brome grassland provides suitable upland habitat for CRLF. CRLF may occur in the BSA.
10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – Mount Diablo Creek flows from Mount Diablo State Park through the Concord Naval Weapons Station and into Suisun Bay. CRLF are well documented upstream, at Mount Diablo State Park, and downstream, at the Concord Naval Weapons Station, of the BSA. The open water in the BSA provides suitable aquatic non-breeding habitat for CRLF; the ruderal/ruderal grasslands provide suitable upland habitat. CRLF may occur in the BSA.

The proposed project will result in permanent impacts in 0.21 ac of aquatic non-breeding habitat for CRLF and 0.06 ac of upland habitat. The project will result in 0.60 ac of temporary impacts to aquatic non-breeding habitat for CRLF and 0.14 ac of upland habitat. Permanent impacts are a result of installing, repairing, or rehabilitating RSP; temporary impacts to CRLF habitat are a result of project staging, access, and other temporary construction disturbances. **Table 12: Permanent and Temporary Impacts to CRLF Habitat** shows the permanent and temporary impacts to CRLF habitat at each bridge in the BSA.

Table 12: Permanent and Temporary Impacts to CRLF Habitat

Bridge No.	Aquatic Non-Breeding Habitat		Upland Habitat	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.01	0.27	0.00	0.02
28C0115	0.00	0.00	0.03	0.03
28C0183	0.19	0.23	0.00	0.04
28C0221	0.01	0.00	0.02	0.00
28C0222	0.00	0.04	0.00	0.01
28C0224	0.00	0.02	0.00	0.01
28C0278	0.00	0.02	0.00	0.02
28C0357	0.00	0.02	0.00	0.01
28C0361	0.00	0.00	0.01	0.00
Total	**0.21**	**0.60**	**0.06**	**0.14**

There is an abundance of similar habitat available for this species in the region, and the small amount of habitat that would be removed with implementation of the Project would not substantially impact this species. The project will implement measures which have been developed from the provisions of the CRLF "Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program (8-8-10-F-58)" dated May 4, 2011 and issued by USFWS Ventura Office. The following mitigation measure would be implemented.

Mitigation Measure BIO-8: The following measures shall be implemented to reduce potential impacts to California red-legged frog (CRLF):

1. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of CRLF.

2. Ground disturbance will not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work.
3. A USFWS-approved biologist will survey the project site 48 hours before the onset of work activities. If any life stage of the CRLF is found and these individuals likely to be or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The USFWS-approved biologist will relocate the CRLF the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. The Biologist will coordinate with the USFWS on the relocation site prior to the capture of any CRLF. The USFWS-approved biologist will maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs [digital preferred]) to assist him or her in determining whether translocated animals are returning to the original point of capture.
4. Before any activities begin on a project, a USFWS-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the CRLF and its habitat, the specific measures that are being implemented to conserve the CRLF for the current project, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.
5. A USFWS-approved biologist will be present at the work site until all CRLF have been relocated out of harm's way, workers have been instructed, and disturbance of habitat has been completed. After this time, the biologist will designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist will ensure that this monitor receives the training outlined in measure 4 and in the identification of CRLF. If the monitor or the USFWS-approved biologist recommends that work be stopped because CRLF would be affected in a manner not anticipated by the City and the USFWS during review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the effect immediately or require that all actions, which are causing these effects, be halted. If work is stopped, the USFWS will be notified as soon as is reasonably possible.
6. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 ft from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of

habitat does not occur during such operations. Prior to the onset of work, the Contractor shall provide the City with a plan for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

8. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas temporarily disturbed by activities associated with the project, unless the USFWS and the City determine that it is not feasible or modification of original contours would benefit the CRLF.

9. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. ESAs will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to CRLF habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

10. Work will occur during the dry period in the creeks and be limited to June 15 to October 15.

11. To control sedimentation during and after project implementation, The City will implement BMPs outlined in any authorizations or permits, issued under the authorities of the CWA that it receives for the specific project. If BMPs are ineffective, the City will attempt to remedy the situation immediately, in consultation with the USFWS.

12. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inches to prevent CRLF from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.

13. Unless approved by the USFWS, water will not be impounded in a manner that may attract CRLF.

14. A USFWS-approved biologist will permanently remove any individuals of exotic species such as bullfrogs, signal and red swamp crayfish (*Pacifasticus leniusculus; Procambarus clarkii*), and centrarchid fishes from the project area, to the maximum extent possible. The USFWS-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

15. To ensure that diseases are not conveyed between work sites by the USFWS-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.
16. Project sites will be re-vegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area (Table A). Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or practical.
17. The City will not use herbicides as the primary method used to control invasive, exotic plants. However, if the City determines the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the CRLF:
    a. The City will not use herbicides during the breeding season for the CRLF.
    b. The City will conduct surveys for the CRLF immediately prior to the start of any herbicide use. If found, CRLF will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur.
    c. Giant reed and other invasive plants will be cut and hauled out by hand and then painted with glyphosate or glyphosate-based products, such as Aquamaster® or Rodeo®.
    d. Licensed and experienced City staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.
    e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
    f. Herbicides will not be applied on or near open water surfaces (no closer than 60 ft from open water).
    g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 mi per hour.
    h. No herbicides will be applied within 24 hours of forecasted rain.
    i. Application of all herbicides will be done by a qualified City staff or contractors to ensure that overspray is minimized, that all application

is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 ft from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. The City will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the City will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Additional minimization measures include:

18. During placement of RSP, native topsoil from the channel will be incorporated within the RSP to provide a seeding and planting medium. Areas of RSP above the OHWM will be revegetated with the seed mix specified in Table A.

In addition, permanent impacts to CRLF habitat shall be compensated for at a 3:1 ratio and temporary impacts to CRLF habitat shall be compensated for at a 1.1:1 ratio. Mitigation shall be accomplished by purchasing credits at the Mountain House Conservation Bank or other service-approved bank or by other methods contingent upon approval by USFWS. Implementation of **Mitigation Measure BIO-8** and compensatory mitigation would reduce potential impacts to the California red-legged frog in the area of the proposed Project. Impacts would be less than significant.

Central California Coast Steelhead. The Central California Coast steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) is a federally threatened species. The range of the CCC steelhead DPS extends from the Russian River south to Aptos Creek, and includes the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. Tributary streams to Suisun Marsh including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia Slough, excluding the Sacramento-San Joaquin River Basin, as well as two artificial propagation programs: the Don Clausen Fish Hatchery, and Kingfisher Flat Hatchery/ Scott Creek (Monterey Bay Salmon and Trout Project) steelhead hatchery programs. CCC steelhead exhibit both winter and summer runs within their range.

Four bridges provide suitable migration habitat for CCC steelhead; Bridges 28C0091L/R, 28C0183, 28C0224, and 28C0361. Potential suitable spawning habitat is located at the Bridge 28C0361. Survey results for the four bridges are discussed below:

1. **29C0091L/R** – *Concord Avenue over Walnut Creek* – Walnut Creek is part of the Walnut Creek Watershed which originates on the west side of Mount Diablo and flows into the Suisun Bay, approximately 5 mi downstream of the BSA. The BSA provides suitable migration habitat for CCC steelhead. This bridge does not provide suitable spawning habitat due to the lack of high vegetation and open habitat; resulting in high water temperatures.

2. **28C0183** – *Willow Pass Road over Walnut Creek* – Walnut Creek is part of the Walnut Creek watershed and flows into Suisun Bay downstream of the BSA. The BSA provides suitable migration habitat for CCC steelhead but no spawning habitat due to lack of high vegetation and open habitat; resulting in high water temperatures.
3. **28C0224** – *Whitman Road over SDM Channel* – SDM Channel is tributary to Walnut Creek and, at this location, provides suitable migration habitat for CCC steelhead. Due to its concrete linings, this bridge does not provide suitable spawning habitat. In addition, the lack of vegetation and large amount of open water will result in water temperatures that are too high for spawning.
4. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – Mount Diablo Creek originates in Mount Diablo State Park and flows through agricultural lands and the City of Concord before flowing into Suisun Bay. Mount Diablo Creek provides suitable spawning and migrating habitat for CCC steelhead. The gravel creek bed provides suitable spawning sites and the vegetation around the bridge provides cover needed by CCC steelhead.

There is no critical habitat for CCC steelhead in the BSA. The closest critical habitat is located approximately 13 mi east, in San Pablo Bay.

Per consultation with NMFS, the remaining six bridges occur in waterways that do not support populations of CCC steelhead. (See agency coordination in Appendix A).

Although potentially suitable habitat is present within the BSA, with the implementation of avoidance and minimization efforts listed below, the proposed project will have “no effect” to CCC steelhead. This was determined through technical assistance with NMFS. See agency consultation in Appendix A. The following mitigation measure would be implemented.

Mitigation Measure BIO-9: The following measures shall be implemented to reduce potential impacts to Central California Coast steelhead (CCC steelhead):

1. All in-water work associated with the proposed project shall be conducted between June 1 and October 31, which is within the seasonal work window recommended by NMFS to eliminate effects to CCC steelhead.
2. Brightly colored ESA fencing shall be placed along the limits of work to prevent unnecessary encroachment into the BSAs in Walnut Creek, Mount Diablo Creek, and SDM Channel. Fencing shall be maintained in good condition for the duration of construction activities.
3. Prior to any work in the live channel, a water diversion shall be installed around the bridges at Walnut Creek, Mount Diablo Creek, and SDM Channel in order to enclose the construction area and reduce sedimentation during work in the channel. The water diversion will consist of corrugated metal pipe culverts, sheet pile cofferdam, K-rail with visquine, or an equivalent method. Dewatering the work area will minimize the potential water quality impacts (e.g., siltation) and ensure that no salmonids are directly affected by project construction activities (i.e., no work will be conducted in flowing water).
4. During removal of any part of the existing bridge, a tarp or other approved method shall be used below the bridge to prevent debris from falling into

Walnut Creek, Mount Diablo Creek, or SDM Channel. The tarp will be left in place until removal is complete.

5. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Program [WPCP] Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize effects to steelhead during construction.
6. A SWPPP will be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Central Valley RWQCB). The SWPPP will contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials. Implementation of the SWPPP will minimize effects to salmonids and their habitat from potential spills associated with construction activities.
7. Any emergent or submergent aquatic vegetation shall be retained. Other vegetation shall be retained as practical within the constraints of the proposed project. Where vegetation removal is necessary, rapidly sprouting plants, such as willows, shall be cut off at the ground line and the root systems left intact.

Implementation of **Mitigation Measure BIO-9** would reduce potential impacts to CCC steelhead in the area of the proposed Project. Impacts would be less than significant.

Overall, implementation of **Mitigation Measures BIO-1 through BIO-9** would reduce direct or indirect (through habitat modification) impacts on any species identified as candidate, sensitive or special status to a less than significant level.

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. The proposed Project is located in an area where natural communities exist. The BSA contains three natural communities of special concern: black willow thicket, Valley oak woodland, and cattail marsh, which are communities containing riparian habitat.

Black Willow Thicket. The black willow thicket is a riparian community that is dominated by Goodding's black willow. Other species present in this community include balsam poplar, California black walnut, and Fremont cottonwood. This community is located at along the banks of Galindo Creek at Bridge 28C0115. The proposed project will result in impacts to the black willow thicket community at Bridge 28C0115 over Galindo Creek. Permanent impacts, totaling 0.019 ac, will occur as a result of placement of RSP and temporary impacts, totaling 0.013 acre, will occur as a result of project staging and access.

Valley Oak Woodland. The Valley oak woodland series is a natural community dominated by Valley oak. Dominant understory species include annual grasses, Himalayan blackberry, and ivy. This community is only located at Bridge 28C0361. The project will remove 0.002 ac of Valley oak

woodland at Bridge 28C0361 over Mount Diablo Creek as a result of placement of RSP. There will be no temporary impacts to Valley oak woodland as a result of this project.

Cattail Marsh. The cattail marsh is a natural riparian community. Broad-leaved cattail is the dominant plant species with Baltic rush and Italian rye grass intermixed. This community is located at three bridge locations (28C0183, 28C0224, 28C0357). The project will result in temporary impacts, totaling 0.159 ac, to cattail marsh at the 28C0192 bridge over Walnut Creek as a result of temporary access and staging. No permanent impacts to cattail marsh will occur as a result of project construction. Project impacts are shown in **Table 13: Impacts to the Cattail Marsh Community**.

Table 13: Impacts to the Cattail Marsh Community

Bridge No.	Cattail Marsh	
	Permanent	Temporary
28C0091L	0.00	0.00
28C0091R		
28C0115	0.00	0.00
28C0183	0.00	0.055
28C0221	0.00	0.00
28C0222	0.00	0.00
28C0224	0.00	0.10
28C0278	0.00	0.00
28C0357	0.00	0.004
28C0361	0.00	0.00
Total	**0.000**	**0.159**

The following mitigation measure would be implemented to protect these natural communities:

Mitigation Measure BIO-10: The following avoidance and minimization measure would reduce any potential impacts to the natural communities.

1. Work in the live channel of Galindo Creek, Mount Diablo Creek, Walnut Creek, Pine Creek, and SDM Channel shall be minimized to the extent possible.
2. Work shall occur during periods of low flow in Galindo Creek, Mount Diablo Creek, Walnut Creek, Pine Creek, and SDM Channel, typically June 15 through October 15.
3. Brightly colored Environmentally Sensitive Area (ESA) fencing shall be placed along the limits of work to protect habitat adjacent to Galindo Creek, Mount Diablo Creek, Walnut Creek, Pine Creek, and SDM Channel. Fencing shall be maintained in good condition for the duration of construction activities.
4. Staging areas, access routes, and construction areas shall be located outside of wetlands and riparian areas to the maximum extent practicable.

5. Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMP) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Plan [WPCP] Manuals) shall be implemented to minimize effects to wetlands resulting from erosion, siltation, etc. during construction.
6. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table A. Invasive exotic plants will be controlled to the maximum extent practicable.
7. During placement of RSP, native topsoil from the channel will be incorporated within the RSP to provide a seeding and planting medium. Areas of RSP above the OHWM will be revegetated with the seed mix specified in Table A.
8. Prior to issuance of a grading permit or other authorization to proceed with project construction, the project proponent shall obtain any regulatory permits that are required from the ACOE, RWQCB, and /or CDFW.

The removal of willow riparian vegetation shall be compensated for at a 3:1 ratio. Mitigation shall be accomplished using one of the following methods, or by using a combination of methods, contingent upon approval by the CDFW, ACOE, and RWQCB:

- Preservation, creation, and/or restoration of the impacted resources at a minimum ratio of 3:1.
- Purchase of credits at an approved mitigation bank at a minimum of 1:1 mitigation ratio.

All mitigation lands shall be protected in perpetuity through recordation of a conservation easement or equivalent method.

With implementation of **Mitigation Measure BIO-10,** presented above, indirect or direct effects on the natural communities located in the area of the proposed Project would be reduced. Indirect and direct impacts to the natural communities would be less than significant.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant with Mitigation Incorporated. Aquatic resources within the BSA include the SDM Channel, Walnut Creek, Mount Diablo Creek, Pine Creek, Holbrook Creek, and Galindo Creek. As shown in **Table 14: Aquatic Resources in the BSA**, waters of the U.S. for all 10 bridges total 3.30 ac. Wetlands, totaling approximately 0.4 ac are limited to the low-flow banks of Holbrook Channel Bridge 28C0278, Galindo Creek at Bridges 28C0115 and 28C0221, Walnut Creek at Bridge 28C0183, and Whitman Road at Bridge 28C0224. Non-wetland waters, totaling approximately 2.9 ac, consist of all other waters below the ordinary high water mark that were determined not to support wetlands.

Table 14: Aquatic Resources in the BSA

Bridge No.	Potential Waters of the U.S.			CDFW Waters
	Wetlands	Non-Wetland Waters	Total	
28C0091L	0.01	1.03	**1.04**	1.04

28C0091R				
28C0115	0.09	0.07	**0.16**	0.32
28C0183	0.08	1.16	**1.24**	1.24
28C0221	0.02	0.07	**0.09**	0.09
28C0222	0.00	0.05	**0.05**	0.05
28C0224	0.07	0.08	**0.15**	0.15
28C0278	0.03	0.04	**0.07**	0.07
28C0357	0.06	0.23	**0.29**	0.29
28C0361	0.00	0.16	**0.16**	0.28
Total	**0.36**	**2.89**	**3.25**	**3.53**

The project will result in permanent and temporary impacts to wetlands and non-wetland waters as shown in **Table 15: Permanent and Temporary Impacts to CDFW Waters**. The project is likely to require an Army Corps of Engineers Nationwide Permit, a Water Quality Certification from the Regional Water Quality Control Board, and a California Department of Fish and Wildlife Lake and Streambed Alteration Agreement.

Table 15: Permanent and Temporary Impacts to CDFW Waters

Bridge No.	CDFW Waters	
	Permanent	**Temporary**
28C0091L 28C0091R	0.013	0.271
28C0115	0.014	0.013
28C0183	0.193	0.284
28C0221	0.009	0.00
28C0222	0.00	0.037
28C0224	0.00	0.021
28C0278	0.00	0.016
28C0357	0.00	0.029
28C0361	0.002	0.00
Total	**0.231**	**0.671**

The Waters of the U.S. within the BSA that will be affected by the project are regulated by the ACOE under Section 404 of the CWA. It is expected that proposed discharge into the creeks during construction can be authorized by the ACOE using Nationwide Permit (NWP) 14 – Linear Transportation Projects. In accordance with the conditions of the NWP 14, a Preconstruction Notification must be submitted to the ACOE for verification that the proposed discharges comply with the conditions of the subject NWP.

Discharges into Waters of the U.S. under Section 404 of the CWA also require a Water Quality Certification from the RWQCB, pursuant to Section 401 of the CWA. The RWQCB may opt to waive the water quality certification and instead issue water discharge requirements pursuant to their authority under the PCWQCA.

CDFW Jurisdictional waters in the BSA, totaling 3.53 ac, include the live channels of Walnut Creek, Galindo Creek, Pine Creek, Mount Diablo Creek, Holbrook Creek, and the SDM Channel. Impacts to

these resources will require a Lake and Streambed Alteration Agreement from CDFW, under Section 1600-1606 of the California Fish and Game Code.

The project will result in minor permanent impacts, totaling 0.001 ac, and temporary impacts, totaling 0.091 ac, to wetlands. The project has been designed to avoid impacts, were feasible. Additionally, following construction, at least 0.001 ac of wetland vegetation is expected to naturally reestablish within the RSP that has been backfilled with native soil. With implementation of **Mitigation Measure BIO-10,** presented above, indirect or direct effects on the aquatic resources located in the area of the proposed Project would be reduced. Indirect and direct impacts to the natural communities would be less than significant.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact. Wildlife movement corridors are linear habitats that function to connect two or more areas of significant wildlife habitat. These corridors may function on a local level between small habitat patches (e.g., streams in urban settings) or may provide critical connections between regionally significant habitats (e.g., deer movement corridors). Wildlife corridors typically include vegetation and topography that facilitate the movements of wild animals from one area of suitable habitat to another in order to fulfill foraging, breeding, and territorial needs. These corridors often provide cover and protection from predators that may be lacking in surrounding habitats. Wildlife corridors generally include riparian zones and similar linear expanses of contiguous habitat.

The creeks provide potential movement for smaller species of wildlife in the local vicinity. The creeks located within the BSA are not considered a migratory route for Central Valley steelhead or Central Valley Pacific salmon since this areas is dense marsh habitat and not suitable for these species. Implementation of the proposed Project would not substantially interfere with the movement of such species in the local vicinity. Impacts would be less than significant.

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

No Impact. The City of Concord implements an ordinance to preserve certain protected trees from being removed with development of Projects (Article III: Protected Trees). The preservation of trees is necessary for the "health and welfare of Concord residents in order to conserve scenic beauty, prevent erosion of topsoil, protect against flood hazards, counteract the pollutants in the air, and maintain the climatic and ecological balance of the area." The provisions apply to all development projects requiring discretionary approval to remove protected trees.

Potential protected trees at the project site of Bridge No. 280C0361 include Valley Oak. No trees will be affected or removed as a result of the Project at this bridge. No protected trees occur in the Project area of Bridge No. 28C0221, where landscaped tree removal will occur. Therefore, no impact would occur.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or State habitat conservation plan?

No Impact. The Project site is not subject to any local, regional, or State habitat conservation plans.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	☐	☒	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐
e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	☐	☐	☒	☐

LSA Associates, Inc. (LSA) prepared a Historic Property Survey Report (HPSR), an Archaeological Survey Report (ASR), and an Area of Potential Effects (APE) map for this project. To prepare these documents, LSA conducted archival and background research, field survey (on February 22 and May 15, 2012), consultation with potentially interested parties, and an archaeological sensitivity assessment. These studies identified one previously identified National Register of Historic Places (National Register)-eligible built environment resource within the APE. The Contra Costa Canal is within the APE at bridge No. 28C0436. The project will not result in an adverse effect on this resource. The ASR identified high geoarchaeological sensitivity; however, the project does not have the potential to affect this resource.

The APE for the project includes the maximum extent of all ground disturbing activities including staging areas and access routes. The APE is located at 16 bridge locations throughout the City of Concord, Contra Costa County, California (Bridge No. 28C0034, 28C0091L, 28C0091R, 28C0115, 28C0116, 28C0183, 28C0189L, 28C0189R, 28C0221, 28C0222, 28C0224, 28C0278, 28C0357, 28C0361, 28C0427, and 28C0436). Repair work to above-ground bridge components will entail minimal ground disturbance. Repair work to below-ground bridge components, such as rock slope protection, will take place at locations previously affected by bridge construction, with the exception of Saint Francis Drive at Galindo Creek Bridge, where soil nails will be embedded 6.25 feet deep. The maximum areal extent of ground disturbance in the APE is 227,018 square feet.

Historic Resources within the Area of Potential Effects

The Contra Costa Canal, located at bridge No. 28C0436, is eligible for inclusion in the National Register at the state level under Criterion A for its association with the construction of the Central Valley Project and at the local level under Criterion A for its association with the economic

development of eastern Contra Costa County. Its period of significance is 1937-1951. Planned work at this bridge location involves stabilizing the canal and protecting the abutment of bridge no. 28C0436. Earthen voids behind the canal lining will be backfilled. A joint will be installed above the canal lining; this area above the canal lining will be capped with concrete slope paving which will divert storm water runoff away from the bridge abutment. This paving will not increase or alter the flow of surface runoff from the surrounding area into the canal. No work will be conducted within the canal. The character-defining feature of the Canal that contributes to its significance within the APE is the concrete-lined channel segment. No work will be conducted within the concrete lined channel segment. Consequently, the undertaking will not alter the characteristics that qualify the Canal for the National Register and the project will not result in an adverse effect to this resource (HPSR Section 8).

Interested Parties Consultation

On February 21, 2012, LSA sent a letter describing the project with maps depicting the APE to the Native American Heritage Commission (NAHC) in Sacramento asking the Commission to review their Sacred Lands File for any Native American cultural resources that might be affected by the project. Also requested were the names of Native Americans who might have information or concerns about the APE. Debbie Pilas-Treadway, NAHC Environmental Specialist III, in a fax dated March 7, 2012, informed LSA that a records search of the Sacred Lands File did not "indicate the presence of Native American cultural resources in the immediate project area." Ms. Pilas-Treadway also provided a list of Native American contacts. On March 16, 2012, LSA sent letters describing the project with maps depicting the APE to the Native American contacts on the list for Contra Costa County provided by the NAHC, asking for any information or concerns regarding cultural resources within the APE. None of the Native American contacts presented concerns regarding the projects potential to affect resources.

In addition to Native American's, LSA also consulted with the Concord Historical Society and the Contra Costa Historical Society, which did not present concerns about the projects potential to affect resources.

<u>Discussion</u>

a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?

Less Than Significant with Mitigation Incorporated. As described above, research was conducted to determine if historical or Native American cultural resources are located within the APE. A built environment cultural resource was identified in the APE of bridge No. 287C0436; however, the project does not have the potential to affect this resource.

The possibility exists that previously unknown buried archaeological deposits could be discovered during grading and excavation work associated with construction. Prehistoric materials can include flaked-stone tools (e.g., projectile points, knives, choppers) or obsidian, chert, basalt or quartzite tool making debris; bone tools; culturally darkened soil (e.g., midden soil often containing heat-affected rock, ash and charcoal, shellfish remains, faunal bones, and cultural materials); and stone milling equipment (e.g., mortars, pestles, handstones). Prehistoric archaeological sites often contain human remains. Historical materials can include wood, stone, concrete, or adobe footings, walls, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, metal, and other refuse. The following mitigation measure would be implemented.

> **Mitigation Measure CULT-1:** If deposits of prehistoric or historical archaeological materials are discovered during non-monitored Project construction activities, all work within 25 feet of the discovery shall be redirected and a qualified archaeologist contacted, if one is not present, to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Contra Costa County shall be notified. Project personnel shall not collect or move any archaeological materials.
>
> Any adverse impacts to the finds shall be avoided by Project activities if possible. If avoidance is not feasible, the archaeological deposits shall be evaluated to determine if they qualify as a historical resource or unique archaeological resource, or as historic property. If the deposits do not so qualify, avoidance is not necessary. If the deposits do so qualify, adverse impacts on the deposits shall be avoided, or such impacts shall be mitigated. Mitigation may consist of, but is not limited to, recovery and analysis of the archaeological deposit; recording the resource; preparing a report of findings; and accessioning recovered archaeological materials at an appropriate curation facility. Educational public outreach may also be appropriate. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the archaeological deposits discovered. The report shall be submitted to Contra Costa County.

Implementation of **Mitigation Measure CULT-1** would reduce impacts to previously undiscovered cultural resources to a less than significant level.

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

Less Than Significant with Mitigation Incorporated. No archaeological resources, as defined by §15064.5, have been identified in the Project area. Archaeological resources are not anticipated to be discovered during Project activities. If, however, such resources are discovered, implementation of **Mitigation Measure CULT-1**, described above, would reduce potential impacts to a less than significant level.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant with Mitigation Incorporated. Based on the Project description, it is unlikely that the majority of the Project's ground-disturbing activities would be sufficiently deep to encounter paleontological resources, which might be encountered at least 15 feet below ground surface (bgs) in the Project area. As previously stated, repair work to below-ground bridge components, such as rock slope protection, will take place at locations previously affected by bridge construction, with the exception of Saint Francis Drive at Galindo Creek Bridge, where soil nails will be embedded 6.25 feet deep. If, however, such resources are discovered, implementation of **Mitigation Measure PALEO-1** would reduce potential impacts to a less than significant level.

> **Mitigation Measure PALEO-1:** If paleontological resources are encountered during Project subsurface construction and no monitor is present, all ground-disturbing activities within 50 feet of the find shall be redirected to other areas until a qualified paleontologist can be contacted to evaluate the find and make recommendations. If found to be significant and Project activities cannot avoid the paleontological resources, a paleontological evaluation and monitoring plan, as described above, shall be implemented. Adverse impacts to

> paleontological resources shall be mitigated, which may include monitoring, data recovery and analysis, a final report, and the accession of all fossil material to a paleontological repository. Upon completion of Project ground-disturbing activities, a report documenting methods, findings, and recommendations shall be prepared and submitted to the paleontological repository.

With implementation of **Mitigation Measure PALEO-1,** impacts would be less than significant.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less Than Significant with Mitigation Incorporated. Although human remains have not been identified within the Project area, the possibility of encountering such remains, either in isolation or with archaeological deposits, cannot be discounted. Such remains could be uncovered during Project ground-disturbing activities. If the Project disturbs human remains, including those interred outside of formal cemeteries, the Project would have a significant effect on the environment.

There is no indication that human remains are present within the proposed Project site. **Mitigation Measure CULT-2** would be implemented to ensure that potential impacts to human remains, should they be encountered, be reduced.

> **Mitigation Measure CULT-2:** In the event that human remains are encountered, work within 50 feet of the discovery shall be redirected and the Contra Costa County coroner notified immediately. At the same time, a qualified archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner shall notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission shall identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations of the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report shall be submitted to Contra Costa County.

With implementation of **Mitigation Measure CULT-2** impacts would be less than significant.

e) Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?

Less Than Significant Impact. Assembly Bill (AB) 52, a new state law recently (2014) signed by the governor, amended the California Environmental Quality Act (CEQA) to require Tribal Cultural Resources to be considered as potentially significant cultural resources under the CEQA environmental review process. Effective July 1, 2015, a lead agency will be required to offer Native American tribes with an interest in tribal cultural resources located within its jurisdiction the opportunity to consult on CEQA documents. The new procedures under AB 52 offer the tribes an opportunity to take an active role in the CEQA process in order to protect tribal cultural resources.

Although the effective date is July 1, 2015, LSA completed consultation with the NAHC and Native American contacts provided by the NAHC and no tribal cultural resources were identified. Pursuant to Assembly Bill 52, commonly called *The Native Americans CEQA Bill*, if a Native American identifies tribal cultural resources within the APE for the project, the Native American shall contact

the local lead agency. With coordination with local Native American Tribes, impacts to tribal cultural resources would be less than significant.

VI. GEOLOGY AND SOILS

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Environmental Setting

Regional Setting

Concord lies within the physiographic region of California which is referred to as the Coast Ranges geomorphic province, much of which is composed of marine sedimentary and volcanic rocks that form the Franciscan Assemblage. Bordered by the Carquinez Strait to the north, and Mt. Diablo to the east, Concord and its vicinity are characterized by northwestern trending mountain ranges, ridges, and valleys. Elevations range from sea level along Suisun Bay to over 800 feet above mean sea level along the slopes of Mt. Diablo. Concord itself is largely underlain by Quaternary-age (1.6 million years old to the present) alluvial fan deposits originating from the Diablo Range and estuarine

deposits from Suisun Bay. Upland areas of Concord located along the foothills of Mt. Diablo are underlain by bedrock deposits consisting mainly of sandstone, shale, and mudstone.

Soils

Because Concord is underlain with stiff alluvial clay containing lenses of sand and silt deposits, liquefaction and landslide potential are both considered high in some places. The highest potential for future landslides exists in the upland areas along the flanks of Mt. Diablo, at the east and southern edges of the City. Pockets of high landslide potential also exist on sloping terrain, such as the intersection of Port Chicago Way and SR-4. Additionally, such soils have expansive properties that could result in significant shrinking or swelling, potentially damaging road surfaces and infrastructure lines.

According to the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey, as shown in **Table 16: Soil Types at the Project Site**, soil types located within the proposed Project area are comprised of La, Lm, BaA, CaA, Cc, So, AdC, and GaA.

Table 16: Soil Types at the Project Site

Bridge No.	Soil Type Code	Soil Description
28C0091L/28C0091R	La	Laugenour loam
28C0115	Lm	Los Robles clay loam
28C0183	La	Laugenour loam
28C0221	BaA/CaA	Botella clay loam, 0 to 2 percent slopes/Capay clay, 0 to 2 percent slopes
28C0222	BaA/CaA	Botella clay loam, 0 to 2 percent slopes/Capay clay, 0 to 2 percent slopes
28C0224	Cc	Clear Lake clay, 0 to 15 percent slopes, MLRA 15
28C0278	Cc	Clear Lake clay, 0 to 15 percent slopes, MLRA 15
28C0357	So/AdC	Sycamore silty clay loam/Antioch loam, 2 to 9 percent slopes
28C0361	GaA	Garretson loam, 0 to 2 percent slopes

Source: USDA National Resources Conservation Service Soil Survey. Accessed 5/5/15. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Earth Movement

The entire San Francisco Bay Area is located in a region of active seismicity. The seismicity of the region is primarily related to the San Andreas Fault Zone (SAFZ). The SAFZ is a complex of active faults forming the boundary between the North American and the Pacific lithospheric plates. Movement of the plates relative to one another results in the accumulation of strain along the faults that is released during earthquakes. Historically, numerous moderate to strong earthquakes have been generated in northern California by several major faults in the SAFZ system. The level of active seismicity results in classification of the San Francisco Bay Area as seismic risk Zone 4, the highest risk category, in the California Building Code.

SAFZ includes numerous faults found by the California Division of Mines and Geology under the Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA) to be “active” (i.e., to have evidence of surface rupture in the last 11,000 years).[1] The A-PEFZA active faults in the region include the

[1] California Department of Conservation, California Geological Survey, 2007. Special Publication 42, Fault-Rupture Hazard Zones in California, Interim Revision 2007.

Concord-Green Valley (CGV) (which bisects the City of Concord), West Napa, Mayacama, Rodgers Creek, Hayward, Calaveras, Greenville, and San Andreas faults.[1]

Faults mapped by the A-PEFZA are those that manifest surface rupture. There are, however, other seismic sources in the region in addition to the A-PEFZA. One such seismic source is the Coast Range-Sierran Block Boundary (CRSBB) that forms the western geomorphic boundary of the Central Valley with the Coast Ranges to the west. A seismically active fold and thrust belt underlies this actively deforming boundary.

The U.S. Geological Survey's Working Group on California Earthquake Probabilities estimated that there is a 62-percent probability that one or more M_w6.7 or greater magnitude earthquakes will occur in the San Francisco Bay Area before 2031.[2] The probability of a M_w6.7 magnitude or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault, 27 percent along the Hayward-Rodgers Creek Fault, eleven percent along the Calaveras Fault, four percent along the Concord-Green Valley (CGV) Fault, and three percent on the Greenville Fault. When predictions are expanded to 100 years, it is estimated that about three M_w6.7 or greater events could occur during that time. Thus, the probability of at least one M_w6.7 or greater magnitude earthquake rises to the near certainty of about 96 percent when calculated for a 100-year span.

Ground Shaking

Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill or unconsolidated alluvial fill. The strongest ground shaking is anticipated to occur as a result of an earthquake on the Concord fault, due to its immediate proximity. However, ground shaking could affect areas hundreds of miles from an earthquake's epicenter. Earthquakes on the active faults are expected to produce a range of ground shaking intensities throughout the Concord area. A major seismic event on any of these active faults could cause significant ground shaking in Concord, as experienced during earthquakes in recent history, namely the 1989 Loma Prieta earthquake (ABAG, 2005).

According to CGS probabilistic seismic hazard maps, peak ground acceleration within Concord could reach or exceed 0.7 g (Peterson et al., 2003).

A majority of the City is located in areas of moderate ground shaking intensity; however, the western portion of Concord is more susceptible to earthquakes than the eastern portion due to underlying soils and seismicity resulting in moderately high to extremely high ground shaking amplification. A "Special Studies Zone" (SSZ) has been designated along the Concord Fault, and there are limitations on construction within this area to protect life and property. The areas with the highest ground shaking potential are directly surrounding Pacheco Slough.

Liquefaction

Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient

[1] Jennings, C.W. and William A. Bryant, 2010. California Geological Survey 150th Anniversary Fault Activity Map of California, Department of Conservation.

[2] USGS, 2003. Earthquake Probabilities in the San Francisco Bay Region: 2002 to 2031 – A Summary of Findings, Open File Report 03-214.

loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths.

Regions within Concord that have high to very high levels of liquefaction susceptibility include Clayton Valley and areas along Suisun Bay, Pacheco Creek, Hastings and Belloma Slough.

Landslides

Slope failure can occur as either rapid movement of large masses of soil ("landslide") or slow, continuous movement ("creep"). The primary factors influencing the stability of a slope are: 1) the nature of the underlying soil or bedrock, 2) the geometry of the slope (height and steepness), 3) rainfall, and 4) the presence of previous landslide deposits.

The highest susceptibility to landsliding in Concord exists in the upland areas along the flanks of Mt. Diablo, as shown on Figure 3.7-4 of the 2030 Concord General Plan. Landslide mapping of the Concord region has been limited however, and areas of undeveloped, steeply sloping terrain, such as within the Concord Naval Weapons Station, may also be prone to landslide hazards.

Erosion

Soil erosion is a process whereby soil materials are worn away and transported to another area, either by wind or water. Rates of erosion can vary depending on the soil material and structure, placement, and human activity. Soil containing high amounts of silt can be easily eroded, while sandy soils are less susceptible. Excessive soil erosion can eventually damage building foundations and roadways. Erosion is most likely to occur on sloped areas with exposed soil, especially where unnatural slopes are created by cut-and-fill activities. Soil erosion rates can be higher during the construction phase. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, or asphalt. Soils in Concord that are highly susceptible to erosion include areas of steeply sloping topography, particularly when vegetation and superficial material is stripped for construction purposes.

Expansive Soils

Expansive soils possess a "shrink-swell" characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering, or the placement of structures directly on expansive soils. Areas of Concord most susceptible to settlement include Clayton Valley and areas along Suisun Bay, Pacheco Creek, Hastings, and Belloma Slough, or other areas underlain by Bay Muds and soils containing a high percentage of clays.

Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The Concord-Creek Valley Fault, an Alquist-Priolo fault, crosses the City of Concord. The fault travels closest to Project sites 7 and 9 but an earthquake on the fault would likely affect the entire City, including all of the proposed Project sites.

The proposed Project would replace an existing bridge and would not include the development of structures housing people or new infrastructure. Therefore, the proposed Project would not expose people or structures to potential risk of loss, injury, or death involving rupture of a known earthquake fault or Alquist-Priolo Earthquake Fault Zone. Impacts would be less than significant.

ii) Strong seismic ground shaking?

Less Than Significant Impact. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground-shaking is controlled by the magnitude and intensity of the earthquake, depth of the epicenter, distance from the epicenter, and local geological conditions.

Based on the DEIR for the City's General Plan, with data from the California Association of Bay Area Governments, November 2004, and the State of California Department of Conservation, 1993, Project site 9 is located in a medium-high intensity earthquake shaking potential region. Project sites 1, 2, 3, 4, 5, 6, 7, and 8 are located in a medium intensity earthquake shaking potential region. Project site 10 is located in a medium-low intensity earthquake shaking potential region.

According to CGS probabilistic seismic hazard maps, peak ground acceleration within Concord could reach or exceed 0.7 g (Peterson et al., 2003). Although the site could be exposed to medium-low to medium-high ground shaking, the Project consists of repairs and maintenance consistent with Contra Costa County and Caltrans seismic standards. Implementation of the proposed Project would not expose people or structures to potential adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Impacts would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Soil liquefaction is a phenomenon primarily associated with the saturated soil layers located close to the ground surface. These soils lose strength during ground shaking in seismic events. Due to the loss of strength, the soil acquires "mobility" sufficient to permit both horizontal and vertical movements. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded; saturated, fine-grained sands that lie relatively close to the ground surface. However, loose sands that contain a significant amount of fines (minute silt and clay fraction) may also liquefy.

Based on the DEIR for the City's General Plan, with data from the California Association of Bay Area Governments, November 2004, and the State of California Department of Conservation, 1993, Project sites 1, 2, 4, 5, 6, 7, 8, and 10 are located in a high liquefaction potential region whereas Project sites 3 and 9 are located in areas with a low liquefaction potential.

The proposed Project consists of repairs and maintenance that will be consistent with the most current Caltrans standards in order to reduce the potential for bridge failure if seismic-related ground failure, including liquefaction were to occur. With such design features in place, impacts would be less than significant.

iv) Landslides?

No Impact. Based on a study by the USGS, the proposed Project site is categorized as "Flatland" and "Few Landslides." The proposed Project site and surrounding area is not prone to the risk of landslides and the proposed Project would not alter slopes in a manner that would increase the risk of landslides. Implementation of the proposed Project would not expose people or structures to potential adverse effects, including the risk of loss, injury or death involving seismically induced landslides. No impacts would occur.

a) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. No ground disturbing activities would occur during operation of the Project, and minimal soil erosion or loss of top soil would occur due to maintenance vehicles traveling over unpaved areas. As such, Project impacts resulting in substantial soil erosion or loss of top soil would be less than significant.

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

Less Than Significant Impact. As discussed above, the proposed Project site is located in an area that is characterized as flatland, with few landslides. Ground collapse occurs in areas underlain by limestone and is most prevalent in states such as Florida and Pennsylvania. The proposed Project site has a moderate susceptibility to liquefaction and, therefore, would also have a moderate susceptibility to lateral spreading of the soil on-site. However, the proposed Project consists of repairs and maintenance consistent with Caltrans standards and Contra Costa County codes. With such design features in place, impacts would be less than significant.

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?

Less Than Significant Impact. Expansion and contraction of volume occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking) and are generally associated with clayey soils. During these cycles, the volume of the soil changes substantially. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during the construction process.

Areas of Concord most susceptible to settlement include Clayton Valley and areas along Suisun Bay, Pacheco Creek, Hastings, and Belloma Slough, or other areas underlain by Bay Muds and soils containing a high percentage of clays.

According to the United States Department of Agriculture Natural Resources Conservation Service Web Soil Survey, as shown in Table 16, soil types located within the proposed Project area are comprised of La, Lm, BaA, CaA, Cc, So, AdC, and GaA. The proposed Project consists of minor repairs and maintenance to existing bridges. The proposed Project would not change the Project site's susceptibility to expansion and would not create risks to life or property. Impacts would be less than significant.

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?

No Impact. Construction and operational activities associated with Project implementation would not generate wastewater that would require disposal. Septic tanks are not proposed as part of the Project. Therefore, implementation of the proposed Project would not result in impacts to soil associated with the use of such wastewater treatment systems.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GREENHOUSE GAS EMISSIONS				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Environmental Setting

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of greenhouse gases (GHGs) that contribute to global climate change have a broader global impact. Global climate change is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere. The principal GHGs contributing to global climate change are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated compounds. These gases allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space. The potential implications of global climate change are rising sea levels, and adverse impacts to water supply, water quality, agriculture, forestry and habitats. In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, much of the GHG production is generated by motor vehicle usage. GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning on the city, county, and subregional level, and other measures to reduce automobile use. Energy conservation measures can contribute to reduction in GHG emissions as well.

The primary existing sources of human-caused GHGs in the proposed Project area are vehicle emissions. The BAAQMD operational-related threshold of significance for GHG emissions is 1,100 metric tons per year.

BAAQMD has not adopted thresholds of significance for construction-related GHG emissions. However, BAAQMD in its *2012 CEQA Guide* suggests that the Lead Agency quantify and disclose GHG emissions that would occur during construction (BAAQMD 2012).

Concord has instituted a number of plans, policies, and programs to aid in the reduction of GHG emissions. Policies in the 2030 General Plan aim to curb GHG emissions and reduce sprawl, in part by supporting land use decisions that reduce reliance on cars and promote compact development. In addition to implementing Plan policies, the City coordinates with regional agencies to ensure its transportation plans, programs, and projects conform to the most recent air quality and GHG reduction requirements. The City's Downtown Specific Plan, adopted on June 24, 2014, supports State and regional GHG reduction goals by planning to accommodate a significant share of future

growth in Concord on infill sites near transit. Furthermore, the citywide Climate Action Plan adopted in July 2013 provides a number of strategies for Concord to help the State meet its greenhouse gas reduction targets through land use and transportation strategies, energy and water conservation, and green construction practices.

Construction equipment used during the proposed Project would include an excavator, backhoe, hoe-ram, bobcat, loader, small crane, boom truck, dump truck, pickup truck, grader, concrete truck. Construction activities for the proposed Project are described in the Project description.

Discussion

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

Less Than Significant Impact. GHG emissions associated with implementation of the proposed Project would occur over the short-term due to construction activities. Construction-related GHG emissions would primarily consist of exhaust from construction equipment.

Short-Term GHG Emissions. The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, BAAQMD recommends that the Lead Agency quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals.

Demolition and construction at the proposed Project site would produce combustion emissions from various sources. During site preparation, demolition and construction of the proposed Project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment. Exhaust emissions from on-site demolition and construction activities would vary daily as construction activity levels change. As described in Section IIb., the proposed project would require the operation of approximately two or three pieces of equipment at any given time during the construction period.

The project would also implement the BAAQMD's construction Best Management Practices described in **Mitigation Measure AIR-1** that would require limits on idling and properly tuned engines which would reduce GHG emissions. Therefore, the project would have a less-than-significant impact on short-term GHG emissions.

Long-Term GHG Emissions. The BAAQMD operational-related threshold of significance for greenhouse (GHG) emissions is 1,100 metric tons per year. The proposed project would not result in significant, long-term, GHG emissions, as the proposed project would rehabilitate bridges and would not generate vehicle trips and/or be a source of emissions. The proposed project would involve preventative maintenance on 10 bridges within the City of Concord. Such uses are not expected to generate GHG emissions and would not conflict with any plan related to the reduction of GHG emissions. Once completed, the proposed project would not increase VMT and therefore would not increase GHG emissions. Therefore, the proposed project would not cause a long-term increase in GHG emissions and would not generate GHG emissions directly or indirectly that may have a significant impact on the environment. This impact would be less than significant.

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

No Impact. In June 2005, Governor Schwarzenegger established California's GHG emissions reduction targets in Executive Order S-3-05. The Executive Order established the following goals for the State of California: GHG emissions should be reduced to 2000 levels by 2010; GHG emissions should be reduced to 1990 levels by 2020; and GHG emissions should be reduced to 80 percent below 1990 levels by 2025.

California's major initiative for reducing GHG emissions is outlined in AB 32, the "Global Warming Solutions Act," passed by the California State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels at 427 million metric tons (MMT) of CO2eq. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to goal climate change. The Scoping Plan was approved by ARB on December 11, 2008, and includes measures to address GHG emissions reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures (CARB 2008). The Scoping Plan includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The measures in the Scoping Plan would not be binding until after they are adopted through the normal rulemaking process and, therefore, are only recommendations at this time. The ARB rulemaking process includes preparation and release of each of the draft measures, public input through workshops and a public comment period, followed by an ARB Board hearing and rule adoption.

The California Environmental Protection Agency Climate Action Team (CAT) and the ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT's 2006 "Report to Governor Schwarzenegger and the Legislature," ARB's 2007 "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California," and ARB's "Climate Change Scoping Plan: a Framework for Change." The reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32.

The adopted Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed ARB to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. In June 2007 ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture). Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures.

ARB's focus in identifying the 44 early action items was to recommend measures that ARB staff concluded were "expected to yield significant GHG emission reductions, are likely to be cost-

effective and technologically feasible." The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 MMT. Accordingly, the 44 early action items focus on industrial production processes, agriculture, and transportation sectors. Early action items associated with industrial production and agriculture do not apply to the proposed Project. The transportation sector early action items such as truck efficiency, low carbon fuel standard, proper tire inflation, truck stop electrification and strengthening light duty vehicle standards are either not specifically applicable to the proposed Project or would not result in a reduction of GHG emissions associated with the Project. State measures include emission reductions assumed as part of the Scoping Plan, including light-duty vehicle GHG standards ("Pavley standards"), low carbon fuel standard, and energy efficiency measures.

Furthermore, the citywide Climate Action Plan adopted in July 2013 provides a number of strategies for Concord to help the State meet its greenhouse gas reduction targets through land use and transportation strategies, energy and water conservation, and green construction practices.

The proposed Project includes repairs and maintenance on existing bridges to improve overall safety in the Project area. The proposed Project would not conflict with the State goal of reducing GHG emissions and would not conflict with the AB 32 Scoping Plan or the early action measures. The Project would be subject to all applicable permit and planning requirements in place or adopted by the City of Concord. Therefore, the proposed project would be consistent with all the applicable local plans, policies and regulations and would not conflict with the provisions of the 2013 Climate Action Element, or any other State or regional plan, policy or regulation of an agency adopted for the purpose of reducing GHG emissions. No impacts would occur pertaining to this threshold.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

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

Environmental Setting

Hazardous materials include all flammable, reactive, corrosive, or toxic substances which, because of these properties, pose potential harm to the public or environment. Hazardous materials such as agricultural chemicals, natural gas and petroleum, explosives, radioactive materials and various commercial chemical substances are used, stored, or produced in the City of Concord.

The proposed Project site and nearby land uses are not located in an area that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5. A search of the California State Water Resources Control Board (SWRCB) GeoTracker website (SWRCB 2015) in June 2015 indicates there were 9 records within 1,000 feet of the proposed Project, as shown in **Table 17: Geotracker Sites in the Project Vicinity**.[1]

Table 17: Geotracker Sites in the Project Vicinity

Bridge	Records found within 1,000 feet	Details
Bridge 28C0091L and 28C0091R	5 records	1200 Concord Avenue – Closed LUST site 201 John Glenn Dr – Closed LUST site 1300 Concord Ave – Closed LUST site 2550 Stanwell Drive – Other cleanup site - Open but Inactive 51 John Glenn Drive – Open LUST site – Site Assessment Pending
Bridge 28C0115	1 record	1024 Alberta Way – Closed LUST site
Bridge 28C0183	3 records	1240 Willow Pass Road – LUST Closed 1231 Diamond Way – LUST Closed 1220 Diamond Way – LUST Closed
Bridge 28C0221	None	N/A
Bridge 28C0222	None	N/A
Bridge 28C0224	None	N/A
Bridge 28C0278	2 records	3399 Port Chicago Highway – Closed LUST site 2484 Olivia Road – Active permitted UST 3373 Port Chicago Highway – Closed cleanup site
Bridge 28C0357	None	N/A
Bridge 28C0361	None	N/A

Source: http://geotracker.swrcb.ca.gov, Accessed 6/8/2015

Based on the "Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California Map" prepared by the U.S. Geologic Survey and California Geological Survey (2011), former asbestos mines/prospects, reported asbestos occurrences, asbestos-bearing deposits, reported fibrous minerals, and ultramafic rock in outcrops are not located in the vicinity of the proposed Project.

Based on the Draft Supplemental EIR to the 2030 Concord General Plan EIR, the nearest location of naturally occurring asbestos mapped by the California Department of Conservation is approximately

[1] California State Water Resources Control Board, GeoTracker, accessed June 8, 2015. http://geotracker.waterboards.ca.gov/.

4.5 miles south of the City of Concord city limits (DMG 2000). Therefore, disturbing naturally occurring asbestos during project-related construction is not a concern.[1]

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

Less Than Significant Impact. Although most construction waste is expected to be non-hazardous, construction equipment used during construction activities could contain various hazardous materials (i.e., hydraulic fluid, diesel fuel, grease, lubricants, solvents, adhesives, paints, etc.), these materials are not considered to be acutely hazardous and would be used in accordance with the manufacturers' specifications and all applicable regulations. Upon completion (operation) of the proposed Project the routine transport of hazardous materials, albeit in small quantities, will continue similar in volume to pre-project conditions.

Construction and operational activities of the Project are not expected to generate, transport, or dispose of hazardous materials which would create a significant hazard to the public or the environment. As such, impacts would be less than significant.

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

Less Than Significant Impact. A search of the California State Water Resources Control Board (SWRCB) GeoTracker website (SWRCB 2015) was completed in June 2015. The database search was conducted to determine whether documentation exists related to the release of hazardous materials into the environment at the proposed Project site or on surrounding properties. Results indicated that no sites involved in the release of hazardous materials into the environment were identified on the proposed Project site.

The existing bridges are in developed areas and are subject to motorist traffic. Since leaded gasoline was introduced in the 1940s and used in vehicles through the 1980s, some potential exists for surface soils in the Project site to be contaminated with lead. The amount of lead in the soils in the Project site potentially exceeds the hazardous waste thresholds outlined in the lead variance plan issued to Caltrans by the DTSC and Aerially Deposited Lead (ADL) Soil Management Plan. The City would perform ADL spot checks as it deems necessary as a Best Management Practice (BMP) to ensure that construction workers are not exposed to soil that exceeds ADL thresholds. With implementation of such a BMP during construction, ADL exposure to construction workers would be reduced.

Project construction would require the use of heavy equipment and vehicles that use diesel fuel, gasoline, oil, and hydraulic fluid. Hazardous materials used during construction would be transported, used, and stored in accordance with state and federal regulations regarding hazardous materials. The proposed Project would not be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code 65962.5.

With implementation of the BMP discussed above impacts regarding the release of hazardous materials into the environment or construction worker exposure to hazardous materials would be less than significant.

[1] http://www.cityofconcord.org/pdf/dept/planning/eir/deir_dc2012.pdf

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

Less Than Significant Impact. Bridges 3, 7, and 10 are within 1/4 mile of a school (3: Clayton Valley High School, 7: Ygnacio Valley Elementary School, and 10: Ygnacio Valley Christian School and Silverwood Elementary School). However, as previously stated, consistency with the manufacturers' specifications and all applicable regulations will reduce the impact to less than significant.

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?

No Impact. A search of the California State Water Resources Control Board (SWRCB) GeoTracker website (SWRCB 2015) was completed in June 2015. The database search was conducted to determine whether documentation exists related to the release of hazardous materials into the environment at the proposed Project site or on surrounding properties. Results indicated that no sites involved in the release of hazardous materials into the environment were identified on the proposed Project site. Therefore, implementation of the proposed Project would not create a significant hazard to the public or the environment. No impacts would occur.

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?

Less Than Significant Impact. Buchanan Field Airport located at 550 Sally Ride Drive is located a mile west of the City. State law provides for a special planning process to assure consideration of airport interests in the formulation of local community plans. Pursuant to State law, the Contra Costa County Airport Land Use Commission (ALUC) has been established as an independent body to advise local jurisdictions, such as the City of Concord, on appropriate land use policy for the area near Buchanan Field Airport to assure development compatibility with planned airport operations. To aid in this task, the ALUC has adopted the Contra Costa County Airport Land Use Compatibility Plan (ALCUP), which covers the area near the airport. The plan identifies areas near the airport where structural height limits, public safety, and noise compatibility restrictions are applicable.

The Concord Development Code includes an Airport Overlay District that includes development standards for proposed projects within the Airport Influence Area of Buchanan Field Airport. The ALUCP requires land use applications to be reviewed by the ALUC and is intended to provide protection to people and property on the ground and to protect Buchanan Field Airport from the encroachment of non-compatible land uses that may interfere with its safe operation. Project sites 1, 2, 4, 5, 6, 7, and 8 appear to be within the Airport Influence Area.

This Project is consistent with land use assumptions evaluated in the 2030 Concord General Plan EIR. The General Plan EIR concluded that implementation of the policies and programs within the General Plan address potential airport hazards. Impacts would be less than significant.

f) For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. There are no private airstrips within the vicinity of the City of Concord. Thus, no impact would occur.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The City of Concord All-Hazards Emergency Plan, revised May 2008, addresses the City of Concord planned response to extraordinary emergency situations associated with natural disasters, technological incidents and nuclear emergency operations. The proposed Project does not include potential land use changes that would impair or physically interfere with the ability to implement the City's All-Hazards Emergency Plan. No impact would occur.

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?

No Impact. The Study Area is located in a highly urbanized area and is not surrounded by woodlands or vegetation that would provide fuel load for wildfires. According to the California Department of Forestry and Fire Protection, the City does not contain any land designated as a "Very High Fire Hazard Severity Zone."[1]

The proposed Project would not include the development of structures or endanger the lives of residents or construction workers if a wildland fire were to occur. No impact would occur.

[1] California Department of Forestry and Fire Protection, Contra Costa County Very High Fire Hazard Severity Zones in Local Responsibility Area Map, adopted November 7, 2007.

IX. HYDROLOGY AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
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)?	☐	☐	☐	☒
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?	☐	☒	☐	☐
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?	☐	☐	☒	☐
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?	☐	☒	☐	☐
f) Otherwise substantially degrade water quality?	☐	☒	☐	☐
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?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Setting

The proposed Project site is located within the jurisdiction of the San Francisco Regional Water Quality Control Board (SFRWQCB); which is under the direction of the California State Water Resources Control Board. Under the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act, the SFRWQCB has regulatory responsibility for protecting water quality.

Regional Hydrology

The City of Concord lies within the Mount Diablo and Walnut Creek watersheds. The Walnut Creek watershed encompasses 93,556 acres in Contra Costa County and is composed of several sub-watersheds. The southeast portion of the City of Concord lies largely within the Pine Creek and Concord Area sub-watersheds, with small areas of the City extending into the Grayson Creek and San Ramon sub-watersheds. The remainder of the City and the majority of the Concord Naval Weapons Station lie within the Mt. Diablo watershed, which extends from the north slope of Mount Diablo to Suisun Bay. The Willow Creek watershed, located west of the City, encompasses the northwest corner of the Planning Area along the shoreline of Suisun Bay Boundaries between these watersheds are created by the topographic features such as ridges and valleys, which shape surface water drainage patterns.

Groundwater

Concord is underlain by two groundwater basins, Clayton Valley and Ygnacio Valley, as defined by the California Department of Water Resources (DWR). The Clayton Valley groundwater basin is bounded by Suisun Bay to the north, Mt. Diablo creek to the east, the Concord Fault to the west, and the foothills of Mt. Diablo to the south. The Clayton Valley is underlain by thick alluvial deposits, which cover faulted and folded older rocks. The water bearing units are Quaternary-age and older alluvial deposits, which exceed 700 feet in depth. These units are hydraulically connected with Suisun Bay. The Ygnacio Valley groundwater basin is bounded by Suisun Bay to the north, Interstate 680 to the west, by the Concord Fault to the east and the basin extends south along the Walnut Creek channel and by the City of Walnut Creek to south. Walnut and Grayson creeks flow through the basin before draining into Pacheco Creek and then into Suisun Bay. The Ygnacio Valley groundwater basin is formed in a depression between the Berkeley Hills and the Mt. Diablo Range. Thick alluvial deposits cover folded and faulted older rocks. The water bearing units in the basin are from Quaternary deposits. The combined thickness of the water bearing deposits is over 700 feet. Aquifers in this basin are hydraulically connected to the Sacramento River (DWR, 2003).

Specific information on groundwater for the proposed Project site and surrounding area was not investigated because the Project is not expected to substantially affect groundwater resources. No wells would be constructed, and construction activities would not intercept or alter groundwater recharge, discharge, or flow conditions.

Floodplain. The Federal Emergency Management Agency (FEMA) has designated the Project area as shown in **Table 18: Flood Zones**.

Table 18: Flood Zones

Bridge Number	Flood Zone	Description
28C0091L, 28C0091R, 28C0183, 28C0224, 28C0357	A	Areas subject to inundation by the 1-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
28C0115, 28C0221, 28C0222, 28C0278, 28C0361	AE	Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.

Source: Federal Emergency Management Agency (FEMA) 100-Year Floodzone Map.

The City has adopted a Flood Management Ordinance and a Stormwater Management and Discharge Control Ordinance to manage storm water runoff. General Plan policies require adequate building setbacks for development adjacent to creek banks and engineering standards which protect against flooding. Other policies are also in place to reduce the potential impacts associated with stormwater runoff due to new or increased intensity of urban land uses.

Discussion

a) Violate any water quality standards or waste discharge requirements?

Less Than Significant with Mitigation Incorporated. The proposed Project has the potential to cause temporary water quality impacts during the construction phase due to de-watering and other activities. Water diversion may be required at 28C0091R, 28C0115, 28C0183, 28C0224, and 28C0278.

Sediments and other pollutants suspended in runoff would be carried downstream from the proposed Project, where if not controlled, could accumulate in downstream water courses and potentially harm downstream aquatic resources and degrade existing surface water quality.

Potential short-term water quality impacts from construction related activities at the Project site would be minimized and reduced through implementation of Best Management Practices (BMPs) and compliance with existing water quality regulatory requirements. Implementation of Mitigation Measures HYDRO-1 through HYDRO-3 would ensure that there are no impacts on water quality during construction of the proposed Project.

> **Mitigation Measure HYDRO-1:** The City of Concord shall prepare and implement construction site temporary Best Management Practices (BMPs) in compliance with provisions of the Caltrans Statewide NPDES Permit and any subsequent permit pertaining to construction of the proposed Project. The City shall submit a Notice of Construction (NOC) to the SFRWQCB at least 30 days prior to the commencement of construction and shall submit a Notice of Termination (NOT) to the SFRWQCB upon completion of construction activities. The temporary BMPs shall be installed prior to commencement of any

construction activities and shall be in place for the duration of the construction period. The removal of the BMPs and Project site cleanup shall be the final construction operations that occur.

Mitigation Measure HYDRO-2: The City of Concord shall incorporate Design Pollution Prevention (DPP) and Treatment Control BMPs into the Project design in accordance with the standards outlined in the Stormwater Quality Handbooks, Project Planning and Design Guide. The County shall coordinate with the SFRWQCB with respect to feasibility, maintenance, and monitoring of Treatment Control BMPs as set forth in Caltrans' Statewide Stormwater Management Plan (SWMP).

Mitigation Measure HYDRO-3: During dewatering activities, if necessary, the provision of the General Waste Discharge requirements for discharges to surface waters that pose an insignificant (de minimus) threat to water quality, Order No. R8-2003-0061 NPDES No. CAG99800, as they relate to construction activities, shall be implemented. A Notice of Intent (NOI) shall be submitted to the AFRWQCB at least three months prior to the start of dewatering activities. The City of Concord shall comply with all applicable provisions in the de minimus permit, including water sampling, analysis, and reporting of dewatering-related discharges.

Short-term impacts may occur with implementation of the proposed Project. The potential for accidental fuel/oil spills from construction equipment, erosion, and associated stormwater quality degradation may occur. Implementation of **Mitigation Measures HYDRO-1** through **HYDRO-3** would reduce short-term impacts to a less than significant level.

The potential for adverse long-term impacts to water quality would be eliminated with completion of the proposed Project. Long-term water quality impacts usually occur due to changes in stormwater drainage or increases in impervious surfaces. The proposed Project would not result in an increase in impervious surfaces or changes in stormwater drainage features; therefore, increases in stormwater generation and flow are not expected to occur. As a result, the proposed Project would not cause a permanent increase in degradation of water quality. Operational impacts would be less than significant.

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)?

No Impact. During construction activity minimal amounts of water may be required for dust control activities. Water required during construction activities would be transported to the proposed Project site by water trucks and stored in these trucks at the construction staging areas. Groundwater supplies would not be substantially depleted nor would interference of groundwater recharge occur due to water usage during Project construction. Once operational, the proposed Project would not require the use of water. No impact would occur.

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?

Less Than Significant with Mitigation Incorporated. The proposed Project has the potential to cause temporary drainage pattern impacts during the construction phase due to de-watering and other

activities. Water diversion may be required at 28C0091R, 28C0115, 28C0183, 28C0224, and 28C0278. However, **Mitigation Measures HYDRO-1** through **HYDRO-3** would be implemented and the use of construction BMPs would occur to ensure that the drainage pattern remains intact and that substantial on- or off-site erosion or siltation during construction does not occur. Once completed, the proposed Project would not increase the amount of impervious surfaces. The Project would not substantially alter the existing drainage pattern of the Project site or surrounding area resulting in substantial on- or off-site erosion or siltation. Impacts under this criterion would be less than significant with implementation of **Mitigation Measures HYDRO-1** through **HYDRO-3**.

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?

Less Than Significant Impact. As discussed above, slight changes in the existing drainage pattern may occur on and off-site during Project construction. However, these changes would be minimal and would not result in on- or off-site flooding. Impacts would be less than significant.

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?

Less Than Significant with Mitigation Incorporated. See response IX(a) and IX(c).

f) Otherwise substantially degrade water quality?

Less Than Significant with Mitigation Incorporated. See response IX(a).

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?

No Impact. No housing units are proposed as part of the Project. No impacts would occur.

h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Less Than Significant Impact. The Federal Emergency Management Agency (FEMA) Flood Insurance Study indicates that a portion of the Project area is within a 100-year floodplain. However, the project would not impede or redirect flood flows. The proposed bridges would maintain the capacity of the channel to convey the 100-year storm in compliance with City of Concord Municipal Code requirements. The overall effects of the Project to the floodplain would be less than significant.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding of as a result of the failure of a levee or dam?

No Impact. There are no dams or levees upstream of the City of Concord. Thus, no impact would occur.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. Although tsunamis can occur and cause tidal surges in San Francisco Bay, these events are extremely rare and would not result in wave run-up capable of causing flood damage within the city. San Francisco Bay greatly attenuates tsunamis that might reach the Golden Gate area. No bodies of water large enough to cause a seiche are present near the project site**.** No impact would occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING				
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Environmental Setting

The proposed Project includes maintenance and repairs on 10 existing bridges. The bridges are located in areas developed with residential, industrial, and commercial development. Table 19 shows the general plan and zoning designations in the Project site.

Table 19: General Plan and Zoning Designations

Bridge Project Number and Description	General Plan Designation	Zoning Designation
28C0091L – Concord Avenue over Walnut Creek	Open Space surrounded by West Concord Mixed-Use, Business Park, and Regional Commercial	Open Space
28C0091R – Concord Avenue over Walnut Creek	Open Space surrounded by West Concord Mixed-Use, Business Park, and Regional Commercial	Open Space
28C0115 – Ygnacio Valley Road over Galindo Creek	Public/Quasi-Public, Business Park	Industrial Business Park, Planned District, Public/Quasi-Public
28C0183 – Willow Pass Road over Walnut Creek	Open Space surrounded by West Concord Mixed-Use	Open Space
28C0221 – Court Lane over Galindo Creek	Low Density Residential	Residential Single-Family (minimum lot size 10,000)
28C0221 – St. Francis Drive over Galindo Creek	Low Density Residential	Residential Single-Family (minimum lot size 10,000)
28C0224 – Whitman Road over SDM Channel	Industrial Mixed-Use, Public/Quasi-Public, Medium Density Residential	Residential Single-Family (minimum lot size 10,000), Residential Medium Density, Industrial Mixed-Use, Public/Quasi-Public
28C0278 – Claudia Drive over Holbrook Channel	Low Density Residential	Residential Single-Family (minimum lot size 6,000), Neighborhood Commercial
28C0357 – San Miguel Road	Open Space surrounded by Low	Rural Residential, Open Space

over Pine Creek	Density Residential	
28C0361 – Concord Boulevard over Mount Diablo Creek	Open Space, Low Density Residential, and Medium Density Residential	Residential Medium Density, Residential Low Density, Open Space

Source: City of Concord 2030 General Plan, 2007; City of Concord Zoning Map, www.concordprospector.com, Accessed May 1, 2015.

Discussion

a) Physically divide an established community?

No Impact. The proposed Project would consist of repairs and maintenance on already existing deficient bridges. There would be no change in alignments. These bridges have been determined to require repairs under the Bridge Preventive Maintenance Program (BPMP). The repairs and maintenance on the bridges are intended to increase safety and would have no impact on connectivity. Therefore, implementation of the proposed Project would not divide an established community. Impacts would be less than significant.

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?

No Impact. The proposed Project would not involve a change in land use. The Project would not conflict with applicable land use plans, policies, or regulations. No impacts would occur.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The Project site is not subject to any local, regional, or State habitat conservation plans.

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

Environmental Setting

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel, and earth are also considered minerals by the California Department of Conservation when extracted by surface mining operations.

Existing mineral and aggregate resources in Concord include alluvial sand and gravel deposits located throughout the City. Areas in which significant mineral deposits are present, or where a high likelihood for their presence exists include developed residential areas east of Clayton Road between Bailey and Kirker Pass (zoned low density residential), and along the southern city limits (zoned rural residential, parks, rural conservation).

There are some mineral resources being mined east of Lime Ridge Open Space outside the City limits, but no mining occurs within the City.

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?

No Impact. The proposed Project site is not located within a mineral resource zone. In addition the Project consists of minor repairs and maintenance on an existing bridge in a developed area. There is no potential for mining in the developed area. Therefore, the proposed Project would not result in loss of availability of a known mineral resource that would be of value. No impact would occur.

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

No Impact. As discussed above, the proposed Project is not located in an area of locally-important mineral resource recovery sites. Implementation of the proposed Project would not result in the loss of such locally-important mineral resources. No impact would occur.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE				
Would the project result in:				
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?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒

Environmental Setting

The following section provides background information on construction and operational noise information, groundborne vibration information, and sensitive receptors adjacent to the proposed Project site.

Noise sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, churches, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks are considered noise-sensitive uses. The proposed Project would be developed in an urbanized area with residential and other sensitive receptors in close proximity to the Project site.

Construction and Operational Noise

Noise is defined as unwanted sound. Noise consists of any sound that may produce physiological damage and/or interfere with communication, work, rest, recreation or sleep. Several noise measurements scales exist that are used to describe noise in a particular location. A *decibel* (dB) is a unit of measurement that indicates the relative intensity of a sound. The 0 measurement on the dB

scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Noise level changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy while a 20 dB increase is 100 times more intense, and a 30 dB increase is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness to the human ear.

Sound intensity is normally measured through the *A-weighted sound level* (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive.

The proposed Project is located in the City of Concord and ambient noise is generated by typical activities and sources found in an urbanized setting. The primary existing noise source in the proposed Project vicinity is vehicle traffic, including cars, trucks, and motorcycles. The level of vehicular noise generally varies with the volume of traffic, the number of trucks or motorcycles, the speed of traffic, and the distance from the roadway.

Table 20: Typical Construction Equipment Noise Levels shows the noise levels of various construction equipment as measured from a distance of 50 feet.

Table 20: Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 ft)	Suggested Maximum Sound Levels for Analysis (dBA at 50 ft)
Pile Drivers, 12,000 to 18,000 ft-lb/blow	81–96	93
Rock Drills	83–99	96
Jackhammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79–86	82
Portable Generators	71–87	80
Rollers	75–82	80
Dozers	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoe	81–90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Noise Control for Buildings and Manufacturing Plants, Bolt, Beranek & Newman 1987.
ft-lb/blow = foot-pound per blow
ft = feet/foot
dBA = A-weighted decibels

Groundborne Vibration

Groundborne vibration can be a serious concern for residential areas and sensitive land uses. Some common sources of groundborne vibration include construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. Vibration is an oscillatory motion which can be described in terms of displacement, velocity, or acceleration. The response of humans, buildings, sensitive land use areas, and equipment vibration is more accurately described using velocity or acceleration. The Peak Particle Velocity (PPV) is used to describe construction-related vibrations. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration signal and is measured in inches/second. **Table 21: Vibration Source Levels for Construction Equipment** provides typical vibration levels in PPV generated by operating construction equipment as measured from 25 feet away.

Table 21: Vibration Source Levels for Construction Equipment

Type of Equipment	PPV at 25 feet (inches/second)
Pile Driver (Impact)	0.644-1.518
Pile Driver (sonic)	0.170-1.518
Clam shovel drop (slurry wall)	0.202
Hydromill (slurry wall-in soil)	0.008
Hydromill (slurry wall-in rock)	0.017
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment (FTA-VA-90-1003-06), May 2006, Table 12-2, pg. 12-12.

Noise and Vibration Regulations

Noise. Noise in the City of Concord is regulated by the City Municipal Code, the 2030 Concord General Plan, and the Concord 2030 Urban Areas General Plan Draft Environmental Impact Report, as discussed below.

Traffic Noise

According to the Concord General Plan, maximum noise levels of 60 dB are considered “normally acceptable” for unshielded residential development. Noise levels from 60 dB to 70 dB fall within the “conditionally unacceptable” range, and those in the 70 dB to 75 dB range are considered “normally unacceptable.”

Construction Noise

As stated in the City Municipal Code Section 18.150.130, noise resulting from site preparation and construction activities between the hours of 7:30 a.m. and 6:00 p.m. on weekdays (excluding holidays) are exempt from the City’s noise standards.

The City of Concord's Municipal Code Section 8.25.020 restricts the hours of all noise producing construction activities to 7:30 a.m. to 6:00 p.m., Monday through Friday in all districts; 8:00 a.m. to 5:00 p.m. Saturdays in all districts; and 8:00 a.m. to 5:00 p.m. on Sundays in residential districts (by homeowner, homeowner's contractor, and/or tenant) and commercial districts.

Vibration. The City of Concord Municipal Code 18.150.130 states, "All activities, processes, and uses shall not generate ground vibrations that are perceptible without instruments by a reasonable person at the property line of the subject site. Vibrations caused by temporary activities such as construction, demolition, and truck traffic are exempt from this standard but are subject to all conditions of any approved permit."

In most cases, the primary concern regarding vibration relates to potential damage effects. The American Association of State Highway and Transportation Officials (AASHTO) (1990) identifies maximum vibration levels for preventing damage to structures from intermittent construction or maintenance activities. **Table 22: Construction Vibration Maximum Velocity** summarizes the AASHTO maximum velocity levels.

Table 22: Construction Vibration Damage Maximum Velocity

Building Category	Maximum Velocity (PPV [in/sec])
Historic sites or other critical locations	0.1
Residential buildings, plastered walls	0.2–0.3
Residential buildings in good repair with gypsum board walls	0.4–0.5
Engineered structures, without plaster	1.0–1.5

Source: Caltrans Transportation and Construction Vibration Guidance Manual, September 2013. Pg. 25.
American Association of State Highway and Transportation Officials (AASHTO) (1990)

Project Construction

The following section explains the construction activities that will take place at the proposed Project site. Information in this section is based on the "Construction Noise Technical Memorandum" prepared by LSA Associates, Inc. for the project.

Concord Avenue – Walnut Creek – Bridge Number: 28C0091L

These repairs are expected to require the use of sandblasting (air compressors) equipment, jackhammers, and haul trucks.

Concord Avenue – Walnut Creek – Bridge Number: 28C0091R

These repairs are expected to require the use of sandblasting (air compressors) equipment, jackhammers, and haul trucks.

Ygnacio Valley Road – Galindo Creek – Bridge Number: 28C0115

These repairs are expected to require the use of jackhammers, haul trucks, and front-end loaders.

Willow Pass Road – Walnut Creek – Bridge Number: 28C0183

These repairs are expected to require the use of sandblasting (air compressors) equipment, jackhammers, haul trucks, and front-end loaders.

Court Lane – Galindo Creek – Bridge Number: 28C0221

These repairs are expected to require the use of front-end loaders and haul trucks.

St. Francis Drive – Galindo Creek – Bridge Number: 28C0222

These repairs are expected to require the use of front-end loaders and haul trucks.

Whitman Road – SDM Channel – Bridge Number: 28C0224

These repairs are expected to require the use of front-end loaders and haul trucks.

Claudia Drive – Holbrook Channel – Bridge Number: 28C0278

These repairs are expected to require the use of sandblasting (air compressors) equipment, jackhammers, haul trucks, and front-end loaders.

San Miguel Road – Pine Creek – Bridge Number: 28C0357

These repairs are expected to require the use of sandblasting (air compressors) equipment, jackhammers, haul trucks, and front-end loaders.

Concord Boulevard – Mount Diablo Creek – Bridge Number: 28C0361

These repairs are expected to require the use of front-end loaders and haul trucks.

Discussion

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?

Less Than Significant.

Short Term (Construction) Impacts. During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Two types of short-term noise impacts would occur during project construction.

The first type would be from construction crew commutes and the transport of construction equipment and materials to the different project sites, which would incrementally raise noise levels on access roads leading to the sites. Typically, pieces of heavy equipment will be moved on site, will remain for the duration of each necessary construction phase, and will not add to the daily traffic volume in the project vicinity. There is a potential for a high single-event noise exposure at a maximum level of 88 A-weighted decibels (dBA) maximum instantaneous noise level (L_{max}) from trucks passing at 50 feet. However, the projected construction traffic will be minimal when compared to existing traffic volumes on roadways throughout the City of Concord, and its associated long-term noise level change will not be perceptible. Therefore, short-term construction-related worker commutes and equipment transport noise impacts would be less than significant.

The second type of short-term noise impact is related to noise generated during bridge repairs. Bridge repairs are performed in discrete steps; each step of bridge repair has its own mix of equipment and, consequently, its own noise characteristics. These various repair operations would change the character of the noise generated at each project site and, therefore, the noise levels as construction progresses. Table 20 lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet from the equipment in operation.

The following identifies potential noise impacts from bridge repair activities as calculated at the nearest sensitive land use to each project site.

Concord Avenue – Walnut Creek – Bridge Number: 28C0091L

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 91 dBA L_{max} at a distance of 50 feet from the operating equipment.

There are no noise-sensitive receptors near the project site. The project is located more than 100 feet from commercial and industrial properties. At this distance, predicted maximum noise levels would attenuate to approximately 85 dBA L_{max}.

Concord Avenue – Walnut Creek – Bridge Number: 28C0091R

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 91 dBA L_{max} at a distance of 50 feet from the operating equipment.

There are no noise-sensitive receptors near the project site. The project is located more than 100 feet from commercial properties. At this distance, predicted maximum noise levels from repair activities would attenuate to approximately 85 dBA L_{max}.

Ygnacio Valley Road – Galindo Creek – Bridge Number: 28C0115

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 91 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptor to the north side of the bridge is an apartment complex, which is located approximately 130 feet from the potential bridge construction area. At this distance, predicted maximum noise levels from repair activities would attenuate to approximately 82 dBA L_{max}.

Willow Pass Road – Walnut Creek – Bridge Number: 28C0183

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 92 dBA L_{max} at a distance of 50 feet from the operating equipment.

There are no noise-sensitive receptors near the project site. The project is located more than 100 feet from commercial properties. At this distance, predicted maximum noise levels would attenuate to approximately 86 dBA L_{max}.

Court Lane – Galindo Creek – Bridge Number: 28C0221

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 90 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptor to the bridge is residential homes abutting each corner of the bridge, which is located approximately 50 feet from the potential bridge construction area. At this distance, predicted maximum noise levels would be approximately 90 dBA L_{max}.

St. Francis Drive – Galindo Creek – Bridge Number: 28C0222

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 90 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptor to the bridge is residential homes abutting each corner of the bridge, which is located approximately 50 feet from the potential bridge construction area. At this distance, predicted maximum noise levels would be approximately 90 dBA L_{max}.

Whitman Road – SDM Channel – Bridge Number: 28C0224

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 90 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptors to the channel are residential homes and a school land use near the channel bridge, which are located approximately 50 feet from the potential channel bridge construction area. At this distance, predicted maximum noise levels would be approximately 90 dBA L_{max}.

Claudia Drive – Holbrook Channel – Bridge Number: 28C0278

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 92 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptors to the bridge are residential homes abutting each corner of the bridge, which are located approximately 50 feet from the potential bridge construction area. At this distance, predicted maximum noise levels would be approximately 92 dBA L_{max}.

San Miguel Road – Pine Creek – Bridge Number: 28C0357

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 92 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptors to the bridge are residential homes located on each side of the bridge, which are located approximately 150 feet from the potential bridge construction area. At this distance, predicted maximum noise levels would attenuate to approximately 83 dBA L_{max}.

Concord Boulevard – Mount Diablo Creek – Bridge Number: 28C0361

Assuming each piece of construction equipment used at this site operates at full power simultaneously, the predicted combined maximum noise level during these bridge repair operations would be approximately 90 dBA L_{max} at a distance of 50 feet from the operating equipment.

The closest sensitive receptors to the bridge are residential homes located on each side of the bridge, which are located approximately 100 feet from the potential bridge construction area. At this distance, predicted maximum noise levels would attenuate to approximately 84 dBA L_{max}.

Although construction activities are exempt from noise standards in Concord between the hours of 7:00 a.m. and 6:00 p.m. on weekdays, the Project applicant would comply with all applicable local sound control and noise level rules, regulations, and ordinances in order to reduce exposure of the sensitive receptors to noise generated during construction of the proposed Project. In addition, the contractor will implement best management practices, such as the following:

- During all project site excavation and grading on site, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.

- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

With implementation of best management practices such as those indicated above, impacts regarding short-term noise generation (construction noise) would be less than significant.

Long-Term (Operational) Impacts. As shown in Section XVI, the proposed Project will not increase average daily traffic (ADT). Noise levels along the bridges would not increase upon completion and operation of the proposed Project. Long-term (operational) impacts would therefore be less than significant.

b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?

Less Than Significant Impact.

Short Term (Construction) Impacts. As previously stated, the proposed Project sites are located in developed areas. Construction equipment would be used during the development of the Project, such as front end loaders, haul trucks, and jackhammers, that could increase ground borne vibrations in the area. For example, as shown in Table 21, at 25 feet, loaded truck could generate a ground borne vibration level of 0.76 PPV, a jackhammer could generate a ground borne vibration level of 0.035 PPV, and a small bulldozer could generate a ground borne vibration level of 0.003 PPV.

The piece of equipment used at the bridges that will create the most ground borne vibrations is the loaded trucks. As shown in **Table 23: Ground Borne Vibration Levels for Sensitive Receptors at Various Distances for Loaded Trucks**, the ground borne vibration levels for a loaded truck range from 0.076 PPV at 25 feet to 0.008 PPV at 200 feet.

Table 23: Ground Borne Vibrations Levels for Sensitive Receptors at Various Distances for Loaded Trucks

Construction Equipment	PPV at 25 feet	PPV at 50 feet	PPV at 100 feet	PPV at 200 feet
Loaded Truck	0.076	0.035	0.017	0.008

Source:
LSA Associates, 2015
California Department of Transportation Environmental Program Environmental Engineering Noise, Vibration, and Hazardous Waste Management Office, Transportation- and Construction-Induced Vibration Guidance Manual, June 2004, pg. 26, Table 18: Vibration Source Amplitudes for Construction Equipment.
Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006, pg. 12-12, Table 12-2: Vibration Source Levels for Construction Equipment.

Vibration impacts are exempted during project construction in the City Municipal Code. However, damage to buildings was used to determine the significance of groundborne vibration levels generated from construction activities. All sensitive receptors were assumed to be residential buildings in good repair. As shown in Table 22, the maximum velocity level that would be acceptable to prevent damage to residential buildings in good repair would be 0.4 to 0.5 PPV.

28C0091L – Concord Avenue over Walnut Creek

The project is located more than 100 feet from commercial and industrial properties. At this distance, the ground borne vibration level would be less than 0.017 PPV, which would not cause building damage.

28C0091R – Concord Avenue over Walnut Creek

The project is located more than 100 feet from commercial properties. At this distance, the ground borne vibration level would be less than 0.017 PPV, which would not cause building damage.

28C0115 – Ygnacio Valley Road over Galindo Creek

The closest sensitive receptor to the north side of the bridge is an apartment complex, which is located approximately 130 feet from the potential bridge construction area. At this distance, the ground borne vibration level would be less than 0.017 PPV, which would not cause building damage.

28C0183 – Willow Pass Road over Walnut Creek

The project is located more than 100 feet from commercial properties. At this distance, the ground borne vibration level would be less than 0.017 PPV, which would not cause building damage.

28C0221 – Court Lane over Galindo Creek

The closest sensitive receptor to the bridge is residential homes abutting each corner of the bridge, which is located approximately 50 feet from the potential bridge construction area. At this distance, the ground borne vibration level would be approximately 0.035 PPV, which would not cause building damage.

28C0222 – St. Francis Drive over Galindo Creek

The closest sensitive receptor to the bridge is residential homes abutting each corner of the bridge, which is located approximately 50 feet from the potential bridge construction area. At this distance, the ground borne vibration level would be approximately 0.03527 PPV, which would not cause building damage.

28C0224 – Whitman Road over SDM Channel

The closest sensitive receptors to the channel are residential homes and a school land use near the channel bridge, which are located approximately 50 feet from the potential channel bridge construction area. At this distance, the ground borne vibration level would be approximately 0.035 PPV, which would not cause building damage.

28C0278 – Claudia Drive over Holbrook Channel

The closest sensitive receptors to the bridge are residential homes abutting each corner of the bridge, which are located approximately 50 feet from the potential bridge construction area. At this distance, the ground borne vibration level would be approximately 0.035 PPV, which would not cause building damage.

28C0357 – San Miguel Road over Pine Creek

The closest sensitive receptors to the bridge are residential homes located on each side of the bridge, which are located approximately 150 feet from the potential bridge construction area. At this distance, the ground borne vibration level would be less than 0.017 PPV, which would not cause building damage.

128C0361 – Concord Boulevard over Mount Diablo Creek

The closest sensitive receptors to the bridge are residential homes located on each side of the bridge, which are located approximately 100 feet from the potential bridge construction area. At this distance, the ground borne vibration level would be less than 0.017 PPV, which would not cause building damage.

Construction would not generate excessive ground borne vibration or noise levels and would not exposure persons to excessive vibration levels. They would be well below the threshold for building damage and would be exempted by the City Municipal Code. Impacts regarding the generation of ground borne vibrations would be less than significant.

Long-Term (Operational) Impacts. Roads are not typically a major source of ground borne noise or vibration. Ground borne vibration is generally associated with passenger vehicles and trucks traveling on roads with poor conditions, such as potholes, bumps, or other discontinuities in the road surface. The proposed project will improve the quality of the bridges, which would mean that there would be fewer discontinuities in the road surface that could generate ground borne vibration or noise.

As shown in Section XVI, the proposed Project would not increase average daily traffic (ADT). Ground borne vibration levels along the bridges would not increase upon completion and operation of the proposed Project. Long-term (operational) impacts would therefore be less than significant.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. As shown in Section XVI, the proposed Project will not increase average daily traffic (ADT). Thus, the proposed Project will not contribute to an increase in ambient noise levels in the area. Long-term (permanent) impacts would therefore be less than significant.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less Than Significant Impact. Please refer to question a. Temporary intermittent noise from short-term construction activities associated with the development of the proposed Project would occur. These activities would expose sensitive receptors near the Project site to intermittent short-term increase in ambient noise levels. Although construction noise levels are exempt under the City of Concord Code of Ordinances, best management practices would be implemented to further reduce the short-term noise exposure that the adjacent residential units to the proposed Project would be exposed to during construction activities. Impacts would be less than significant.

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?

Less Than Significant Impact. According to the Concord 2030 General Plan, maximum noise levels of 60 dB are considered “normally acceptable” for unshielded residential development. Noise levels from 60 dB to 70 dB fall within the “conditionally unacceptable” range, and those in the 70 dB to 75 dB range are considered “normally unacceptable.” For the Concord 2030 General Plan, noise exposure contours were modeled by Charles Salter Associates by applying the Federal Highway Administration’s noise modeling procedure. Noise contours along main roads throughout the City, including at the Project site, ranged from 60 to 65 dB CNEL.

Buchanan Field Airport is located a mile west of the City at 550 Sally Ride Drive. Pursuant to State law, the Contra Costa County Airport Land Use Commission (ALUC) has been established as an independent body to advise the City of Concord to ensure development compatibility with planned airport operations. To aid in this task, the ALUC adopted the Contra Costa County Airport Land Use Compatibility Plan (ALCUP) in 2000. The plan identifies areas near the airport where structural height limits, public safety requirements, and noise compatibility restrictions are applicable.

The ALCUP shows current noise contours for the airport. Project sites 1 and 2 (28C0091L and 28C0091R – Concord Avenue over Walnut Creek) appear to be within the typical airplane flight tracks and are expected to be subject to 55 to 60 dB CNEL.

Both existing noise and noise due to the airport are within a “normally acceptable” or “conditionally acceptable” range. This Project is consistent with land use assumptions and projections evaluated in the 2030 Concord General Plan and will comply with applicable development standards, structural height limits, public safety requirements, and noise compatibility restrictions. Construction workers and users of the bridge would not experience more noise while in the Project area than while anywhere else in the City of Concord. The Project would not add any noise-sensitive uses to the area. Impacts would be less than significant.

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?

No Impact. There are no private airstrips within the City of Concord. The closest private airstrip to the Project site is in Walnut Creek at the John Muir Walnut Creek Medical Center Heliport, approximately 4 miles from the Project site. The proposed project is not located in the vicinity of a private airstrip and it does not include any noise sensitive uses. Therefore, the project would not expose people residing or working in the project vicinity to excessive noise levels. Thus, no impact would occur.

XIII. POPULATION AND HOUSING

Would the project:

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

Environmental Setting

The proposed Project is located in the developed area of the City of Concord. Demolition of residential units would not be required for the implementation of the proposed Project.

Discussion

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)?

No Impact. Once completed, the new bridge would not result in an increase in vehicle traffic volume which could indirectly induce substantial population growth in the area around the Project site. Implementation of the proposed Project would not induce direct population growth to the residential areas adjacent to the Project. Therefore, the Project would not directly or indirectly induce population growth. No impact would occur.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. Implementation of the proposed Project would not displace these residential units and construction of replacement housing elsewhere would not be required. No impact would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. Implementation of the proposed Project would not displace residents living in nearby residential units. Therefore, implementation of the proposed Project would not displace substantial numbers or people, necessitating the construction of replacement housing elsewhere. No impact would occur.

XIV. PUBLIC SERVICES

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

Environmental Setting

The proposed Project site is located in residential neighborhoods in the City of Concord and is served by the following public services:

Fire Protection

The City of Concord is served by the Contra Costa County Fire Protection District. The Contra Costa County Fire Protection District currently staffs seven fire stations with a total of 21 personnel with jurisdiction over the City of Concord. Four of the seven stations are located within the City of Concord.

Law Enforcement

Law enforcement services in Concord are provided by the City of Concord Police Department. The California Highway Patrol, the Contra Costa County Sheriff, and the Concord Naval Weapons Station have cooperative agreements with the Concord Police Department and provide law enforcement services throughout the City.

Schools

Public schools (grade K-12) in the City of Concord are provided by the Mt. Diablo Unified School District. The District currently operates 14 elementary schools, 4 middle schools, and 8 high schools. The City is also home to a variety of private elementary and middle schools, two private high schools, one university, a number of trade and vocational schools, and several adult and special education schools (City of Concord, 2006).

Parks

For a discussion on the environmental setting of parks and recreation in the City of Concord and near the proposed Project site, see **Section XV Recreation**.

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection, police protection, schools, parks, other public facilities?

No Impact. . The proposed Project consists of minor repairs and maintenance on existing bridges. The proposed Project would not increase demand for public services, nor degrade the quality of existing public services in the area. No parks, recreational facilities or other public facilities are located near the proposed Project; therefore, such public services would not be impacted by the development of the Project. Impacts to public services would not occur with implementation of the proposed Project.

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

Environmental Setting

The existing Concord parks and recreation system is comprised of 22 community and neighborhood parks and various specialized recreation facilities, ranging in size from 0.2 acre to 126 acres. Recreation and Parks operates and maintains four community parks, two open space areas, 17 neighborhood parks, one skate park, a youth sports complex, and Krueger Fields. The City also operates and maintains the Diablo Creek Golf Course, Sleep Train Pavilion, Centre Concord, and Todos Santos Plaza. Recreation and Parks also organizes and manages sports programs, after-school care, a variety of leisure classes, and Camp Concord. In addition, Parks and Recreation hosts a variety of special events such as the Farmer's Market in Todos Santos Plaza, July 4th Jubilee and Parade, and National Night Out.

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The project would not include residential units that would increase the use of existing neighborhood/regional parks or other recreational facilities. Therefore, implementation of the proposed Project would not increase the use of such facilities so that substantial deterioration of the facility would occur or be accelerated. No impact would occur.

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?

No Impact. Recreational facilities would not be developed as part of this proposed Project nor would such facilities need to be constructed or expanded. Therefore, implementation of the proposed Project would not include such facilities which might have an adverse physical effect on the environment. No impact would occur.

XVI. TRANSPORTATION/TRAFFIC

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
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?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Environmental Setting

The proposed Project is located on ten sites throughout the City. Information on the roads is provided in **Table 24: Road Information**. As shown in Table 24, the roads vary from residential to regional roads with varying traffic volumes and speed limits.

Table 24: Road Information

Bridge Number	Classification	Average Daily Traffic Volumes by Year	Posted Speed Limit	2030 Projected Daily Volume
Bridge 28C0091L and 28C0091R	Community: Streets serving and connecting to work, regional shopping, downtown, office, and civic destinations that are accessed by people coming from throughout Concord; medium to high volume of traffic with slow to moderate speeds; extensive vehicle and transit use, as well as extensive bicycle and pedestrian uses.	25,001-35,000 (2008)	40 mph	29,332
Bridge 28C0115	Regional: High volume corridors with moderate to higher speeds serving vehicles traveling through Concord and beyond.	> 35,000 (2005)	45 mph	Not analyzed
Bridge 28C0183	Regional: High volume corridors with moderate to higher speeds serving vehicles traveling through Concord and beyond.	25,001-35,000 (2008)	35 mph	Not analyzed
Bridge 28C0221	Residential: Quiet neighborhood streets serving walkers, cyclists, and drivers with low traffic volumes and slow speeds.	No count	25 mph	Not analyzed
Bridge 28C0222	Residential: Quiet neighborhood streets serving walkers, cyclists, and drivers with low traffic volumes and slow speeds.	No count	25 mph	Not analyzed
Bridge 28C0224	Residential: Quiet neighborhood streets serving walkers, cyclists, and drivers with low traffic volumes and slow speeds.	2,000-15,000 (2005)	35 mph	Not analyzed
Bridge 28C0278	Residential: Quiet neighborhood streets serving walkers, cyclists, and drivers with low traffic volumes and slow speeds.	No count	25 mph	Not analyzed
Bridge 28C0357	Neighborhood: Streets serving and connecting to residential areas with destinations such as homes, schools, parks, and neighborhood retail; medium volume of traffic with slow to moderate speeds; significant walking and biking uses, in addition to autos.	No count	25 mph	Not analyzed
Bridge 28C0361	Neighborhood: Streets serving and connecting to residential areas with destinations such as homes, schools, parks, and neighborhood retail; medium	15,001-25,000 (2005)	35 mph	Not analyzed

	volume of traffic with slow to moderate speeds; significant walking and biking uses, in addition to autos.			

Source: City of Concord 2005 and 2008 Traffic Counts and Posted Speed Limits, http://www.cityofconcord.org/pdf/living/traffic.pdf, Accessed May 7, 2015. City of Concord 2030 General Plan. City of Concord Urban Area General Plan Update Draft Environmental Impact Report, 2005.

According to the 2030 General Plan, the benchmark for the evaluation of intersections and roadway segments is LOS D.

Discussion

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?

Less Than Significant Impact. A small volume of traffic would be generated during construction of the proposed Project due to the increase in vehicle trips associated with construction equipment and trucks. However, the number of vehicles would be minimal (e.g., staging construction at the Project site would eliminate vehicle trips during construction) and the demolition/construction period would be of a temporary duration. Construction related impacts to traffic and circulation along the above roads and surrounding roadways would be less than significant.

Once completed the proposed project would not generate an increase in traffic volumes. Operational-related impacts to traffic and circulation would be less than significant.

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?

Less Than Significant Impact. As described above, construction activities associated with development of the proposed Project would generate an increase in vehicular traffic associated with construction trucks/equipment and personnel traveling to and from the Project site. However, the increase in traffic would be minimal during construction activities. Once completed, the proposed Project would not contribute to the estimated future volumes along the roads. Therefore, the Project would not result in an increase in Level of Service (LOS) standards established by the City of Concord. Impacts would be less than significant.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

No Impact. The proposed Project does not include the development of any tower or tall structures that would impact air traffic patterns, including either an increase in air traffic levels or change in location that would result in substantial air safety risks. No impact would occur.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed Project consists of repairs and maintenance to existing bridges. There will be no change in alignments or design features. Implementation of the proposed Project would not substantially increase hazards due to design features or incompatible uses. No impact would occur.

e) Result in inadequate emergency access?

No Impact. No part of the proposed Project would result in the development of uses or facilities that would degrade emergency access. Therefore, no impact would occur.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

No Impact. The City is currently (2015) in the process of writing a City-wide Bicycle, Pedestrian, and Safe Routes to Transit Plan. The plan will be used as a blueprint to develop a network that promotes safe alternative modes of transportation and helps position the City for future funding for bicycle projects and roadway improvements benefiting the entire community. The project began in 2014 and is anticipated for completion sometime in mid-2016.

The proposed Project consists of repairs and maintenance on existing bridges. The proposed Project will have no impact on policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. No impact would occur.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

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

Environmental Setting

This setting describes the utility services (potable and non-potable water service, wastewater service, solid waste disposal service, and electric/natural gas service) that are located in the area of the proposed Project site.

Potable and Non-Potable Water Service

The Contra Costa Water District (CCWD) acts as the City's water supplier, providing water service to the City from the Sacramento/San Joaquin Delta. CCWD serves treated and raw (untreated) water to approximately 500,000 people in a service area covering 137,127 acres in the central and eastern Contra Costa County (CCWD, 2014 Annual Report).

CCWD operates the jointly owned Randall Bold Water Treatment Plant, which provides treated water to Antioch, Diablo Water District (Oakley), and Brentwood as well as CCWD's Treated Water

Service Area (which includes the City of Concord). It also owns and operates the Bollman Treatment Plant, which supplies treated water to CCWD's treated water service area.

Wastewater Service
The Central Contra Costa Sanitary District (CCCSD) provides wastewater treatment service to the City. Wastewater within CCCSD is primarily conveyed to the Central Contra Costa Sanitary District Treatment Plant (CCCSDTP) through pipes by the force of gravity. Where hills prevent natural flow, pumping facilities are used to convey water over these inclines. Currently, there are 18 pump stations within the CCCSD used to collect and convey waste to the CCCSDTP for treatment.

Opened in 1948, and upgraded several times in its 64-year history, the CCCSDTP treats an average of approximately 35.6 million gallons of wastewater per day generated in a 146-square-mile area by approximately 476,400 residents and 3,000sum businesses. Located in Martinez, the plant has a treatment capacity of 55 million gallons per day (mgd) and 240 mgd of wet weather flow. The Plant Operations Building houses the Control Center, a state-of-the-art computerized system that monitors and controls every phase of the treatment process. The facility is staffed 24 hours a day, 365 days a year.

The District collects and cleans wastewater in central Contra Costa County, moving it through CCCSD's 1,500 miles of sewer lines, finally arriving at the plant's headworks to begin treatment. [1] MMost of the wastewater is treated to a secondary level, disinfected by ultraviolet light, and then discharged into Suisun Bay. Approximately 600 million gallons per year are treated to a tertiary level through additional filtration and disinfection before being distributed as Recycled Water for landscape irrigation, industrial processes, and plant operations.

Solid Waste Disposal Service
Solid waste generated by the proposed Project during construction activities would be collected and transported to the Keller Canyon Landfill, located at 901 Bailey Road in Pittsburg. The Keller Canyon Landfill is a Class II intake facility with a permitted capacity of 75,018,280 cubic yards. The remaining capacity at the Keller Canyon Landfill is approximately 63,400,000 cubic yards, or 85 percent of the landfill's total capacity.[3] The estimated closure year for the facility is 2030.[4] The Keller Canyon Landfill is permitted to intake agricultural wastes, construction and demolition wastes, industrial waste, mixed municipal waste, and sludge.

Electric and Natural Gas Service
Pacific Gas and Electric (PG&E) is the electric service provider in the City of Concord. The proposed Project site is within the service boundary of PG&E for electrical and natural gas service.

<u>Discussion</u>

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

No Impact. The proposed Project site is located within the jurisdiction of the San Francisco Regional Water Quality Control Board (SFRWQCB); which is under the direction of the California State Water

[1] Pipeline Spring 2015. http://www.centralsan.org/documents/Pipeline_Spring_2015.pdf

[3] Concord 2014-2022 Housing Element Initial Study and Environmental Checklist. Email correspondence between Sal Coniglio, Diversion Facility & Operations Manager, Contra Costa Waste Service and Alex Lopez, PlaceWorks, September 8, 2014.

[4] CalRecycle. 2014. Solid Waste Information System Facility/Site Listing. Accessed: February 28, 2014.

Resources Control Board. Under the federal Clean Water Act and the California Porter-Cologne Water Quality Control Act, the SFRWQCB has regulatory responsibility for protecting water quality.

Construction and operational activities associated with Project implementation would not generate wastewater that would require disposal. Septic tanks are not proposed as part of the Project. Therefore, implementation of the proposed Project would not result in impacts to wastewater.

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?

No Impact. Please see Section XVII(a) above. Furthermore, the proposed Project would have no impact on water or wastewater treatment facilities.

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?

No Impact. Implementation of the proposed Project would not require the construction of new stormwater drainage facilities. All stormwater drainage facilities in the Project area would remain intact and would not be changed during construction and operational activities. Work would occur in the confines of the creeks during Project construction; however, water and drainage flows along the creek bed would not be impeded. Expansion of existing facilities would not be required due to implementation of the proposed Project. Therefore, no impacts would occur.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. Water would only be needed for construction of the proposed Project during dust controlling activities. Any water that would be needed during construction would be minimal in quantity and trucked in and stored in a water storage truck in the construction staging area within the Project boundary. Water would not be used once the proposed Project becomes operational. Sufficient water supplies would be available during Project construction from existing entitlements and resources and no new or expanded entitlements would be need due to implementation of the proposed Project. Impacts would be less than significant.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The proposed Project would not produce wastewater; therefore, the proposed Project would not result in an impact to wastewater treatment capacity.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Solid waste generated by the proposed Project would be limited to construction debris, including asphalt and concrete, generated by the construction and removal of the old bridge. Solid waste disposal would occur in accordance with federal, state and local regulations. Disposal would occur at permitted landfills. Therefore, the proposed Project would not generate the need for a new solid waste facility and the proposed Project's impacts would be less than significant.

g) Comply with federal, State, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The proposed Project would conform to all applicable local, state and federal solid waste regulations; therefore, the impact would be less than significant.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
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?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Environmental Setting

The Mandatory Findings of Significance section discusses the potential of the proposed Project to degrade the quality of the environment and any biological habitats. Impacts on a cumulative basis as well as the proposed Project's potential to result in any environmental impacts which would cause substantial direct or indirect adverse impacts on human beings are also discussed.

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?

Less Than Significant Impact with Mitigation Incorporated. As discussed throughout this checklist, the proposed Project has the potential to result in adverse physical effects on the environment; however, with the implementation of the proposed mitigation measures, the proposed Project is not expected to degrade the quality of the environment. Furthermore, the proposed Project is not expected to substantially reduce the habitat or affect populations of any fish or wildlife species (see Section IV) or eliminate important examples of the major period of California history or prehistory (see Section V). Full implementation of the proposed mitigation measures would result in a ***less than significant*** impact.

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.)

Less Than Significant Impact. The impacts of the proposed Project would be individually limited and would not be cumulatively considerable. The proposed Project would include repairs and maintenance on existing bridges. All environmental impacts that could occur as a result of the proposed Project would be reduced to a ***less than significant*** level with implementation of the mitigation measures recommended throughout this Initial Study. When viewed in conjunction with other closely related past, present or reasonably foreseeable future projects, development of the proposed Project would not cumulatively contribute to impacts.

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

Less Than Significant Impact. The purpose of the proposed Project is to repair various bridge deficiencies at 10 bridges in the City. As described in this Initial Study, implementation of the proposed Project could result in temporary aesthetic, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, noise, transportation/traffic, and utilities and service systems impacts as a result of development of the proposed Project. Implementation of the mitigation measures recommended in this Initial Study, compliance with City of Concord regulations, and application of standard construction practices would ensure that the proposed Project would not result in environmental impacts that would cause substantial direct or indirect adverse impacts on human beings.

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APPENDIX A – NATURAL ENVIRONMENT STUDY & BIOLOGICAL ASSESSMENT

Natural Environment Study

Concord Bridge Repairs

Bridge No. 28C0091L, 29C0091R, 28C0115, 28C0183, 28C0221, 29C0222. 28C0224, 29C0278, 28C0357, 28C0361

City of Concord

Contra Costa County, California

BPMP-5134 (039)

March 2015

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Natural Environment Study

STATE OF CALIFORNIA
Department of Transportation
City of Concord
U.S. Department of Transportation
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Summary

The City of Concord (City), in conjunction with the California Department of Transportation (Caltrans), proposes to repair various bridge deficiencies at 10 bridges in the City.

These 10 bridges are part of a larger project that includes a total of 17 bridges. An environmental documentation strategy was developed to expedite environmental clearance for the first 7 bridges since the repairs would result in little to no environmental impacts and would not require Section 7 consultation with the United States Fish and Wildlife Service (USFWS). Due to minimal impacts, a Natural Environment Study (Minimal Impacts) (NES[MI]) was prepared and approved for the first 7 bridges on November 15, 2012. The remaining 10 bridges, which would require Section 7 consultation with USFWS, are the subject of this Natural Environmental Study (NES). Additionally, a Biological Assessment has been prepared for the 10 bridges and is being reviewed by Caltrans.

Proposed bridge repairs vary greatly at each location and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping.

The Biological Study Area (BSA) at each bridge includes the project footprint, all access and staging areas, and lands beyond the footprint to the edge of the road right-of-way that could potentially be affected by project construction and/or were determined necessary to inventory in order to perform an adequate analysis of project impacts. The majority of the BSA at each bridge is either developed or consists of ruderal grasslands and disturbed, sparsely vegetated areas. The only natural communities within the BSA are associated with the channels below some of the bridge crossings and include annual brome grassland, black willow riparian, Valley oak riparian, and cattail marsh.

Special status wildlife species that may occur in the BSA, or in the vicinity, include several bat species, San Joaquin pocket mouse (*Perognathus inornatus*), Cooper's hawk (*Accipiter cooperii*), tricolored blackbird (*Agelaius tricolor*), short-eared owl (*Asio flammeus*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), Pacific pond turtle (*Emys marmorata*), California red-legged frog (*Rana draytonii*) (CRLF), and central California coast steelhead (*Oncorhynchus mykiss*) (CCC steelhead). Nesting birds may also be present in the Valley oak woodland and riparian

communities adjacent to the BSA. No special status plants are expected to occur in the BSA.

Some of the species listed above are federally listed species under the Federal Endangered Species Act (FESA). The proposed project may affect, and is likely to adversely affect, CRLF, a species listed as threatened under FESA. A Biological Assessment will be submitted to the USFWS in support of Section 7 consultation for CRLF. The project will implement measures which have been developed from the provisions of the CRLF “Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration’s Federal Aid Program (8-8-10-F-58)” dated May 4, 2011 and issued by USFWS Ventura Office.

The BSA included habitat for CCC steelhead, a species listed as threatened under FESA. The project includes measures to avoid and minimize project effects to this species and their habitat. Caltrans conducted technical assistance coordination with NMFS. As a result, it is determined the project will have “no effect” to CCC steelhead with the implementation of avoidance and minimization measures. Section 7 consultation is not required.

The project will result in permanent and temporary impacts to wetlands and non-wetland waters. The project is likely to require an Army Corps of Engineers Nationwide Permit, a Water Quality Certification from the Regional Water Quality Control Board, and a California Department of Fish and Wildlife Lake and Streambed Alteration Agreement.

The proposed project includes numerous avoidance and minimization measures for species status species and habitat to reduce the potential for adverse effects.

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List of Abbreviated Terms

ACOE	Army Corps of Engineers
ac	acre(s)
BA	Biological Assessment
BMP	Best Management Practices
BSA	Biological Study Area
BPMP	Bridge Preventative Maintenance Program
CDFW	California Department of Fish and Wildlife
City	City of Concord
Caltrans	California Department of Transportation
CCC steelhead	Central California Coast steelhead
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CRLF	California red-legged frog
CWA	Clean Water Act
DPS	Distinct Population Segment
EFH	essential fish habitat
ESA	Environmentally Sensitive Area
EO	Executive Order
FESA	Federal Endangered Species Act
MBTA	Migratory Bird Treaty Act
mi	mile(s)
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NES(MI)	Natural Environment Study (Minimal Impacts)
NMFS	National Marine Fisheries Service
NWP	Nation Wide Permit
OHWM	ordinary high water mark
PCWQCA	Porter-Cologne Water Quality Control Act
RSP	rock slope protection
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
USFWS	United States Fish and Wildlife Service
WPCP	Water Pollution Control Plan

Chapter 1 – Introduction

The City of Concord (City), in conjunction with the California Department of Transportation (Caltrans), proposes to repair various bridges deficiencies at 10 bridges in the City.

Although these 10 bridges are part of a larger project that includes 17 bridges, an environmental documentation strategy has been developed to sort the bridge repairs into two categories based on the proposed work at each bridge and whether or not consultation under Section 7 of the Federal Endangered Species Act (FESA) would be required. Those bridges not requiring Section 7 consultation were documented in a Natural Environment Study (Minimal Impacts) (NES [MI]) while the remaining bridges will be documented in this Natural Environment Study (NES) and a Biological Assessment (BA).

The City will serve as a lead agency for the California Environmental Quality Act (CEQA) review while Caltrans will be the lead agency for the National Environmental Policy Act (NEPA).

1.1 Project History

The project proposes miscellaneous repairs to 10 bridges within the City. These bridges have been determined to require repairs under the Bridge Preventive Maintenance Program (BPMP).

1.2 Project Description

The project consists of a single build alternative which includes repairs which vary and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping.

Brief descriptions of the proposed repairs at each of the 10 bridges are provided below:

1. **28C0091L** – *Concord Avenue over Walnut Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, removal, and reconstruction of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Repairs below deck consist of repairs to spalls on the abutments and piers. Work under the bridge will be accomplished with hand tools and ladders. Staging will occur on adjacent private parking lots and access will be from trails/roadway on both ends of the bridge. Work is expected to take 25 working days to complete.

2. **28C0091R** – *Concord Avenue over Walnut Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, removal, and reconstruction of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include replacement of rock slope protection (RSP) at piers, replacement/repair of retaining walls, repair of concrete spalls at pier walls and abutments, and repair I-beam damage. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on adjacent private parking lots and access will be from trails/roadway on both ends of the bridge. Work is expected to take 35 working days to complete.

3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include construction of overside drain to reroute roadway surface drainage and repair of AC dike. Below deck repairs include RSP placement at upstream and downstream ends of the culvert, and coring through downstream retaining walls and tieback placement as well as repair of spalled concrete surfaces. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on the north side of the culvert and access will be from roadways on both ends of the bridge. Work is expected to take 16 working days to complete.

4. **28C0183** – *Willow Pass Road over Walnut Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, repair of metal bridge railing, removal, and reconstruction of portions of the sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include RSP for erosion control, repair of spalled concrete surfaces, and rehabilitation of joints between abutment 1 and pier 4. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on adjacent private parking lots and access will be from Iron Horse bike trail on the west side of the bridge and private parking areas on the east side of the bridge. Work is expected to take 34 working days to complete.

5. **28C0221** – *Court Lane over Galindo Creek* - Repairs are planned above and below the bridge deck. Above deck repairs is limited to tree removal. Below deck repairs include RSP for erosion control and repair of concreted rock below headwall. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take 12 working days to complete.

6. **28C0222** – *St. Francis Drive over Galindo Creek* - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include RSP for erosion control, construction of shotcrete lagging and wing walls, and removal of concrete. Work under the bridge will be accomplished with a loader/excavator, concrete truck (parked on the bridge) with hose, and hand tools. Staging will occur on the street and access will be from the street. Work is expected to take 18 working days to complete.

7. **28C0224** – *Whitman Road over SDM Channel* - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of chain link fence posts. Below deck repairs include removal of unsound concrete at spall locations and cleaning/patching areas where reinforcement is exposed. Work under the bridge will be accomplished with hand tools but will require water diversion. Work is expected to take a total of 8 working days to complete.

8. **28C0278** – *Claudia Drive over Holbrook Channel* - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of portions of sidewalks that have been damaged by settlement. Below deck repairs include removal and replacement of unsound concrete on soffit and pier walls and around the utility opening. Work under the bridge will be accomplished with hand tools but will require water diversion. Work is expected to take a total of 8 working days to complete.

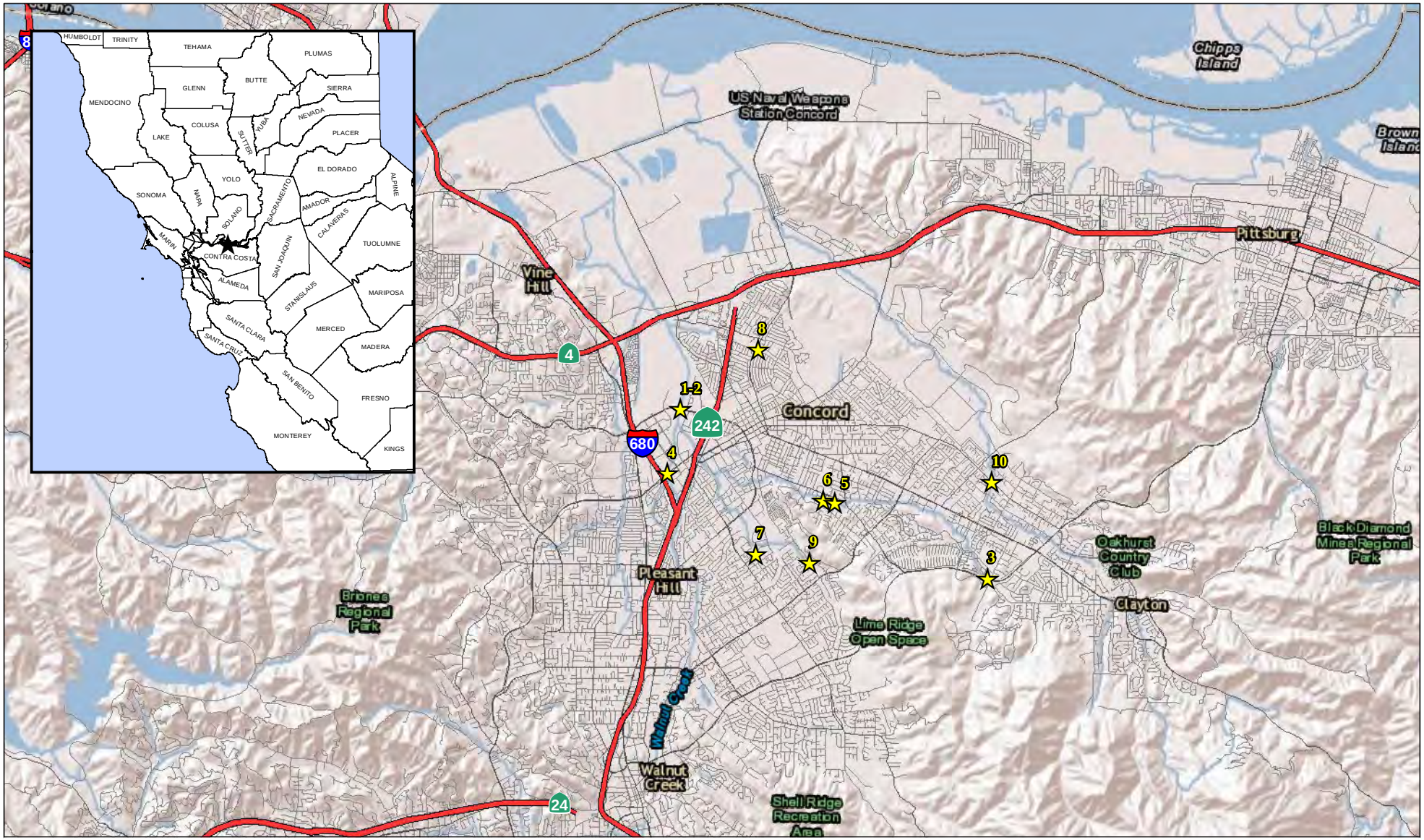
9. **28C0357** – *San Miguel Road over Pine Creek* - Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of chain link fencing. Below deck repairs include removal and replacement of the East and West parapet wall of the culvert, removal and replacement of unsound concrete on the culvert and retaining wall, and replacement of a joint on the east side of the structure. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take a total of 16 working days to complete.

10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* - Repairs are planned below the bridge deck. Repairs include rock slope protection rehabilitation and placement. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take a total of 8 working days to complete.

Project design plans for each bridge are included in Appendix A.

1.2.1 PROJECT LOCATION

The 10 bridges are located in the City of Concord in Contra Costa County. All of the bridges are located in urban locations throughout the City (Figures 1 and 2).



LEGEND

★ **Bridge Locations**

1-2. Concord Ave at Walnut Creek

3. Ygnasio Valley Rd at Galindo Creek

4. Willow Pass Rd at Walnut Creek

5. Court Lane at Galindo Creek

6. Saint Francis Dr at Galindo Creek

7. Whitman Rd at SDM Channel

8 Claudia Ave at Holbrook Channel

9. San Miguel Bridge at Pine Creek

10. Concord Blvd at Mount Diablo Creek

0 1 2
MILES

SOURCE: ESRI Imagery (4/2008)

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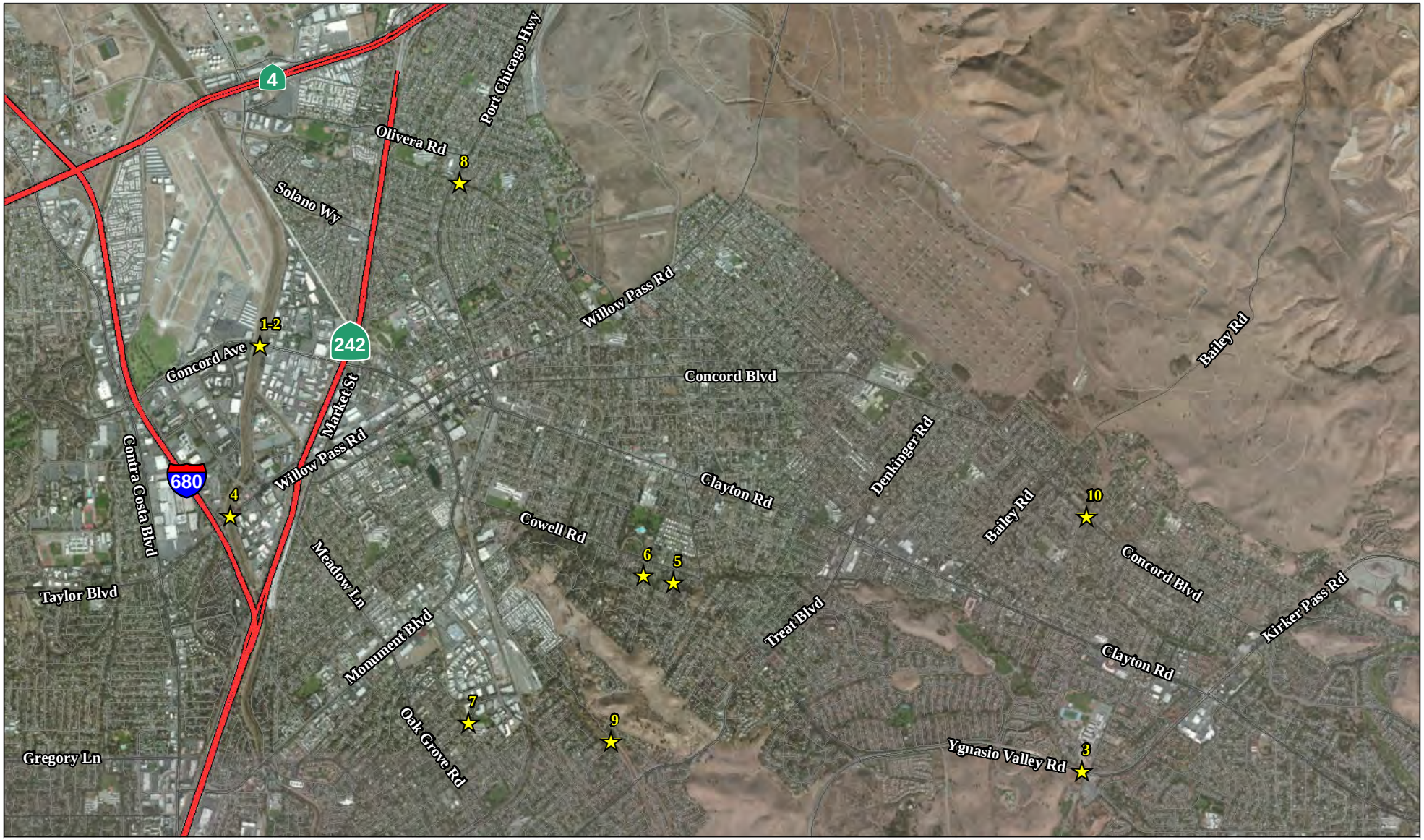
FIGURE 1

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Project Location Map



LEGEND

Bridge Locations

1-2. Concord Ave at Walnut Creek

3. Ygnasio Valley Rd at Galindo Creek

4. Willow Pass Rd at Walnut Creek

5. Court Lane at Galindo Creek

6. Saint Francis Dr at Galindo Creek

7. Whitman Rd at SDM Channel

8 Claudia Ave at Holbrook Channel

9. San Miguel Bridge at Pine Creek

10. Concord Blvd at Mount Diablo Creek

0 2000 4000
FEET

SOURCE: ESRI Aerial Imagery (5/2010)

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FIGURE 2

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Project Vicinity Map

Chapter 2 – Study Methods

2.1 Regulatory Requirements

2.1.1. SPECIAL STATUS SPECIES

Special status species include plants and animals that are: 1) listed as rare, threatened, or endangered by United States Fish and Wildlife Service (USFWS) or California Department of Fish and Wildlife (CDFW) under State or federal endangered species acts; 2) are on formal lists as candidates for listing as threatened or endangered; 3) are on formal lists as species of concern; or 4) are otherwise recognized at the State, federal, or local level as sensitive.

2.1.1.1. Federal and California Endangered Species Acts

Under FESA, it is unlawful to “take any species listed as threatened or endangered”. “Take” is defined as to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” An activity is defined as “take” even if it is unintentional or accidental. Take provisions under FESA apply only to listed fish and wildlife species under the jurisdiction of the USFWS and/or the National Oceanic & Atmospheric Administration, National Marine Fisheries Service (NMFS). Consultation with USFWS or NMFS is required if a project “may affect” a listed species.

When a species is listed, the USFWS and/or the NMFS, in most cases, must officially designate specific areas as critical habitat for the species. Consultation with USFWS and/or the NMFS is required for projects that include a federal action or federal funding if the project may affect designated critical habitat.

Under the California Endangered Species Act (CESA), it is unlawful to “take” any species listed as rare, threatened, or endangered. Under CESA, “take” means to “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”. CESA take provisions apply to fish, wildlife, and plant species. Take may result whenever activities occur in areas that support a listed species. Consultation with CDFW is required if a project will result in “take” of a listed species.

2.1.1.2. Magnuson-Stevens Fishery Conservation and Management Act

Under the Magnuson-Stevens Fishery Conservation and Management Act (MSA), essential fish habitat (EFH) must be designated in every fishery management plan.

EFH includes “…those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The MSA requires consultation with NMFS for projects that include a federal action or federal funding and may adversely modify EFH.

2.1.2. Waters of the U.S. and Other Jurisdictional Waters

2.1.2.1. Army Corps of Engineers

Under Section 404 of the Clean Water Act (CWA), the Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into waters of the U.S. Waters of the U.S. are those waters that have a connection to interstate commerce, either direct via a tributary system or indirect through a nexus identified in the ACOE regulations. In non-tidal waters, the lateral limit of jurisdiction under Section 404 extends to the ordinary high water mark (OHWM) of a waterbody or, where adjacent wetlands are present, beyond the OHWM to the limit of the wetlands. The OHWM is defined as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area” (33 CFR 328.3). In tidal waters, the lateral limit of jurisdiction extends to the high tide line or, where adjacent wetlands are present, to the limit of the wetlands.

Wetlands

Wetlands are defined as “those 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 a life in saturated soil conditions”.

Non-wetland Waters

Nonwetland waters essentially include any body of water, not otherwise exempted, that displays an OHWM.

2.1.2.2. Regional Water Quality Control Board

Under Section 401 of the CWA, the State Water Resources Control Board must certify all activities requiring a 404 permit. The Regional Water Quality Control Board (RWQCB) regulates these activities and issues water quality certifications for those activities requiring a 404 permit. In addition, the RWQCB has authority to regulate the discharge of “waste” into waters of the State pursuant to the Porter-Cologne Water Quality Control Act (PCWQCA).

2.1.2.3. California Department of Fish and Wildlife

CDFW, through provisions of Section 1602 of the California Fish and Game Code, is empowered to issue agreements for any alteration of a river, stream, or lake where fish or wildlife resources may be substantially adversely affected. Streams (and rivers) are

defined by the presence of a channel bed and banks, and at least an ephemeral or intermittent flow of water. CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by CDFW.

CDFW generally includes, within the jurisdictional limits of streams and lakes, any riparian habitat present. Riparian habitat includes willows, cottonwoods, and other vegetation typically associated with the banks of a stream or lake shoreline. In most situations, wetlands associated with a stream or lake would fall within the limits of riparian habitat. Thus, defining the limits of CDFW jurisdiction based on riparian habitat will automatically include any wetland areas. Riparian communities may not fall under ACOE jurisdiction unless they are below the OHWM or classified as wetlands.

2.1.2.4. Executive Order 11990: Protection of Wetlands

Executive Order (EO) 11990 mandates leadership on the part of federal agencies to reduce loss and degradation of wetlands and to preserve and enhance the beneficial values and functions of wetlands. Each federal agency “shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds that (1) there is no practicable alternative to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use”.

2.1.3. MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) prohibits actions that will result in “take” of migratory birds, their eggs, feathers, or nests. “Take” is defined in the MBTA as any means or any manner to hunt, pursue, wound, kill, possess, or transport, any migratory bird, nest, egg, or part thereof.

Migratory birds are also protected, as defined in the MBTA, under Section 3513 of the California Fish and Game Code.

2.1.4. CALIFORNIA FISH AND GAME CODE (BREEDING BIRDS)

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird, except as otherwise provided by the California Fish and Game Code or other regulation.

2.1.5. EXECUTIVE ORDER 13112: INVASIVE SPECIES

Under EO 13112, an invasive species is defined as “an alien species (a species not native to a particular ecosystem) whose introduction does or is likely to cause economic and environmental harm or harm to human health”. Invasive species are determined by the Invasive Species Council.

In addition to other mandates, EO 13112 mandates federal agencies whose actions may affect the status of invasive species to “not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species”.

2.1.6. EXECUTIVE ORDER 11988: FLOODPLAIN MANAGEMENT

EO 11989 mandates leadership on the part of federal agencies to minimize the adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities for (1) acquiring, managing, and disposing of federal lands, and facilities; (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

2.2. Studies Required

Prior to conducting any field studies, the limits of the Biological Study Area (BSA) were established for each of the 10 bridges. The sizes of the BSAs vary from 0.16 acre (ac) to 4.64 ac, and total approximately 11.22 ac. Each BSA consists of the project footprint, access and staging areas, and lands beyond the footprint to the edge of the road right-of-way that could potentially be affected by project construction and/or were determined necessary to inventory in order to perform an adequate analysis of project impacts.

The studies required to fully document the environmental conditions of the BSA included a general biological survey, plant survey, habitat mapping, and delineation of jurisdictional waters.

2.2.1. LITERATURE REVIEW

A list of sensitive wildlife and plant species potentially occurring within the BSA and vicinity was compiled to evaluate potential impacts resulting from project construction. Sources used to compile the list include the California Natural Diversity Data Base (CNDDB), the USFWS online special status species list, and the California Native Plant Society (CNPS) Online Edition referencing the Antioch North, Antioch South, Benicia, Briones Valley, Clayton, Diablo, Honker Bay, Las Trampas Ridge, Oakland East, Tassajara, Vine Hill, and Walnut Creek United States Geological Survey 7.5-minute quadrangles. All lists are included in Appendix B.

The special status species lists obtained from the CNDDB, CNPS, and USFWS were reviewed to determine which species could potentially occur within the vicinity of the BSA. The cumulative list (shown in Table 5, Section 3.2.) includes numerous species representing a variety of habitat types. The list includes each species' protection status, habitat information, status in the BSA, and supporting comments as necessary.

One invertebrate species, the red-headed sphecid wasp (*Eucerceris ruficeps*), appears on the lists but have no special status. Because little to no information is available about this species, and it has no status, this species is not included in Table 5.

The determination of whether a species could potentially occur within the BSA was based on the availability of suitable habitat within and adjacent to the BSA, as well as known occurrences of the species in or adjacent to the BSA according to the CNDDB. Species requiring specific habitat not present in the vicinity of the project (e.g., vernal pools) were eliminated as potentially occurring and are not discussed further. Those species that could potentially occur in the BSA from habitat suitability or on known occurrences in or within the vicinity of the BSA are discussed in Sections 4.2 and 4.3.

2.2.2. FIELD SURVEYS

Field surveys conducted for the project included a general survey to map vegetation communities, a preliminary jurisdictional delineation, and a focused plant survey.

2.2.2.1. Vegetation Mapping

Naturally occurring vegetation in the BSA was classified according to A Manual of California Vegetation, Second Edition (Sawyer, Keeler-Wolf, and Evans 2008), as appropriate. Managed or developed areas were classified according to their dominant plant species. The names of the plant species are consistent with The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin, B. G., et. al., editors 2012).

2.2.2.2. Potential Jurisdictional Waters Determination and Delineation

Potential waters of the U.S. in the BSA were delineated in accordance with the 1987 ACOE Wetland Delineation Manual (1987 Manual), the September 2008 Regional Supplement - Arid West Region, and the ACOE Regulatory Guidance Letter 08-02 regarding Preliminary Jurisdictional Delineations (June 2008).

LSA biologist Mike Trueblood conducted a preliminary jurisdictional delineation on April 13-14 and July 17, 2011. The field investigation was conducted in accordance with the ACOE Routine Approach for small areas (i.e., equal to or less than 5 acres), as described in the 1987 Manual. Data was collected for soils, hydrology, and vegetation to determine the extent of potential waters of the U.S. Data sheets are included in Appendix C. The limit of CDFW jurisdiction was also delineated.

2.2.2.3. Focused Plant Survey

LSA biologist Mike Trueblood conducted a focused plant survey of the BSA on April 13-14 and July 17, 2011. The survey was conducted during the normal blooming period of most special status plants that had potential to occur in the BSA based on the habitat present. All plant species observed were identified to a sufficient taxonomic level to determine if it was the target species.

2.3. Personnel and Survey Dates

Table 1 below provides a summary of the field surveys performed for this project.

Table 1: Survey Dates and Personnel

Date	Personnel	Task
April 13-14, 2011	M. Trueblood	Vegetation mapping, general biological survey, Jurisdictional delineation, plant survey
July 17, 2011	M. Trueblood	Vegetation mapping, general biological survey, Jurisdictional delineation; plant survey

2.4. Agency Coordination and Professional Contacts

The project consists of 10 bridges that are part of a larger project that includes a total of 17 bridges. A strategy was developed to expedite environmental clearance of the first seven bridge repair locations that had little to no environmental impacts (i.e., no Section 7 consultation). Technical assistance was requested with USFWS and NMFS on July 5, 2012; both agencies concurred with the documentation strategy and the determination of which projects would and would not require Section 7 consultation.

Additional technical assistance with NMFS was requested by Caltrans in October 2014 to determine impacts to Central California Coast steelhead (*Oncorhynchus mykiss*) (CCC steelhead). NMFS concurred with Caltrans' "no effect" determination for CCC steelhead with implementation of proper avoidance and minimization efforts (Appendix D).

2.5. Limitations That May Influence Results

No problems or limitations were encountered during the research, fieldwork, or document preparation that limited the results present herein.

Chapter 3 – Results: Environmental Setting

3.1. Description of the Existing Biological and Physical Conditions

3.1.1. BIOLOGICAL STUDY AREA

The BSA is located in northern Contra Costa County, within the City of Concord. The project is located within the Walnut Creek and Clayton quadrangles. Table 2 shows the location of each bridge.

Table 2: Bridge Locations

Bridge No.	Quad	Township	Range	Section
29C0091L/R	Walnut Creek	2 North	2 West	35
29C0115	Clayton	1 North	1 West	10
28C0183	Walnut Creek	1 North	2 West	2
28C0221	Walnut Creek	1 North	1 West	6
28C0222	Walnut Creek	1 North	1 West	6
28C0224	Walnut Creek	1 North	2 West	12
28C0278	Walnut Creek	2 North	2 West	25
28C2357	Walnut Creek	1 North	1 West	7
28C0361	Clayton	1 North	1 West	3

The majority of the area surrounding the bridges is highly urbanized and developed, with very few natural lands. The BSA is generally flat, with the elevation ranging from approximately 30 to 300 feet (ft) above sea level. In general, the topography begins trending upward in the southeast portion of the BSA, as it moves closer to Mount Diablo State Park.

Lands in the BSA consist of vegetation communities and developed areas. Vegetation communities are discussed below in the Natural Communities Section. The developed area within the BSA consists of the bridges and bridge approaches, totaling 4.86 ac.

3.1.2. PHYSICAL CONDITIONS

The BSA lies in a highly urbanized area within the City of Concord and is comprised of 10 distinct study areas, one at each of the 10 bridge locations (Figures 3a-3c). Below is a brief description of the physical and environmental condition at each bridge. Representative photos are shown in Appendix E.

LEGEND

Biological Study Area

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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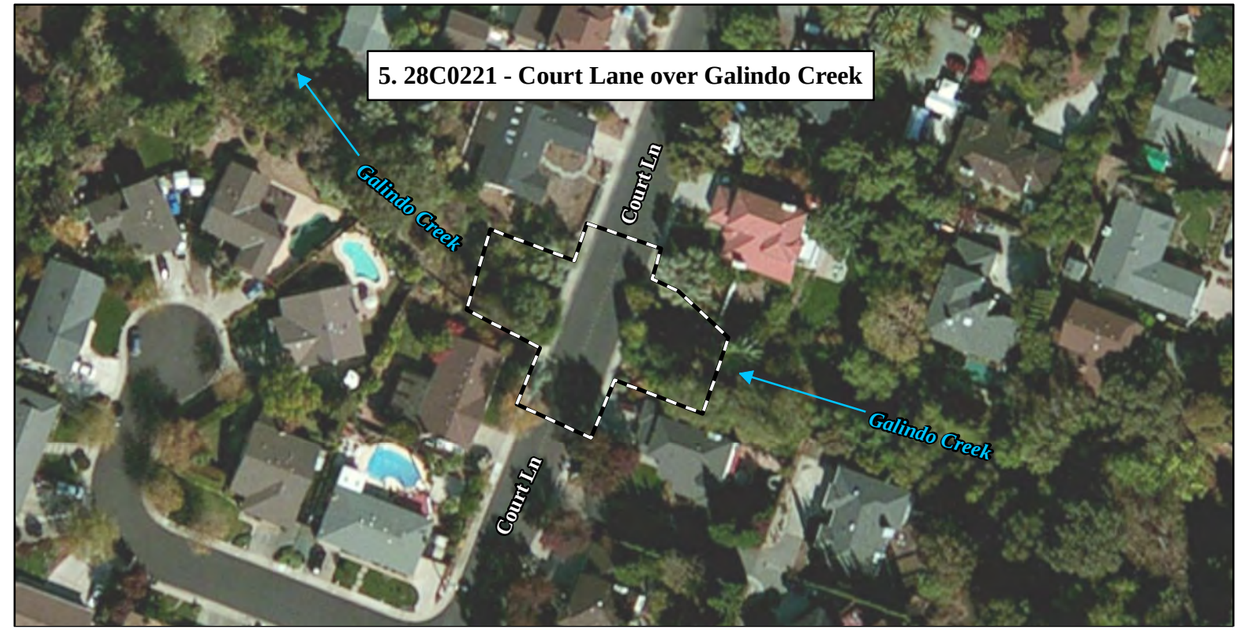
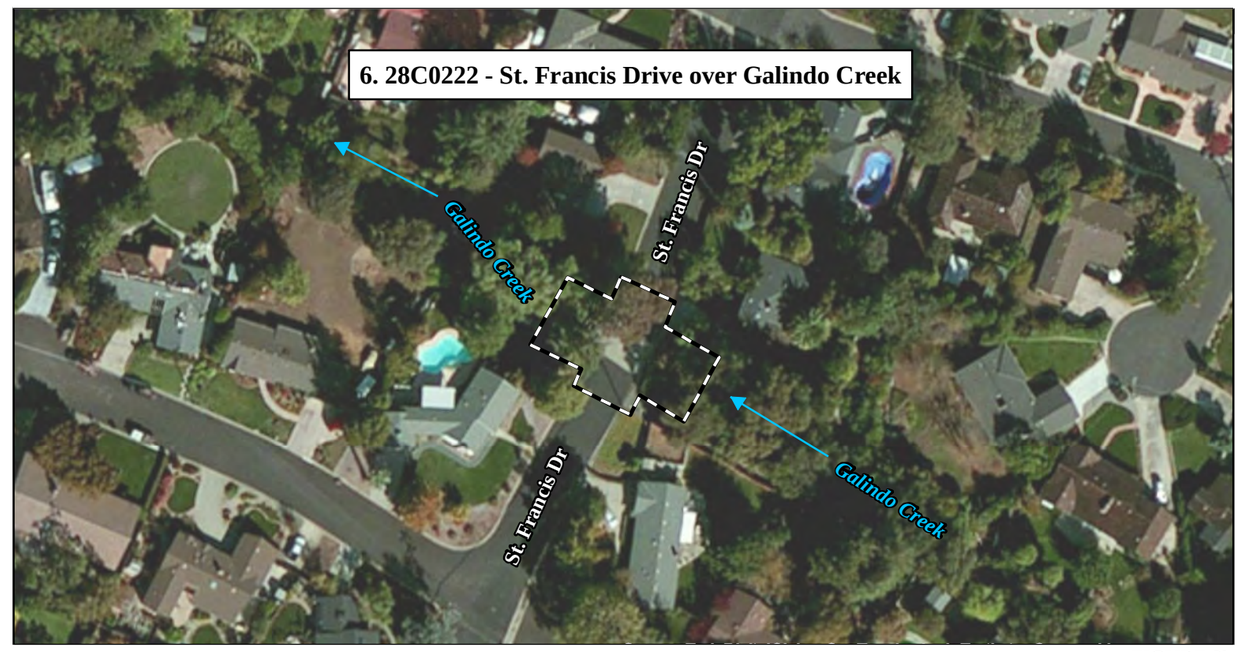
FIGURE 3a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Biological Study Area





LEGEND

Biological Study Area

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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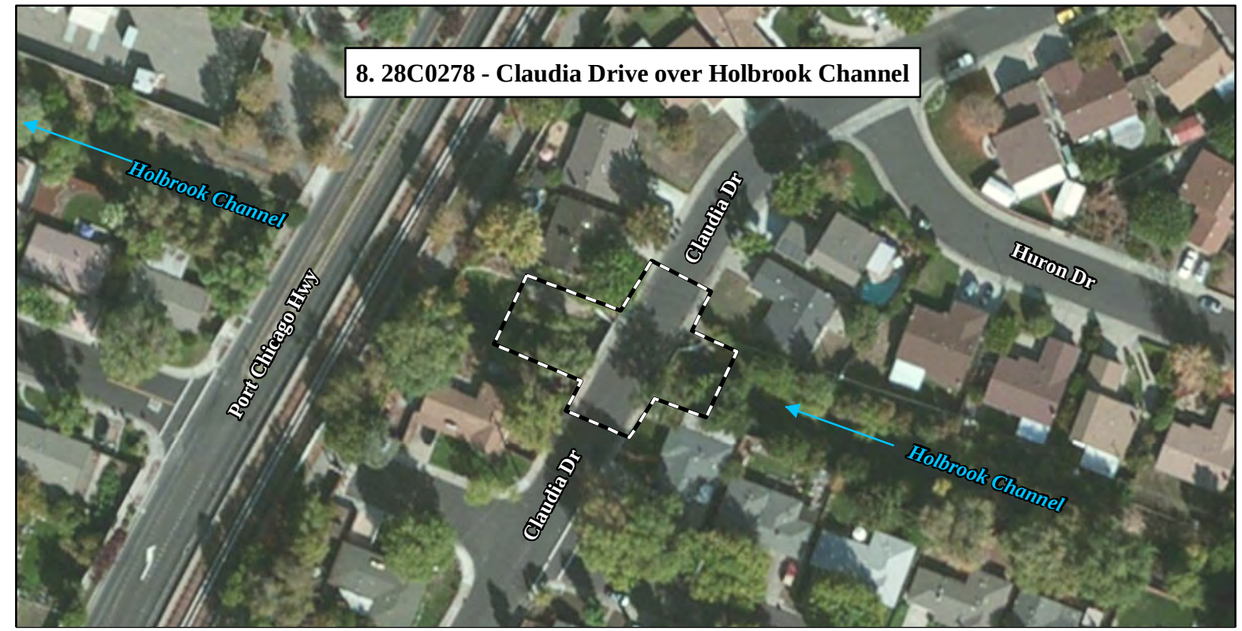
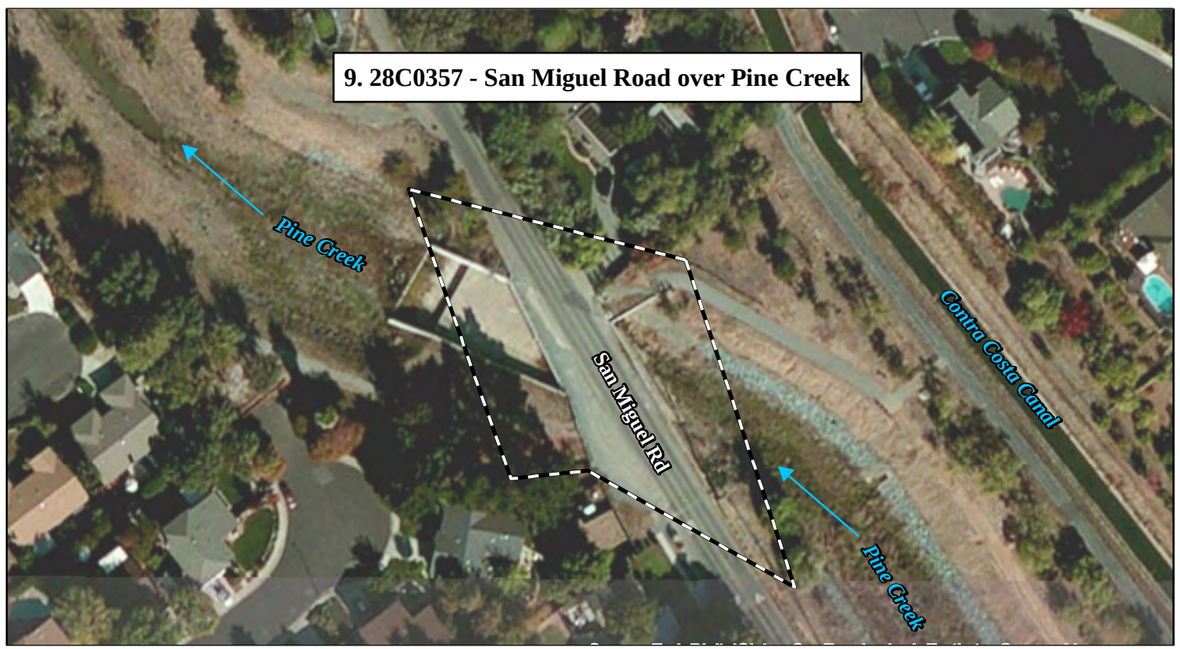
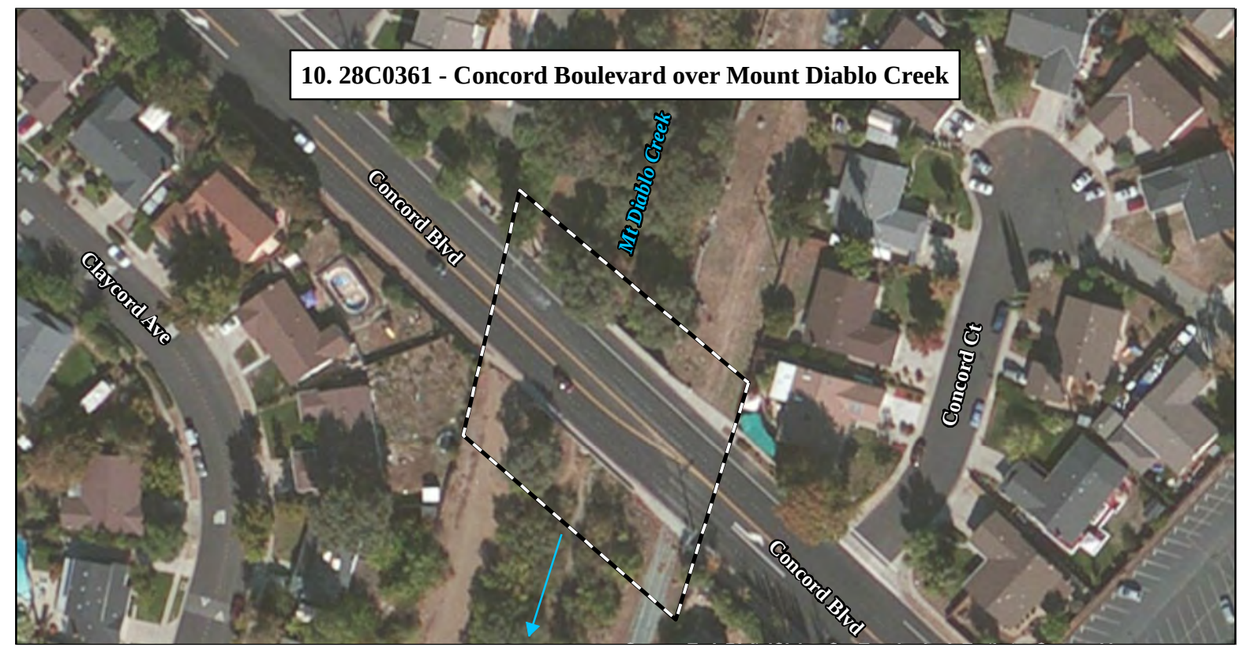
FIGURE 3b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Biological Study Area







Caltrans

LEGEND

Biological Study Area

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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FIGURE 3c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Biological Study Area

1. **28C0091L** – *Concord Avenue over Walnut Creek* – The BSA at this bridge is located within the central portion of the City in an urbanized area. Surrounding lands consist of urbanized commercial and industrial areas, including the Buchanan Field Airport. Developed areas in within this BSA consist of the Concord Avenue Bridge and bridge approaches. The only natural communities that occur in this BSA is annual brome grassland and open water.

2. **28C0091R** – *Concord Avenue over Walnut Creek* – The BSA at this bridge is incorporated into the BSA for bridge 28C0091L above, as these two bridges constitute both directions of traffic along Diamond Boulevard over Walnut Creek.

3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – The BSA at this bridge is located in the far eastern part of the City in a developed area. The area surrounding the project site consists of urban residential and commercial development, with the exception of a vacant lot southeast of the bridge. Natural communities that occur within the BSA are limited to the annual brome grassland and black willow thicket associated with Galindo Creek.

4. **28C0183** – *Willow Pass Road over Walnut Creek* - The BSA at this bridge is located in the central part of the City in an urbanized commercial area. Surrounding areas consist of commercial development and a freeway. Natural communities within the BSA are annual brome grassland, cattail marsh and open water.

5. **28C0221** – *Court Lane over Galindo Creek* - The BSA at this bridge is located in the eastern part of the City in a developed residential area. There is no natural vegetation community within this BSA; landscaped vegetation and ruderal/ruderal grassland are the only vegetation communities in the BSA.

6. **28C0222** – *St. Francis Drive over Galindo Creek* – The BSA at this bridge is located in the eastern part of the City in a developed residential area. The only vegetation communities that occur within the BSA are landscape vegetation and ruderal/ruderal grassland.

7. **28C0224** – *Whitman Road over SDM Channel* – The BSA at this bridge is located in the southern part of the City in an urban residential area. The natural communities that occur within the BSA consist of cattail marsh, ruderal/ruderal grassland, and open water.

8. **28C0278** – *Claudia Drive over Holbrook Channel* – The BSA at this bridge is located in the northern part of the City in an urban residential area. Vegetation communities that occur within this area include ruderal/ruderal grassland and landscaped vegetation from the neighboring residences.

9. **28C0357** – *San Miguel Road over Pine Creek* – The BSA at this bridge is located in the southern part of the City in a developed residential area. Developed features within the BSA include the San Miguel Bridge, bridge approaches and the Contra Costa Canal Trail. The vegetation within BSA includes landscaped vegetation and cattail marsh.

10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – The BSA at this bridge is located in the far eastern part of the City in an urban residential area.

Vegetation communities that occur within the BSA include Valley oak riparian associated with Mount Diablo Creek and ruderal/ruderal grasslands.

3.1.3. BIOLOGICAL CONDITIONS IN THE BIOLOGICAL STUDY AREA

3.1.3.1. Natural Communities

As noted above, vegetation communities were classifies based on the descriptions in Sawyer, Keeler-Wolf, and Evans (2008), as applicable. Vegetation communities and land uses occurring in the BSA include five natural communities: annual brome grassland, black willow thicket, Valley oak woodland, cattail marsh, and open water. Three other communities that not considered natural are also present: ruderal/ruderal grassland, landscaped vegetation, and developed. Natural communities comprise 2.31 ac of the BSA, as summarized in Table 3. Natural communities and other land uses in the BSA are shown in Figures 4a-4c.

Table 3: Natural Communities and Land Use in the BSA (acres)

Natural Communities	Acres
Annual Brome Grassland	1.50
Black Willow Thicket	0.26
Valley Oak Woodland	0.19
Cattail Marsh	0.18
Open Water	0.18
Subtotal	***2.31***
Other Vegetation Communities/Land Use	
Ruderal/Ruderal Grassland	0.48
Landscaped Vegetation	0.30
Developed	4.86
Subtotal	***5.64***
Total	**7.95**

Annual Brome Grassland

The annual brome grassland community is located at three different bridge crossings (29C009L/R, 28C0115, and 28C0183). This community is dominated by annual grasses including ripgut grass (*Bromus diandrus*), and wild oats (*Avena fatua*); wild radish (*Raphanus sativus*), and Johnson grass (*Sorghum halepense*) are also representative. The annual brome grassland community comprises approximately 1.50 ac in the BSA.

FIGURE 4a

LEGEND

Biological Study Area

Total Natural Communities / Land Uses - (7.95 ac)

- Annual Brome Grassland - (1.50 ac)
- Valley Oak Woodland - (0.19 ac)
- Black Willow Thicket - (0.26 ac)
- Cattail Marsh - (0.18 ac)
- Open Water - (0.18 ac)
- Ruderal/Ruderal Grassland - (0.48 ac)
- Landscape Vegetation - (0.30 ac)
- Developed - (4.86 ac)

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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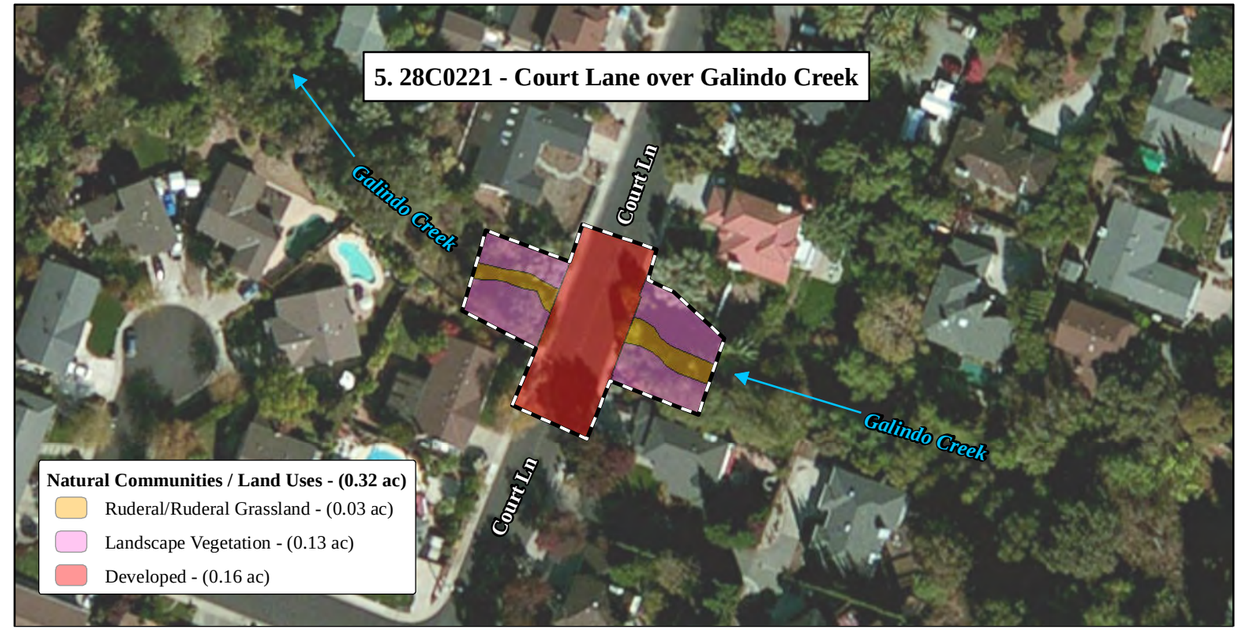
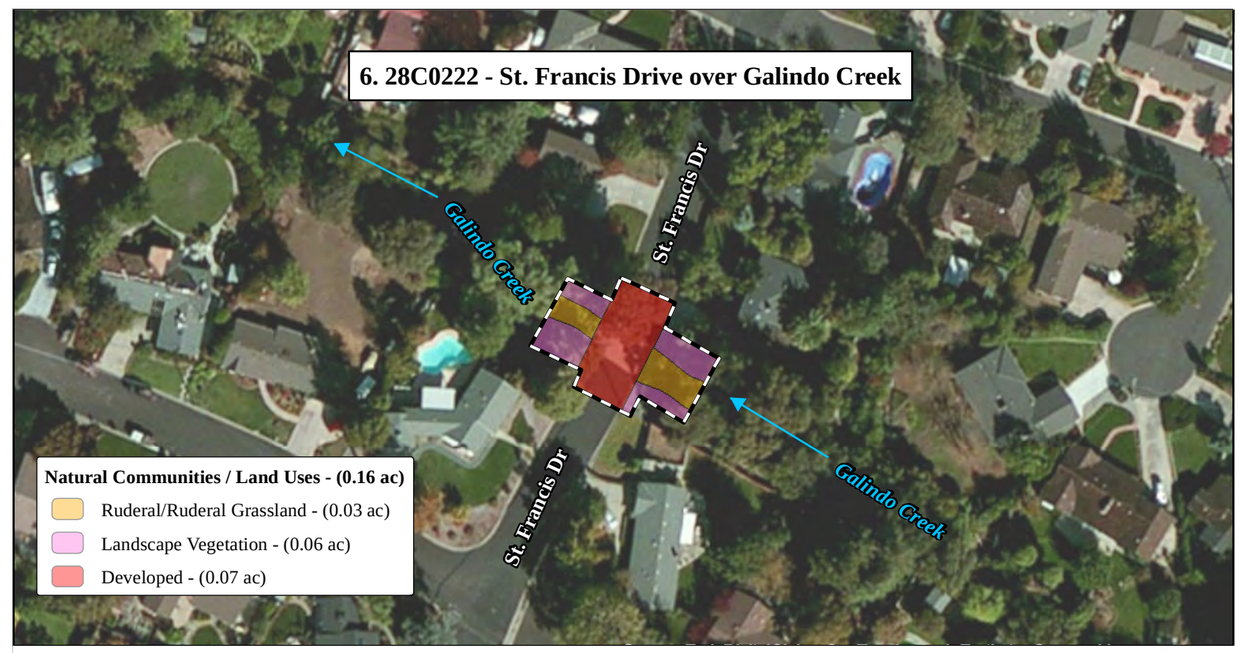
Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Natural Communities / Land Uses





Caltrans

LEGEND

Biological Study Area

Total Natural Communities / Land Uses - (7.95 ac)

- Annual Brome Grassland - (1.50 ac)
- Valley Oak Woodland - (0.19 ac)
- Black Willow Thicket - (0.26 ac)
- Cattail Marsh - (0.18 ac)
- Open Water - (0.18 ac)
- Ruderal/Ruderal Grassland - (0.48 ac)
- Landscape Vegetation - (0.30 ac)
- Developed - (4.86 ac)

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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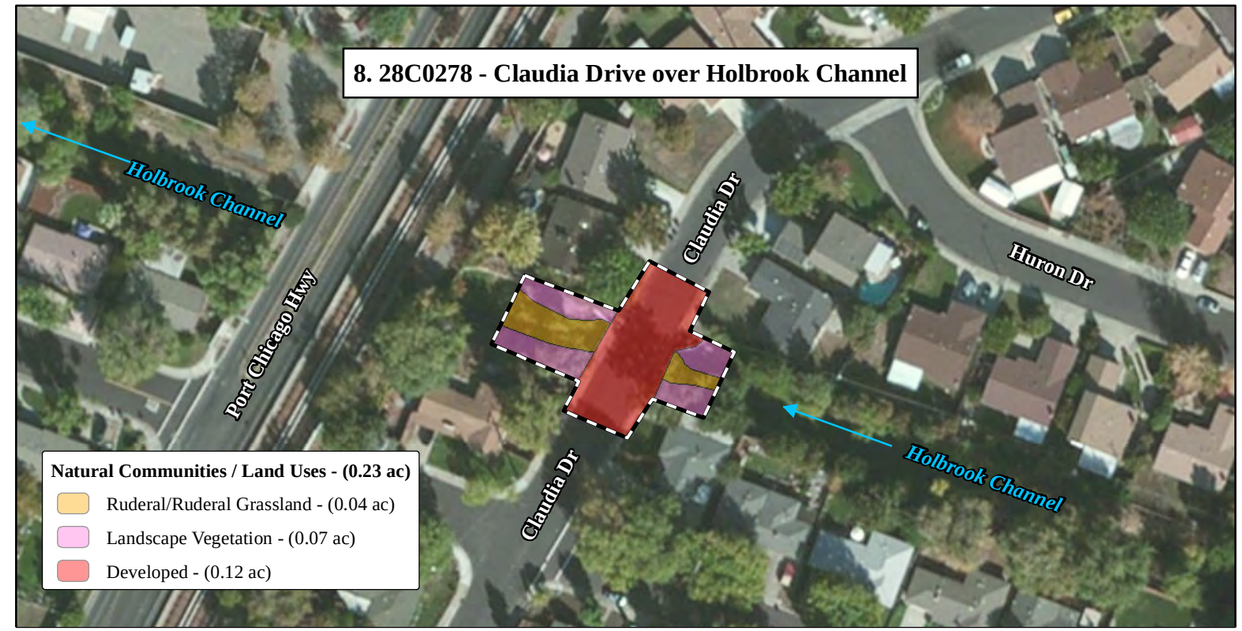
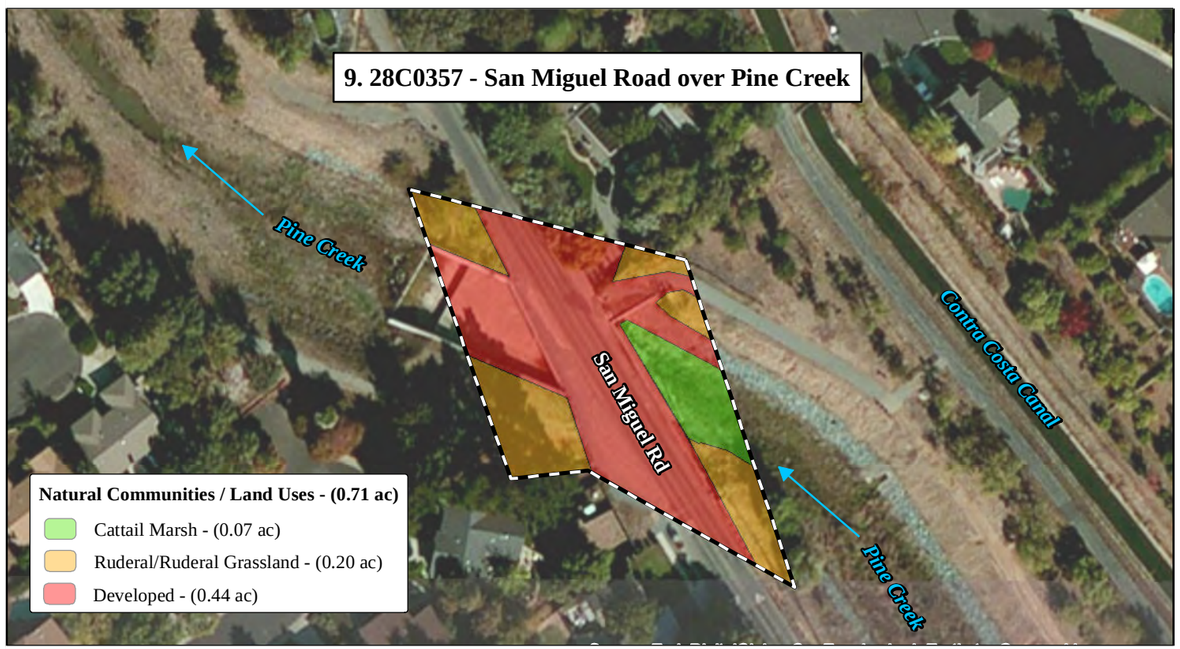
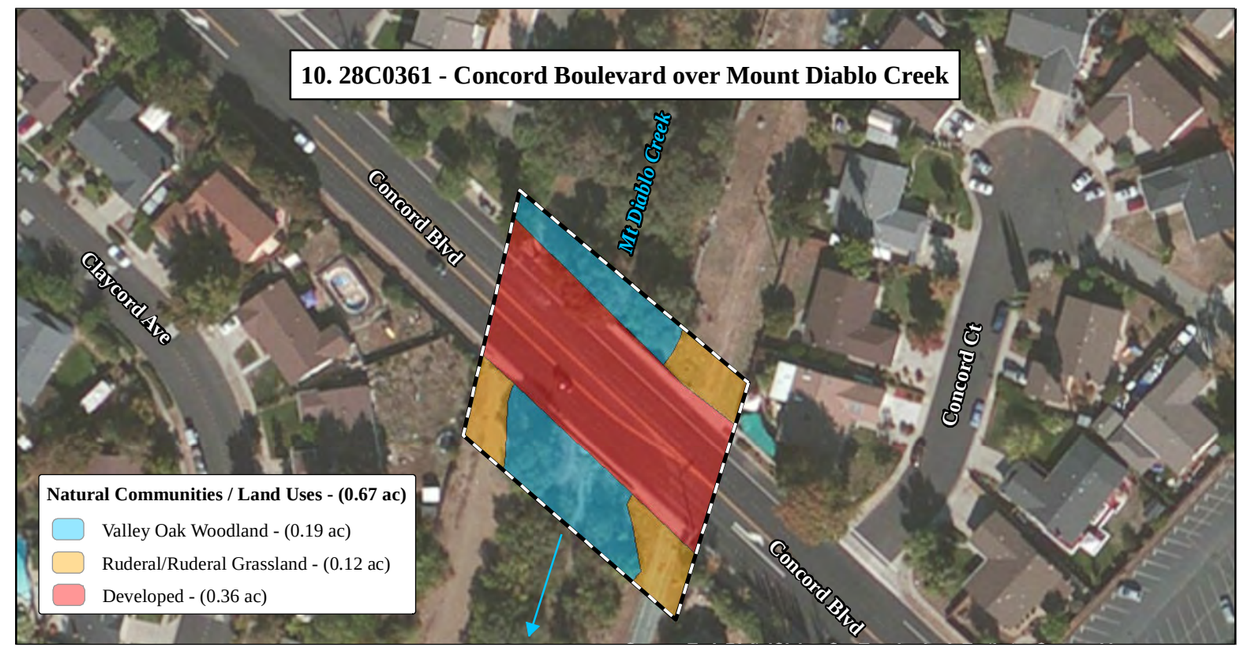
FIGURE 4b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Natural Communities / Land Uses







Caltrans

N

0 50 100
FEET

LEGEND

Biological Study Area

Total Natural Communities / Land Uses - (7.95 ac)

- Annual Brome Grassland - (1.50 ac)
- Valley Oak Woodland - (0.19 ac)
- Black Willow Thicket - (0.26 ac)
- Cattail Marsh - (0.18 ac)
- Open Water - (0.18 ac)
- Ruderal/Ruderal Grassland - (0.48 ac)
- Landscape Vegetation - (0.30 ac)
- Developed - (4.86 ac)

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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FIGURE 4c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Natural Communities / Land Uses

Black Willow Thicket

The black willow thicket community is a natural riparian community dominated by Goodding's black willow (*Salix gooddingii*); other associated species include balsam poplar (*Populus balsamifera*) and California black walnut (*Juglans hindsii*), Fremont's cottonwood (*Populus freemontii*), and California black walnut. This community is only located at Bridge 28C0183. The black willow thicket community comprises approximately 0.26 ac in the BSA.

Valley Oak Woodland

The Valley oak woodland community is a natural riparian community with a homogeneous canopy dominated by Valley oak (*Quercus lobata*); understory vegetation consists of annual brome grasses, Himalayan blackberry (*Rubus armeniacus*), and ivy (*Hedera canariensis*). This community is located along Mount Diablo Creek at Bridge 28C0361. The Valley oak riparian community comprises approximately 0.19 ac in the BSA.

Cattail Marsh Community

The cattail marsh community is a natural community that is dominated by broad-leaved cattail (*Typha latifolia*). Other species that are present within this community include Baltic rush (*Juncus balticus*) and Italian rye grass (*Festuca perennis*). This community is located at three bridge locations (28C0183, 28C0224, and 28C0357). This community comprises 0.18 ac of the BSA.

Open Water

Open water habitat is defined as unvegetated aquatic habitat along a natural bottomed bed and bank, and is considered a natural community. Within the BSA, this community is found only at two bridge locations, 28C0183 and 28C0224. The open water community comprises approximately 0.18 ac in the BSA.

3.1.3.2. Other Vegetation Communities

Ruderal/Ruderal Grassland

Ruderal areas are lands that have been altered by human actions such that the natural communities no longer exist. The disturbed ruderal community in the BSA is composed of grasses and some vegetation in a small-developed area. Vegetation growing in this community include wild oats (*Avena fatua*), ripgut grass, and cheeseweed mallow (*Malva parviflora*). This community is common within the BSA and is located at five bridges (28C0221, 28C0222, 28C0224, 28C0278, and 28C0361). This community comprises 0.48 ac of the BSA.

Landscaped Vegetation

This community is dominated by landscape plants from the neighboring residences that are present within the BSA. Landscaped plants present include Sanford's arrowhead (*Sagittaria sanfordii*), palm (*Arecaceae* sp.), iris species (*Iris* sp.) and ivy (*Hedera* sp.). This community is not considered natural and is located at four bridges within the BSA (28C0221, 28C0222, 28C0278, and 28C0357). This community comprises 0.30 ac in the BSA.

Developed

Developed areas include the bridge, bridge approaches, and roadways. There is no vegetation within the developed community. Every bridge with the BSA has developed areas. The developed areas comprise approximately 4.86 ac in the BSA.

3.1.3.3. Description of Common Animal Species

The sections below discuss animal species observed and/or likely to occur within the BSA.

Mammals

No mammals were observed during the survey. Common species likely to occur in the BSA include California ground squirrel (*Otospermophilus beecheyi*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), opossum (*Didelphis virginiana*), and mule deer (*Odocoileus hemionus*).

Birds

Bird species observed during site surveys include the northern mockingbird (*Mimus polyglottos*), black phoebe (*Sayornis nigricans*), mallard (*Anas platyrhynchos*), Brewer's blackbird (*Euphagus cyanocephalus*), American robin (*Turdus migratorius*), red-winged blackbird (*Agelaius phoeniceus*), and turkey vulture (*Cathartes aura*). Other common bird species expected to occur in the BSA include California towhee (*Melozone crissalis*), white-crowned sparrow (*Zonotrichia leucophrys*), great horned owl (*Bubo virginianus*), red-shouldered hawk (*Buteo lineatus*), band-tailed pigeon (*Columba fasciata*), western bluebird (*Sialia mexicana*), blue-gray gnatcatcher (*Polioptila caerulea*), acorn woodpecker (*Melanerpes formicivorus*), bushtit (*Psaltriparus minimus*), American crow (*Corvus brachyrhynchos*), and Bewick's wren (*Thryomanes bewickii*).

Amphibians and Reptiles

No amphibians were observed during the field survey. Common amphibian species likely to occur in the BSA include the Pacific chorus frog (*Pseudacris sierra*), and California toad (*Anaxyrus boreas halophilus*).

No reptile species were observed during the site survey. The BSA provides habitat for the Pacific pond turtle (*Emys marmorata*), a State species of concern. Other reptile species likely to occur in the BSA include western terrestrial garter snake (*Thamnophis elegan elegans*), western rattlesnake (*Crotalus oreganus*), common gopher snake (*Pituophis catenifer*), and western fence lizard (*Sceloporus occidentalis*).

3.1.3.4. Invasive Species

Many non-native species have been part of the California landscape for the past 150 years. Some of these introduced species are invasive, such as oats, barley, and rye, are present in the ruderal grassland within the BSA; however, these species are primarily annual or biennial, and are at most moderately invasive. No serious invasive species (e.g., yellow star thistle [*Centauria solstitialis*], giant reed grass [*Arundo donax*]) were observed in the BSA.

3.1.3.4. Migration Corridor

Wildlife usage in the various habitats within the BSA is focused around the creeks and channels. The vegetation and riparian corridors around the streams provide suitable migration habitat for a variety of wildlife species. Species that may occur in the BSA include, but are not limited to, raccoon, opossum, bullfrog (*Lithobates catesbeiana*), western fence lizard, western terrestrial garter snake, western scrub jay (*Aphelocoma coerulescens*), rock dove (*Columba livia*), American crow, Brewer's blackbird, northern mockingbird, house sparrow (*Passer domesticus*), black phoebe, European starling (*Sturnus vulgaris*), and American robin.

Although the developed areas and ruderal vegetation do not provide high quality habitat for wildlife species, the creeks within the BSA do provide an important ecological link between Mount Diablo State Park, to the southwest, and Suisun Bay, to the north. Common wildlife species may utilize the riparian and creek corridors for migration purposes. In addition, trees associated with adjacent residences and/or businesses may provide nesting habitat for several bird species.

3.1.3.5. Aquatic Resources

Aquatic Resources within the BSA include the SDM Channel, Walnut Creek, Mount Diablo Creek, Pine Creek, Holbrook Creek, and Galindo Creek.

Jurisdictional waters include wetlands and other waters that fall under the jurisdiction of the ACOE pursuant to Section 404 of the CWA, the RWQCB pursuant to Section 401 of the CWA or the PCWQCA, or the CDFW pursuant to Sections 1600-1616 of the California Department of Fish and Game Code.

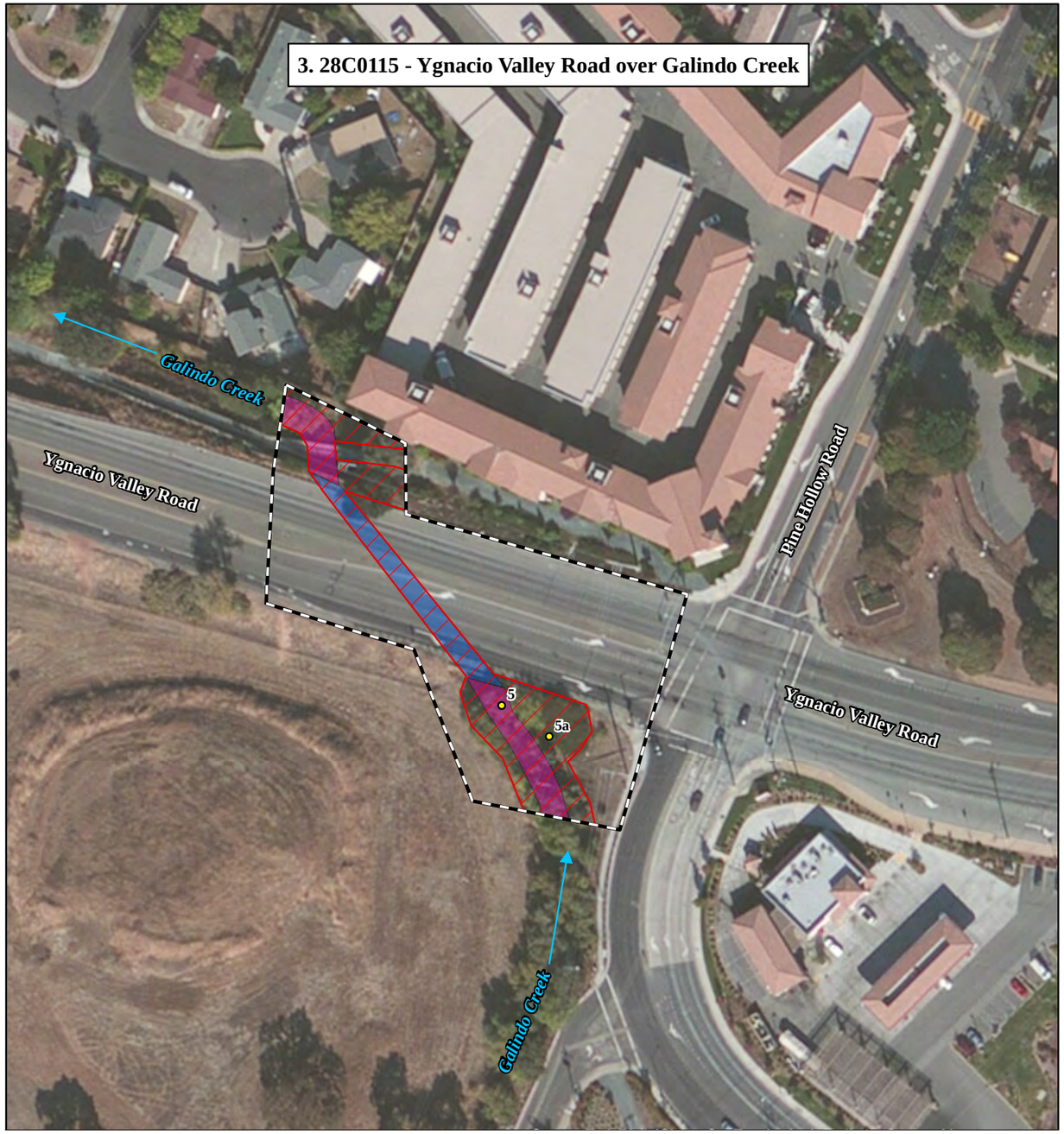
Potential jurisdictional waters within the BSA are limited to the reach of Galindo Creek, Mount Diablo Creek, Walnut Creek, Holbrook Creek, SDM Channel, Pine Creek, and their associated riparian habitats.

Waters of the U.S. for all 10 bridges total 3.30 ac. Wetlands, totaling 0.40 ac are limited to the low-flow banks of Holbrook Channel Bridge 28C0278, Galindo Creek at Bridges 28C0115 and 28C0221, Walnut Creek at Bridge 28C0183, and Whitman Road at Bridge 28C0224. Non-wetland waters, totaling 2.90 ac, consist of all other waters below the ordinary high water mark that were determined not to support wetlands.

As noted in Section 2.3, data collection occurred on April 13-14 and July 17, 2014; wetland data sheets are shown in Appendix C. Figures 5a-5c show the potential jurisdictional waters in the BSA, which are also summarized in Table 4 below.

Table 4: Aquatic Resources in the BSA

Bridge No.	Potential Waters of the U.S.			CDFW Waters
	Wetlands	Non-Wetland Waters	Total	
28C0091L 28C0091R	0.01	1.03	***1.04***	1.04
28C0115	0.09	0.07	***0.16***	0.32
28C0183	0.08	1.16	***1.24***	1.24
28C0221	0.02	0.07	***0.09***	0.09
28C0222	0.00	0.05	***0.05***	0.05
28C0224	0.07	0.08	***0.15***	0.15
28C0278	0.03	0.04	***0.07***	0.07
28C0357	0.06	0.23	***0.29***	0.29
28C0361	0.00	0.16	***0.16***	0.28
Total	**0.36**	**2.89**	**3.25**	**3.53**



Caltrans

LEGEND

- Biological Study Area
- Data Points
- CDFW Waters - (3.54 ac)

Potential Jurisdictional Waters of the U.S. - (3.30 ac)

- Wetlands - (0.40 ac)
- Non-wetland Waters - (2.90 ac)

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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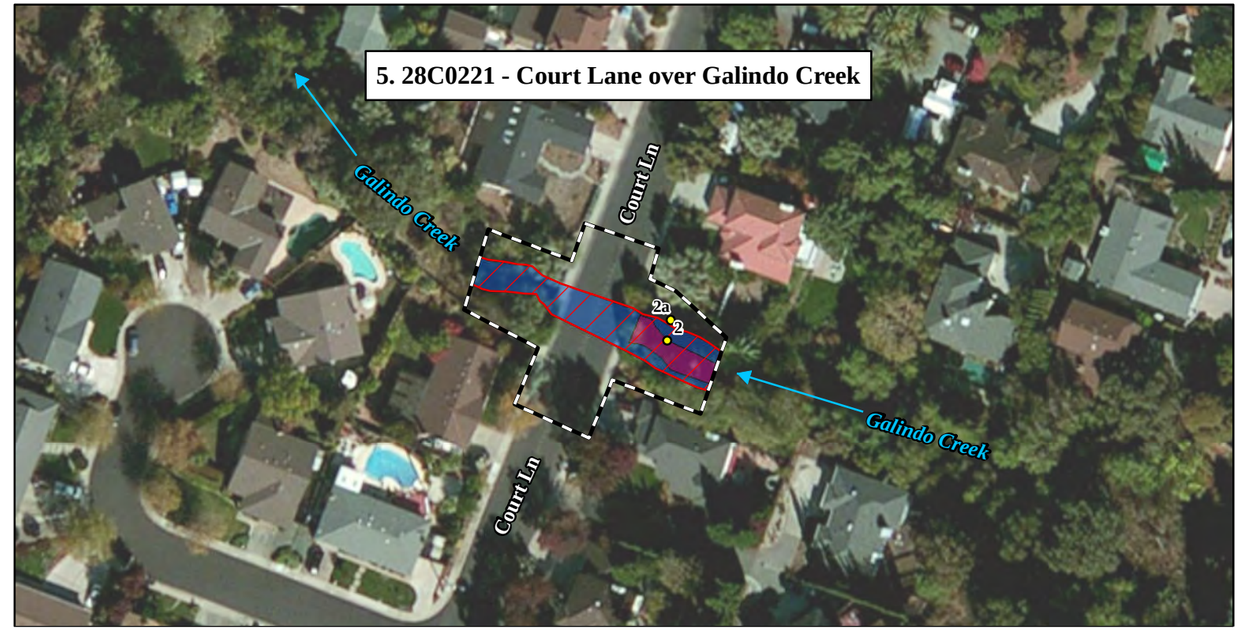
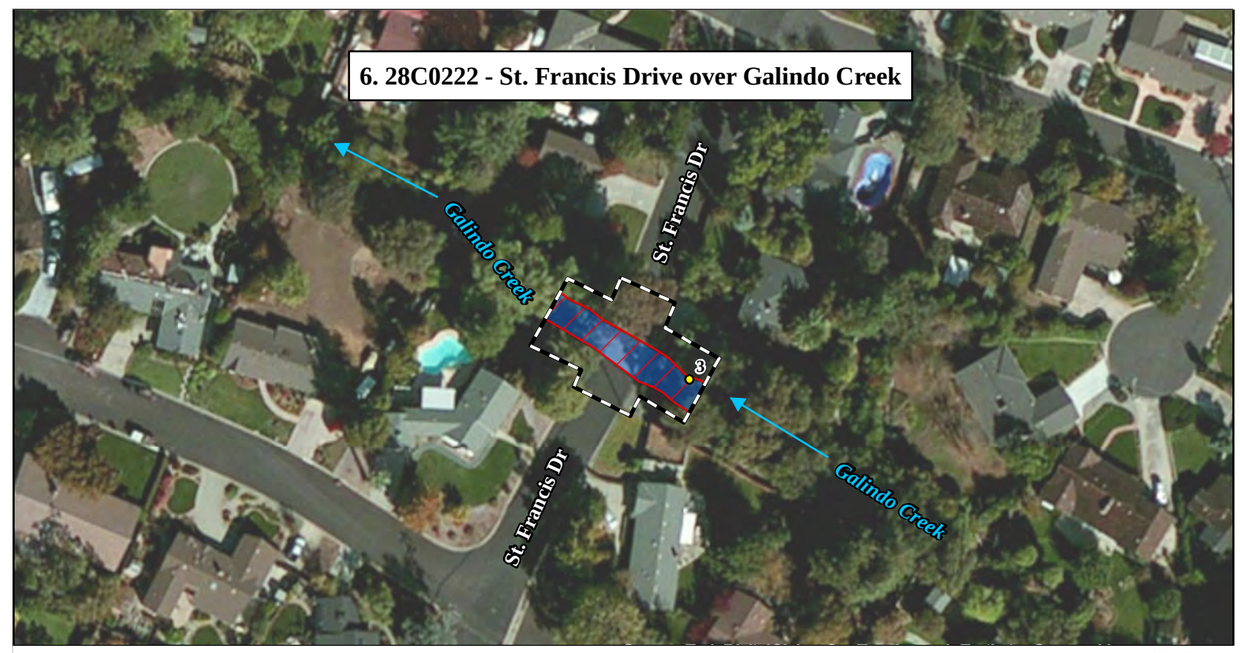
FIGURE 5a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Potential Jurisdictional Waters





Caltrans

LEGEND

- Biological Study Area
- Data Points
- CDFW Waters - (3.54 ac)

Potential Jurisdictional Waters of the U.S. - (3.30 ac)

- Wetlands - (0.40 ac)
- Non-wetland Waters - (2.90 ac)

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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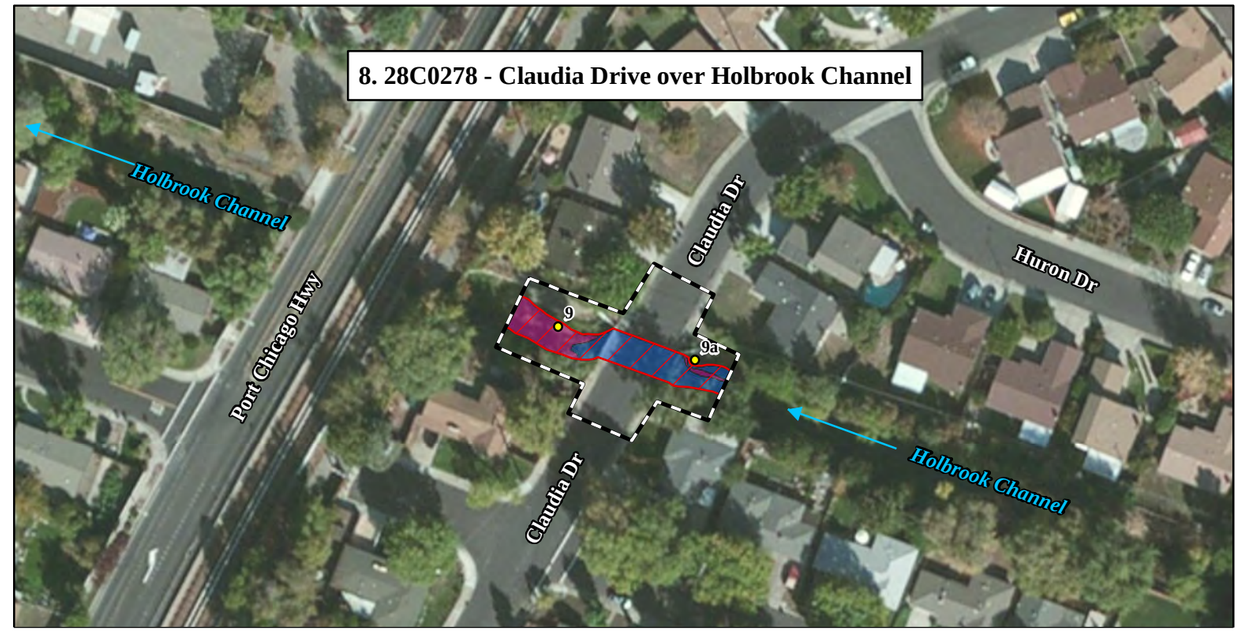
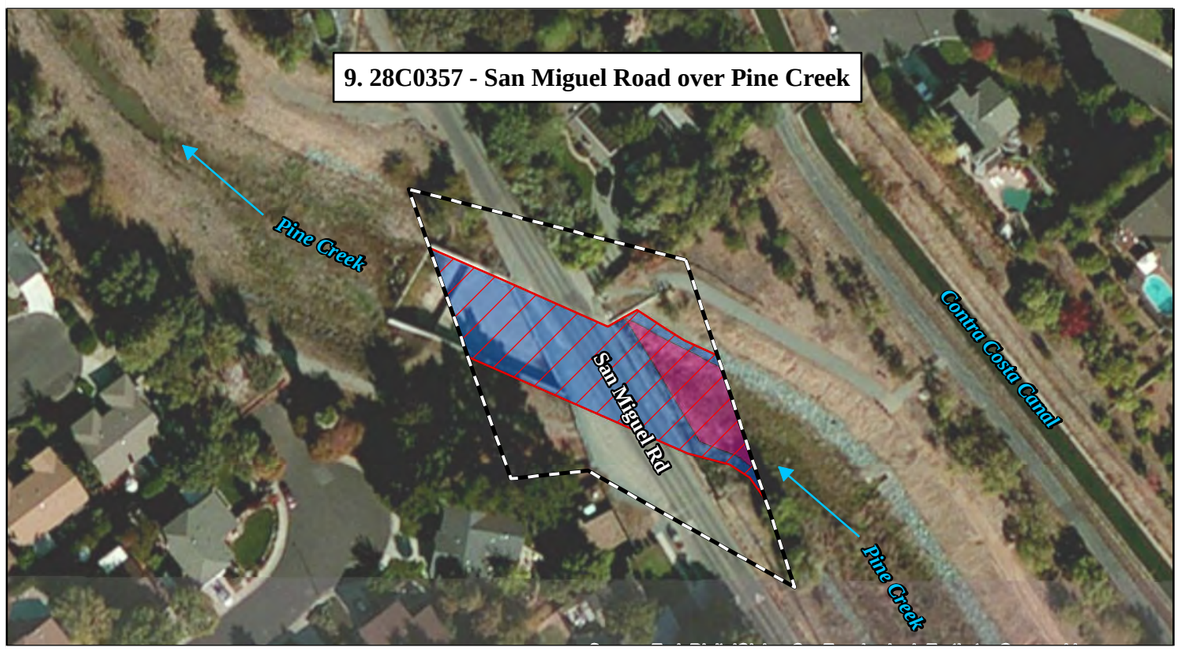
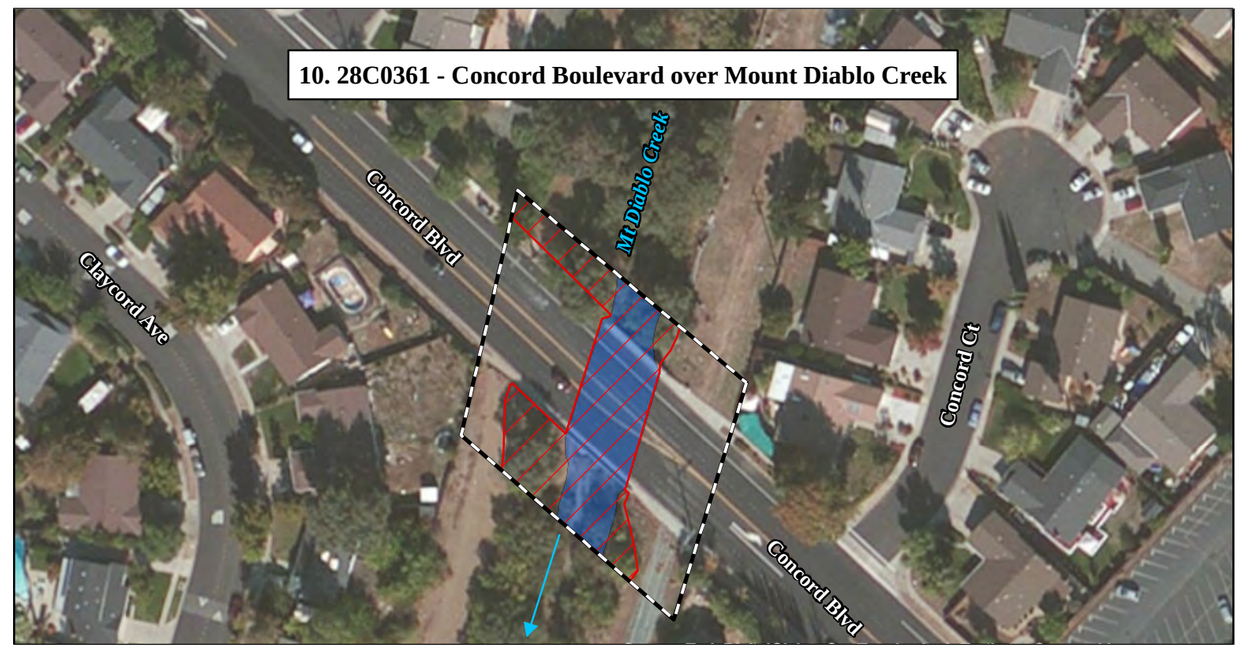
FIGURE 5b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Potential Jurisdictional Waters







LEGEND

- Biological Study Area
- Data Points
- CDFW Waters - (3.54 ac)

Potential Jurisdictional Waters of the U.S. - (3.30 ac)

- Wetlands - (0.40 ac)
- Non-wetland Waters - (2.90 ac)

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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FIGURE 5c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Potential Jurisdictional Waters

3.2. Regional Species and Habitats and Natural Communities of Concern

Table 5 provides a list of special status species that could potentially occur in the region, and therefore in the BSA; this list was compiled as described in Section 2.2.1. A review was conducted of the specific habitats required by each species listed in Table 5, and the specific habitats and habitat conditions present in the BSA. Based on this evaluation, it was determined whether the species listed in Table 5 had potential to occur in the BSA. Special status species that were observed, or determined to potentially occur in the BSA based on availability of suitable habitat or other factors such as plucking posts, scat, nests, dens, etc., are discussed more fully in Sections 4.2., and 4.3., of this report. Species determined unlikely to occur in the BSA based on these same factors are documented accordingly in the table and not discussed further in this report.

Table 5: Special Status Species Potentially Occurring in the BSA

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Mammals					
Antrozous pallidus	Pallid bat	CSC	Found in variety of habitats, including grassland, chaparral, woodland, and forest. Most common in open, dry habitats with rocky areas for roosting. Roosts in bridges, caves, crevices, mines, hollow trees, buildings.	HP	Suitable roosting habitat and foraging habitat is present at all bridges in the BSA. See discussion in Section 4.3.1.
Dipodomys heermanii berkeleyensis	Berkeley kangaroo rat	CA SA	Found in bare ridge tops, rocky outcrops, thin soils, scattered chaparral, and small annual grasses.	A	Suitable habitat is not present in the BSA.
Lasionycteris noctivagans	Silver-haired bat	CA SA	Found in old growth coniferous or deciduous forests. Forms maternity colonies in small hollows and tree cavities. Winter roosts occur in protected structures, trees and hollow snags.	A	Suitable habitat is not present; there are no old growth forests in the BSA.
Lasiurus cinereus	Western red bat	CSC	Roosts primarily in trees, 2 – 40 ft above the ground. Feeds over a wide variety of habitats including grasslands, shrub land, open woodland, and croplands.	HP	Suitable roosting habitat and foraging habitat is present at all bridges in the BSA. See discussion in Section 4.3.1.
Lasiurus blossevillii	Hoary bat	CA SA	Found in open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees.	HP	Suitable roosting habitat and foraging habitat is present at all bridges in the BSA. See discussion in Section 4.3.1.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	CSC	Relies on evergreen or live oaks and other thick-leaved trees and shrubs. This species builds large houses in dense brush on the ground; nests can also be placed in cavities of tree hollows.	A	Suitable habitat is not present; there is no dense ground brush.
Nyctinomops macrotis	Big free-tailed bat	CSC	Generally inhabits rugged terrain. This species prefers rocky cliffs in weathered rock fissures and crevices.	A	Suitable habitat is not present in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Perognathus inornatus inornatus	San Joaquin pocket mouse	CA SA	Inhabits dry, weedy ground and annual grasslands that are associated with sandy washes or finely textured soils. Sometimes found in grassland-blue oak savanna up to 1500 ft.	A	Suitable habitat is not present. The grasslands within the BSA are not suitable due to its location within a floodplain.
Reithrodontomus raviventris	Salt marsh harvest mouse	FE	Found in the marshes of Corte Madera, Richmond, and South San Francisco bay. Pickleweed (*Salicornia virginica*) is primary habitat, used for food and cover. This species is restricted to saline or brackish marsh habitats.	A	Suitable habitat is not present; pickleweed was not observed in the BSA.
Scapanus latimanus parvus	Alameda Island mole	CSC	Required friable soil for burrowing, common in moist meadows and near streams.	A	Suitable habitat is not present; there is no friable soil within the BSA.
Sorex ornatus sinuosus	Suisun shrew	CSC	Inhabits tidal marshes dominated by cordgrass (*Spartina foliosa*), pickleweed and gumplant (*Grindelia cunefolia*). Also can be found in brackish waters dominated by California bulrush (*Scirpus californicus*) and cattail (*Typha latifolia*).	A	Suitable habitat is not present there are no tidal marshes or brackish waters in the BSA.
Taxidea taxus	American badger	CSC	Abundant in dry open forests and herbaceous habitat with friable soils.	A	Suitable habitat is not present; there are no friable soils in the BSA.
Vulpes macrotis mutica	San Joaquin kit fox	FE	Annual grasslands or grassy open stages with scattered vegetation; need loose-textured soils for burrowing, and a suitable prey base.	A	Suitable habitat is not present; there are no large, open grasslands within the BSA.
Birds					
Accipiter cooperii	Cooper's hawk	SWL	Nests in deciduous trees in crotches (10-80 ft), but usually (20-50 ft), above ground. Also nests in conifers on horizontal branches, in the main crotch, often just below the lowest live limbs. Seldom found in areas without dense tree stands, or patchy woodland habitat.	HP	Suitable habitat is present in the trees located at four bridge locations (28C0278, 28C0361, 28C0221, and 28C0222). See discussion in Section 4.3.2.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Agelaius tricolor	Tricolored blackbird	CSC	Nests in freshwater marshes with tules or cattails, or in other dense vegetation such as thistle, blackberry thickets, etc. in close proximity to open water. Forages in a variety of habitats including pastures, agricultural fields, rice fields, and feedlots within a mile or two of nesting area.	HP	Suitable habitat is present in the cattail marsh located at three bridge locations (28C0224, 28C0357, and 28C0183). See discussion in Section 4.3.3.
Aquila chrysaetos	Golden eagle	FP	Occurs in open and semi-open habitat; from tundra, shrublands, grassland and coniferous forests. Generally found in mountainous areas, but also nests in wetland, riparian and estuarine habitat.	A	Suitable habitat in not present, the bridges in the BSA do not provide open habitat large enough for this species.
Ardea herodias	Great blue heron (nesting colony)	CA SA	Colonial nester in large trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers, and wet meadows.	A	Although this species may be present in the BSA, there is no suitable rookery habitat in the BSA.
Asio flammeus	Short-eared owl	CSC	Found primarily in western Sierra Nevada, the Central Valley and along coastlines. Usually found in open areas, such as annual grasslands and wetlands. Nests and roosts on dry ground in depressions in dense vegetation and wetlands.	HP	Suitable foraging habitat is present in the annual grasslands at three bridges (28C0183, 28C0091L/R, and 28C0115). No nesting habitat is present in the BSA. See discussion in Section 4.3.4.
Athene cunicularia	Burrowing owl	CSC	Burrow sites in open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, California ground squirrel.	A	Suitable habitat is not present; no friable soils or burrows were observed in the BSA.
Buteo regalis	Ferruginous hawk	SWL	Roosts in a lone tree or utility poles in open areas. Flies over open areas to hover and search for prey.	A	Suitable habitat is not present; no open areas are present in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Buteo swainsoni	Swainson's hawk	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannahs. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	A	Suitable habitat is not present due to the BSA being within a highly urban area.
Charadrius alexandrines nivosus	Western snowy plover	FT	Sandy beaches, salt pond levees, and shores of alkali lakes. Breeds on coastal beaches from Washington to Baja.	A	Suitable habitat is not present; the BSA does not have coastal habitat.
Circus cyaneus	Northern harrier	CSC	Frequently found in meadows, grasslands, open ranges or wetlands. Tall grasses and forbs are used for cover.	HP	Suitable foraging habitat is present in the annual grasslands that is located at two of the bridge locations (29C0091L/R and 29C0115). No nesting habitat is present in the BSA. See discussion in Section 4.3.5.
Elanus leucurus	White-tailed kite (nesting)	CA SA	Nests on rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Found in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	A	Although this species may be observed foraging in and in the vicinity of the BSA, there is no suitable nesting habitat.
Eremophila alpestris actia	California horned lark	CSC	Coastal regions and in the main part of the San Joaquin Valley and east to the foothills. Found in open habitats, usually where trees and large shrubs are absent: short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats.	A	Suitable habitat is not present; there is no open habitat within the BSA.
Falco mexicanus	Prairie falcon	SWL	Found primarily in perennial grasslands, savannahs, and rangeland. Sometimes found in agricultural fields. Nests in a covered cliff edge adjacent to open areas.	A	Suitable habitat is not present; there are no perennial grasslands, savannahs or rangelands in the BSA.
Falco peregrinus anatum	American peregrine falcon	FP	This species occurs primarily along mountain ranges, river valleys and coastlines. Cliffs and ledges are required for cover and nests.	A	Suitable foraging habitat is not present; there are no mountains, rivers or coastlines in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Geothlypis trichas sinuosa	Saltmarsh common yellowthroat	CSC	Found in brackish and saline tidal marsh habitat that is dominated by rushes (*Scirpus* sp.) and *Juncus.* Nests are built near the ground and are concealed by vegetation.	A	Suitable habitat is not present; there are no brackish or saline marshes in the BSA.
Heliaeetus leucocephalus	Bald eagle	SE	Requires large bodies of water; occurs near ocean shore, lakes, reservoirs, and rivers. Usually nests within 1 mile of water, in large, dominant trees with open branches.	A	Suitable habitat is not present; there are no large, open bodies of water in the BSA.
Laterallus jamaicensis coturniculus	California black rail	ST	Resides in saline, brackish and emergent wetlands that are dominated by pickleweed. Typically occurs in the high wetland zone.	A	Suitable habitat is not present; there is no pickleweed in the BSA.
Melospiza melodia	Song sparrow (Modesto population)	CSC	Occurs in the northern Central Valley, high populations near the Butte sink area and Sacramento-San Joaquin river delta. Found frequently along riparian corridors, particularly the Stanislaus and Cosumnes Rivers. Sometimes observed near vegetated irrigation canals and levees. In the winter this species may be found far from water, in open habitats with shrubs or tall herbs.	A	Potentially suitable habitat is present in the BSA; however, the BSA is out of range for this species.
Melospiza melodia maxillaris	Suisun song sparrow	CSC	Occurs frequently in tidal marshes of Suisun Bay. Requires dense vegetation for nesting and cover from predators generally in areas with high amounts of pickleweed and gumplant.	A	BSA is out of range for this species.
Melospiza melodia pusillula	Alameda song sparrow	CSC	Inhabits tidal salt marshes with high vegetation to conceal nests from predators. Requires exposed ground for foraging.	A	Suitable habitat is not present; there are no tidal salt marshes in the BSA.
Melospiza melodia samuelis	San Pablo song sparrow	CSC	Found in most tidal salt marsh in San Pablo Bay, requires dense vegetation for nesting and protection from predators. Primarily associates with areas with high amounts of pickleweed and gumplant.	A	Suitable habitat is not present in the BSA. There are no tidal marshes or high amounts of picklweed or gumplant. Additionally, the BSA is out of range for this species.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Pandion haliaetus	Osprey	SWL	Habitat includes expanse of shallow, fish-filled water, including rivers, lakes, streams and ponds. Nesting habitat must be within 12 miles of accessible fish. Nest sites are generally in an area with open surroundings for easy approach.	A	Suitable habitat is not present; there are no areas of open waters large enough for this species.
Pelecanus occidentalis californicus	California brown pelican	FE	Nests in colonies on offshore areas that is free from predators and human disturbance. This species uses breakwaters, jetties, sand spits and sand bars extensively as day-time loafing and nocturnal roost areas.	A	There is no suitable habitat present, the BSA is inland and is not in the vicinity if the ocean.
Phalacrocorax auritus	Double-crested cormorant	CA SA	Found in a variety of marine and inland aquatic habitats. Feeds in the water and requires a nearby perch for resting during the day.	A	Suitable habitat is not present for this species.
Rallus longirostris obsoletus	California clapper rail	FE	Found in a range of salt and brackish water marshes, typically dominated by pickleweed and Pacific cordgrass. Uses a small network of small tidal slough for foraging with nests constructed near foraging sites.	A	There is no suitable habitat present; no marshes are present in the BSA. Furthermore, no pickleweed or Pacific cordgrass were observed in the BSA.
Sternula antillarum browni	California least tern	FE; SE (nesting colony)	Nests in areas relatively free of human or predatory disturbance. Nests on barren to sparsely vegetated sites near water, usually on a sandy or gravelly substrate. Requires unpolluted, shallow-water feeding areas in lagoons and estuaries, year-round.	A	Suitable habitat is not present; the BSA is located in a highly urbanized area.
Reptiles					
Anniella pulchra pulchra	Silvery legless lizard	CSC	Endemic to California, this species ranges from Antioch into Baja California. This species is found in areas that require sandy or loose loamy soils under sparse vegetation of beaches, chaparral, or near sycamores or oaks that grow on stream terraces. Generally found near rocks, logs and other cover.	HP	Suitable habitat is present in the oak woodland. See discussion in Section 4.3.6.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Emys marmorata	Pacific pond turtle	CSC	Occurs in permanent or nearly permanent water sources, ponds, marshes, rivers, streams and irrigation ditches with emergent vegetation and basking sites. Lay eggs in upland habitat consisting of sandy banks or grassy, open fields.	HP	Suitable habitat is present at all bridge locations. See discussion in Section 4.3.7.
Masticophis lateralis euryxanthus	Alameda whipsnake	FT	This species inhabits a variety of chaparral, coastal sage scrub and coastal scrub. This species forages on rocky outcrops and utilizes rodent burrows, rocks and crevices for protection.	A	Suitable habitat is not present; there are no rocky outcrops or crevices in the BSA.
Phrynosoma blainvillii	Coast horned lizard	CSC	Habitat includes scrublands, grasslands and woodlands. Requires loose, fine soils and open areas for basking.	A	Potentially suitable habitat is present at Bridge No. 28C0183; however, the grassland is located in a floodplain which renders it unsuitable for this species.
Thamnophis gigas	Giant garter snake	FT	Streams and sloughs, usually with mud bottom. One of the most aquatic of garter snakes; usually in areas of freshwater marsh and low-gradient streams with emergent vegetation, also drainage canals and irrigation ditches and ponds and small lakes.	A	The BSA is out of range for this species.
Amphibians					
Ambystoma californiense	California tiger salamander	FT; ST	Most commonly found in annual grassland habitat, but also occurs in grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats. Requires vernal pools or other seasonal water bodies for breeding. Needs underground refuges, especially ground squirrel burrows.	A	Although the BSA is located within the range of the species, no suitable aquatic or upland habitat is present in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Rana boylii	Foothill yellow-legged frog	CSC	Frequents stream and rivers with rocky substrate and open sunny banks in forests and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded spring-fed pools.	A	Suitable habitat is not present; the BSA is not within forests or woodlands.
Rana draytonii	California red-legged frog	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	HP	This species is highly documented within the search area. Suitable aquatic non-breeding habitat and upland habitat for this species is present at the bridge at the 10 bridge locations. See discussion in Section 4.3.8.
Insects					
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	CA SA	Found in upland areas near vernal pools.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Efferia antiochi	Antioch efferian robber fly	CA SA	Known only from the sand dunes at Antioch and San Joaquin Valley.	A	Suitable habitat is not present; the BSA is out of range for this species.
Idiostatus middlekauffi	Middlekauff's shieldback katydid	CA SA	Known only from the sand dunes at Antioch and San Joaquin Valley.	A	The BSA is out of range for this species.
Metapogon hurdi	Hurd's metapogon robberfly	CA SA	Known only from the sand dunes at Antioch and San Joaquin Valley.	A	The BSA is out of range for this species.
Myrmosula pacifica	Antioch multilid wasp	CA SA	Known only from the sand dunes at Antioch and San Joaquin Valley.	A	The BSA is out of range for this species.
Perdita scitula antiochensis	Antioch andrenid bee	CA SA	Inhabits sand dunes or other loose, sandy deposits with late summer and fall-flowering endemics, such as Guitierrezia, Senecio, and Eriognum.	A	The BSA is out of range for this species.
Philanthus masalis	Antioch specid wasp	CA SA	Known only from the sand dunes at Antioch and San Joaquin Valley.	A	The BSA is out of range for this species.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Fish					
Acipenser medirostris	Green sturgeon	FT	Found in both freshwater and saltwater habitats; most often in marine waters; estuaries, lower reaches of large rivers, salt or brackish water off river mouths. Spawning occurs in deep pools or “holes” in large, turbulent, freshwater mainstream rivers.	A	The BSA is out of range for this species.
Archoplites interruptus	Sacramento perch	CSC	Typically found in warm water reservoirs and ponds. Survives in greater numbers in turbid lakes with no vegetation.	A	Suitable habitat is not present in the BSA.
Eucyclogobius newberryi	Tidewater goby	FE; CSC	Primarily found in waters of coastal lagoons, estuaries, and marshes. This species is absent from areas where streams do not form lagoons or estuaries.	A	Suitable habitat is not present; there are no coastal lagoons or estuaries within the BSA.
Hypomesus transpacificus	Delta smelt	FT; SE	With the exception of spawning season, delta smelt generally inhabits the freshwater-saltwater mixing zone of an estuary. Spawning occurs in river channels upstream from the mixing zone.	A	The BSA is out of range for this species.
Onorhynchus mykiss	Central California Coast steelhead	FT	Inhabits coastal streams from the Russian River to Soquel Creek in Santa Cruz. This species also inhabits tributaries of San Francisco and San Pablo bays.	HP	Potentially suitable habitat is present at four of the bridges. See discussion in Section 4.3.9.
Oncorhynchus mykiss	Central Valley steelhead	FT	Populations occur and spawn in the Sacramento and San Joaquin rivers and their tributaries.	A	The BSA is out of range for this species.
Oncorhynchus tshawytscha	Central Valley spring-run chinook salmon	FT	Sacramento and San Joaquin Rivers and tributaries. Primarily found in Butte, Big Chico, Deer, and Mill creeks. Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel.	A	The BSA is out of range for this species.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Oncorhynchus tshawytscha	Sacramento River winter-run chinook salmon	FE	Sacramento River below Keswick Dam. Spawns in the Sacramento River but not in tributary streams.	A	The BSA is out of range for this species.
Pogonichthys macrolepidotus	Sacramento splittail	CA SA	Inhabits upper San Francisco estuary and the Central Valley. Only remnant populations are present in the Delta and require adequate freshwater outflow and floodplain inundation.	A	Suitable habitat is not present for this species.
Spirinchus thaleichthys	Longfin smelt	CSC	Inhabits Bay, estuary, and near shore coastal environments from San Francisco Bay north to Lake Earl, near the Oregon border.	A	The BSA is out of range for this species.
Invertebrates					
Anthicus antiochensis	Antioch Dunes anthicid beetle	CA SA	Extirpated from the type locality at Antioch Dunes. They have been observed from sites along the Sacramento River in Glenn, Tehama, Shasta, and Solano Counties, and from one site at Nicolas on the Feather River in Sutter County.	A	The BSA is not within range for this species.
Apodemia mormo langei	Lange's metalmark butterfly	FE	This species is endemic to the Antioch Dunes. The Lange's metalmark butterfly lays its eggs on a subspecies of naked buckwheat (*Erogiomun nudum var. auriculatum*).	A	The BSA is not within the Antioch Dunes and naked buckwheat was not observed in the BSA.
Branchinecta conservatio	Conservancy Fairy shrimp	FE	Endemic to California and is known to occur in several disjunct populations ranging from Tehama to Ventura counties. The conservancy fairy shrimp occurs in vernal pools found on several different landforms, geologic formations and soil types. They have been observed in vernal pools ranging in size from 323 to 3,834,675 square ft. Observations suggest this species is often found in pools that are relatively large and turbid.	A	Suitable habitat is not present, no vernal pools were observed in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Branchinecta longiantenna	Longhorn fairy shrimp	FE	Endemic to California vernal pool habitat within the Central Valley. This species is dependent on seasonally inundated vernal pools.	A	Suitable habitat is not present, no vernal pools were observed in the BSA.
Coelus gracilis	San Joaquin dune beetle	CA SA	Extirpated from the Antioch Dunes. They have been observed in small isolated sand dunes along the western edge of the San Joaquin Valley.	A	BSA is out of range for this species.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*). Prefers branches greater than 1 inch in diameter.	A	Suitable habitat is not present, no blue elderberry was observed in the BSA.
Elaphrus viridis	Delta green ground beetle	FT	Slopes, ridges, chaparral, broadleafed upland forest, coastal scrub and woodlands.	A	Suitable habitat is not present within the BSA.
Lepidurus packardi	Vernal pool tadpole shrimp	FE	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities.	A	Suitable habitat is not present, no vernal pools were observed within the BSA.
Linderiella occidentalis	California linderiella	FT	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities.	A	Suitable habitat is not present; there are no seasonal or vernal pools in the BSA.
Lytta molesta	Molestan blister beetle	CA SA	Found on flowers such as *Lupinus*, *Trifolium wormskioldii* in dried vernal pools, and *Eriodium* in Central California.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Microcina leei	Lee's micro-blind harvestman	CA SA	Found beneath sandstone rocks in open oak grassland and thickly forested areas in Alameda County.	A	BSA is out of range for this species.
Speyeria callippe callippe	Callippe silverspot butterfly	FE	Found in native grassland and adjacent habitat. This species lays their eggs on dry remains of the Johnny-jump-up (*Viola pedunculata*) or surrounding debris.	A	Suitable habitat is not present, no native grasslands occur in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Syncaris pacifica	California freshwater shrimp	FE	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. Within the Sacramento Valley.	A	Suitable habitat is not present, no vernal pools or other ponded habitat was observed within the BSA.
Plants					
Amsinckia grandiflora	Large flowered fiddleneck	List 1B.1; FE; SE	Valley grassland and foothill woodland, grassy slopes (0 – 980 ft). Blooms April – May.	A	This species is presumed extinct in Contra Costa county.
Amsinckia lunaris	Bent-flowered fiddleneck	List 1B.2	Gravelly slopes, grassland, openings in woodlands, often serpentine (10 – 1, 640 ft). Blooms March – June.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Androsace elongata ssp. acuta	California androsace	List 4.2	Dry, grassy, slopes in chaparral s and scrub (0 – 4,000 ft). Blooms March – June.	A	Suitable habitat is not present; no chaparral or scrub slopes are present in the BSA.
Anomobryum julaceum	Slender silver moss	List 2B.2	Damp rock and soil on outcrops, usually on road cutouts in upland and coniferous forests (320 – 3,280 ft.).	A	Suitable habitat is not present; no outcrops are present in the BSA.
Arctostaphylos auriculata	Mt. Diablo manzanita	List 1B.3	Sandstone, upland chaparral near coast (450 – 2,100 ft.). Blooms January – March.	A	Suitable habitat is not present; no outcrops are present in the BSA.
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	List 1B.2	Chaparral and rock outcrops (780 – 3,600 ft.). Blooms January – March.	A	Suitable habitat is not present; no outcrops are present in the BSA.
Arctostaphylos pallida	Pallid manzanita	List 1B; FT; SE	Slopes, ridges, chaparral, broadleafed upland forest, coastal scrub and woodlands (650 – 1,600 ft.). Blooms January – March.	A	Suitable habitat is not present within the BSA.
Astragalus tener var. tener	Alkali milk-vetch	List 1B.1	Alkaline flats, vernally moist meadows, vernal pools (0 – 200 ft.). Blooms March – June.	A	Suitable habitat is not present; no vernal pools or alkaline flats are present in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Atriplex cordulata var. cordulata	Heartscale	List 1B.2	Chenopod scrub, valley grassland, wetland-riparian, likely to occur in wetlands or non-wetlands (0-1,000ft.). Blooms April – October.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Atriplex coronata var. coronata	Crownscale	List 4.2	Chenopod scrub, valley and foothill grassland, vernal pools, alkaline, often clay (0 – 56 ft.). Blooms March – October.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Atriplex depressa	Brittlescale	List 1B.2	Alkaline or clay soils, playas (0 – 1,050 ft.). Blooms April – October.	A	Suitable habitat is not present; there are no playas, alkaline or clay soils in the BSA.
Atriplex joaquinana	San Joaquin spearscale	List 1B.2	Alkaline soils, meadows and valley and foothill grassland (0 – 2,740 ft.). Blooms April – September.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Balsamorhiza macrolepis	Big-scale balsamroot	List 1B.2	Open grassy or rocky slopes in valley grassland and woodlands (295 – 5,100 ft.). Blooms March – June.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Blepharizonia plumosa	Big tarplant	List 1B.1	Valley and foothill grasslands, often on dry hills and plains, clay to clay loam soils (0 – 650 ft.). Blooms July – October.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Calandrinia breweri	Brewer's calandrinia	List 4.2	Sandy and loamy soils in disturbed and burnt sites (32 – 3,900 ft.). Blooms March – June.	A	Suitable habitat is not present; there are no disturbed or burnt sites in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
California macrophylla	Round-leaved filaree	List 1B.1	Open sites, grasslands and scrub (50 – 3,900 ft.). Blooms March – May.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Calochortus pulchellus	Mt. Diablo fairy-lantern	List 1B.2	Wooded slopes, woodlands, rarely chaparral (100 – 2,700 ft.). Blooms April – June.	A	Suitable habitat is not present in the BSA; there are no woody slopes or woodlands within the BSA.
Calochortus umbellatus	Oakland star-tulip	List 4.2	Open chaparral and woodland, generally serpentine (320 – 2,230 ft.). Blooms March – May.	A	Suitable habitat is not present; no serpentine soils are present.
Campanula exigua	Chaparral harebell	List 1B.2	Talus slopes, serpentine soils, chaparral (900 – 4,200 ft.). Blooms May – June.	A	Suitable habitat is not present in the BSA; there is no serpentine soil or talus slopes present.
Castilleja ambigua var. ambigua	Johnny-nip	List 4.2	Coastal bluffs, coastal prairie, grasslands (0 – 1,240 ft.). Blooms March – August.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Centromadia parryi ssp. congdonii	Congdon's tarplant	List 1B.1	Swales, floodplains, grasslands, disturbed sites (0 – 980 ft.). Blooms May – October.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Chloropyron molle ssp. molle	Soft bird's-beak	List 1B.2	Coastal salt marshes (0 – 10 ft.). Blooms July – November.	A	Suitable habitat is not present; the BSA is not in coastal habitat.
Chorizanthe robusta var. robusta	Robust spineflower	List 1B.1; FE	Sand or gravelly in dunes, openings and coastal regions (0 – 980 ft.). Blooms May – September.	A	Suitable habitat is not present; there are no sand or gravelly dunes in the BSA.
Cicuta maculata var. bolanderi	Bolander's water-hemlock	List 2B.1	Marshes and swamps in coastal, brackish or freshwater (0 – 650 ft.). Blooms July – September.	A	Suitable habitat is not present; no marshes or swamps are present in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Cirsium andrewsii	Franciscan thistle	List 1B.2	Bluffs, ravines, seeps, mesic, sometimes serpentinite (0 – 150 ft.). Blooms March – June.	A	Suitable habitat is not present; there are no bluffs, ravines or seeps in the BSA.
Clarkia franciscana	Presidio clarkia	List 1B.1l FE; SE	Serpentine soils in coastal scrub and valley grasslands (80 – 1,110 ft.). Blooms May – June.	A	Suitable habitat is not present, no serpentine soils were observed within the BSA.
Collomia diversifolia	Serpentine collomia	List 4.3	Rocky to gravelly serpentine areas (980 – 1,960 ft.). Blooms May- June.	A	Suitable habitat is not present; there are no rocky or gravelly serpentine areas in the BSA.
Convolvulus simulans	Small-flowered morning glory	List 4.2	Clay, serpentinite seeps, coastal sage scrub (98 – 2,300 ft.). Blooms March – July.	A	Suitable habitat is not present in the BSA. There is no clay, serpentinite or coastal scrub present in the BSA.
Cordylanthus mollis ssp. mollis	Soft bird's beak	List 1B.1; FE	Coastal salt marshes (0 – 32 ft.). Blooms July – November.	A	Suitable habitat is not present; there are no coastal marshes within the BSA.
Cordylanthus nidularius	Mt. Diablo bird's-beak	List 1B.1	Dry, open serpentine in chaparral (1,968 – 2,640 ft.). Blooms July – August.	A	Suitable habitat is not present; no chaparral is present in the BSA.
Cryptantha hooveri	Hoover's cryptantha	List 1A	Dry, coarse sand, flat and hills, valley grasslands and inland dunes (0 – 260 ft.). Blooms April – May.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Delphinium californicum ssp. interius	Hospital Canyon larkspur	List 1B.2	Slopes in woodlands (640 – 3,400 ft.). Blooms April – June.	A	Suitable habitat is not present; no woodland slopes are present in the BSA.
Didymodon norrisii	Norris' beard moss	List 2B.2	Intermittently mesic, rock of lower montane coniferous forest (1,970 – 6,470 ft.).	A	Suitable habitat is not present; no coniferous forests are present.
Dirca occidentalis	Western leatherwood	List 1B.2	Mixed evergreen forest to chaparral, generally in a fog belt (80 – 1,400 ft.). Blooms January – March.	A	Suitable habitat is not present for this species; no evergreen or chaparral is present.
Downingia pusilla	Dwarf downingia	List 2B.2	Vernal pools, roadside ditches (0 – 1,450 ft.). Blooms March – May.	A	Suitable habitat is not present, there are no vernal pool in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Eleocharis parvula	Small spikerush	List 4.3	Brackish, wet soils and salt marshes (0 – 165 ft.). Blooms April – September.	A	Suitable habitat is not present; there is no coastal or brackish habitat.
Eriastrum ertterae	Lime Ridge eriastrum	List 1B.1	Alkaline or semi-alkaline, sandy (650 – 950 ft.).	A	BSA is outside the elevation range of this species.
Eriogonum luteolum var. caninum	Tiburon buckwheat	List 1B.2	Serpentine, sandy or gravelly (0 – 2,300 ft.). Blooms May – October.	A	Suitable habitat is not present in the BSA; there is no sandy or gravelly habitat present.
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	List 1B.1	Sand, inland dunes (0 – 65 ft.). Blooms June – October.	A	Suitable habitat is not present in the BSA; there are no inland dunes present.
Eriogonum truncatum	Mt. Diablo buckwheat	List 1B.1	Sandy areas in coastal scrub, grasslands and chaparral (10 – 1,150 ft.). Blooms April – September.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Eriophyllum jepsonii	Jephson's woolly sunflower	List 4.3	Dry oak woodlands, generally in serpentine soil (650 – 3,360 ft.). Blooms April – June.	A	Suitable habitat is not present; no serpentine soils are in the BSA.
Erysimum capitatum ssp. capitatum	Contra Costa wallflower	List 1B.1; FE; SE	Open areas, alpine, deserts, woodlands and sandy areas (0 – 10,700 ft.) Blooms March – September.	A	Suitable habitat is not present; the BSA is not in alpine, desert or open woodland habitat.
Eschscholzia rhombipetala	Diamond-petaled California poppy	List 1B.1	Fallow fields and open spaces, valley and foothill grasslands with alkali and clay (0 – 984 ft.). Blooms March – April.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Fritillaria agrestis	Stinkbells	List 4.2	Foothill woodland, valley grasslands, chaparral and wetland-riparian; sometimes serpentinite (0 – 1,640 ft.). Blooms March-June.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Fritillaria liliacea	Fragrant fritillary	List 1B.2	Heavy soil, open hills, fields near coast, sometimes serpentine soils (10 – 1,345 ft.). Blooms February – April.	A	Suitable habitat is not present in the BSA; there are not open hills or fields in the BSA.
Galium andrewsii ssp. gatense	Phlox-leaf serpentine bedstraw	List 4.2	Dry, rocky places in serpentine soil (500 – 4,700 ft.). Blooms April – July.	A	Suitable habitat is not present; no rocky or serpentine soils in the BSA.
Helianthella castanea	Diablo helianthella	List 1B.2	Open, grassy areas; riparian, woodland (190 – 4,260 ft.). Blooms April – June.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Hesperolinon breweri	Brewer's western flax	List 1B.2	Chaparral and grassland, usually serpentine (100 – 3,100 ft.). Blooms May – July.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Hoita strobilina	Loma Prieta hoita	List 1B.1	Chaparral, woodland; usually serpentinite (100 – 1,960 ft.). Blooms May – August.	A	Potentially suitable habitat is present in the grasslands within the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Holocarpha macradenia	Santa Cruz tarplant	List 1B.1; FT; SE	Grassy areas, clay soils (0 – 650 ft.). Blooms June – November.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during focused survey. This species is presumed absent from the BSA.
Horkelia cuneata var. sericea	Kellogg's horkelia	List 1B.1	Old dunes, coastal sandhills, sandy or gravelly openings (30 – 650 ft.). Blooms April – August.	A	Suitable habitat is not present; no sandhills or dunes are present in the BSA.
Iris longipetala	Coast iris	List 4.2	Moist, coastal prairie or open coastal forest, mesic (0 – 1,960 ft.). Blooms March – May.	A	Suitable habitat is not present; the BSA is not in coastal habitat.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Isocoma arguta	Carquinez godlenbush	List 1B.1	Alkaline soils in flat grasslands (3 – 400 ft.). Blooms August – December.	A	Suitable habitat is not present; there are no alkaline soils in the BSA.
Juglans californica	Southern California black walnut	List 4.2	Hillsides and canyons, chaparral, coastal scrub, alluvial (180 – 2,952 ft.). Blooms March – July.	A	Suitable habitat is not present; there are no hillsides, canyons or scrub in the BSA.
Juglans hindsii	Northern California black walnut	List 1B.1	Riparian forest and woodland (0 – 1,440 ft.). Blooms April – May.	A	Potentially suitable habitat is present in the BSA. However, this species was not observed during the field survey and consequently is presumed absent from the BSA.
Lasthenia conjugens	Contra Costa goldfields	List 1B.1; FE	Vernal pool, wet meadows (0 – 590 ft.). Blooms March – June.	A	Suitable habitat is not present in the BSA; there are no vernal pools or meadows in the BSA.
Lathyrus jepsonii var. jepsonii	Delta tule pea	List 1B.2	Coastal, estuarine marshes, brackish swamps.	A	Suitable habitat is not present; there is no coastal habitat or marshes in the BSA.
Leptosiphon acicularis	Bristly leptosiphon	List 4.2	Grassy areas, woodland, chaparral (180 – 4,900 ft.). Blooms April – July.	A	Suitable habitat is present in the grasslands within the BSA. However, this species was not observed during focused survey. This species is presumed from the BSA.
Lilaeopsis masonii	Mason's lilaeopsis	List 1B.1	Intertidal marshes (0 – 85 ft.). Blooms June – August.	A	Suitable habitat is not present; there are no marshes in the BSA.
Limosella australis	Delta mudwort	List 2B.1	Muddy or sandy intertidal flats (0 – 32 ft.). Blooms in April.	A	Suitable habitat is not present; there are no intertidal flats present.
Madia radiata	Showy golden madia	List 1B.1	Open slopes, generally clay soils (80 – 4,000 ft.). Blooms March – May.	A	Suitable habitat is not present; there are no open slopes in the BSA.
Malacothamnus hallii	Hall's bush-mallow	List 1B.2	Open chaparral, coastal scrub (30 – 2,500 ft.). Blooms May – September.	A	Suitable habitat is not present; there is no scrub habitat in the BSA.
Meconella oregana	Oregon meconella	List 1B.1	Shaded canyons, coastal prairie and coastal scrub (820 – 2,000 ft.). Blooms March – April.	A	Suitable habitat is not present; there are no canyons or prairies in the BSA.
Micropus amphibolus	Mt. Diablo cottonweed	List 3.2	Opening on slopes, ridges, or rocks (140 – 2,700 ft.). Blooms March – May.	A	Suitable habitat is not present; there are no slopes or ridges in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Monardella antonina ssp. antonina	San Antonio Hills mondarella	List 3	Rocky slopes, ephemeral drainages, oak woodlands and montane forest (1,000 – 3,200 ft.). Blooms June – August.	A	Suitable habitat is not present. The BSA, located at an average of 150 ft, is out of elevation range for this species.
Monolopia gracilens	Woodland woolythreads	List 1B.2	Serpentine grassland or woodland (320 – 3,900 ft.). Blooms March – July.	A	Suitable habitat is not present; there is no serpentine grassland or woodland in the BSA.
Navarretia gowenii	Lime Ridge navarretia	List 1B.1	Vernal pools, clay depressions (250 – 3,280 ft.). Blooms April – July.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Navarretia nigelliformis ssp. radians	Shining navarretia	List 1B.2	Vernal pools, clay depressions (500 – 3,280 ft.). Blooms April – July.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Navarretia heterandra	Tehama navarretia	List 4.3	Heavy soil, vernal pools, wet or drying flats (0 – 3,608 ft.). Blooms April – June.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Navarretia nigelliformis ssp. Migelliformis	Adobe navarretia	List 4.2	Vernal pools, clay depressions (32 – 3,280 ft.). Blooms April – June.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Neostapfia colusana	Colusa grass	List 1B.1; FT	Vernal pools (0 – 328 ft.) Blooms May – August.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	List 1B.1; FE; SE	Sandy bluffs and dunes (0 – 30 ft.) Blooms March – September.	A	Suitable habitat is not present; there are no sandy bluffs or dunes within the BSA.
Phacelia phacelioides	Mount Diablo phacelia	List 1B.2	Open, rocky slopes (1,640 – 4,593 ft.). Blooms April – May.	A	Suitable habitat is not present; there are no rocky slopes in the BSA.
Plagiobothrys diffusus	San Francisco popcorn-flower	List 3.1; SE	Moist places, seeps, coastal prairie (98 – 492 ft.). Blooms March – June.	A	Suitable habitat is not present; there are no seeps or coastal prairies in the BSA.
Plagiobothrys hystruculus	Bearded popcorn-flower	List 1B.1	Wet grassland, vernal pool margins (0 – 164 ft.). Blooms April – May.	A	Suitable habitat is not present; there are no vernal pools in the BSA.
Polygonum mariense	Marin knotweed	List 3.1	Coastal salt, brackish marshes, swamps (0 – 33 ft.).Blooms April – October.	A	Suitable habitat is not present; there are no coastal or brackish marshes in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Rananculus lobbii	Lobb's aquatic buttercup	List 4.2	Ponds (0 – 1,640 ft.). Blooms February – May.	A	Suitable habitat is not present; there are no ponds in the BSA.
Sanicula maritime	Adobe sanicle	List 1B.1	Coastal, grassy, open wet meadows, ravines (0 – 492 ft.). Blooms February – May.	A	Suitable habitat is not present; there are no coastal or open meadows in the BSA.
Sanicula saxatilis	Rock sanicle	List 1B.2	Rocky ridges or talus, chaparral, woodland (2,952 – 3,608 ft.). Blooms April – May.	A	Suitable habitat is not present; there are no rocky ridges or chaparral in the BSA.
Senecio aphanactis	Chapparal ragwort	List 2B.2	Alkaline flats, dry open rocky areas (33 – 1,804 ft.). Blooms January – April.	A	Suitable habitat is not present; there are no rocky areas in the BSA.
Senecio hydrophiloides	Sweet marsh ragwort	List 4.2	Damp hillsides, meadows, seeps (3,937 – 7,217 ft.). Blooms May – August.	A	Suitable habitat is not present. The BSA, located at an average of 150 ft, is out of elevation range for this species.
Sidalcea keckii	Keck's checker-mallow	List 1B.1; FE	Grassland, serpentine, clay (520 – 2,230ft.). Blooms April – June.	A	Suitable habitat is not present; there is no serpentine or clay within the BSA.
Steptanthus albidus ssp. Peramoenus	Most beautiful jewel-flower	List 1B.2	Serpentine, grassy, barren slopes (328 – 2,624 ft.).Blooms March – May.	A	Suitable habitat is not present; there is no serpentine in the BSA.
Streptanthus hispidus	Mt. Diablo jewel-flower	List 1B.3	Rocky chaparral, grassland (1,968 – 3,937 ft.). Blooms March – June.	A	Suitable habitat is not present. The BSA, located at an average of 150 ft, is out of elevation range for this species.
Stuckenia filiformis ssp. aplina	Slender-leaved pondweed	List 2B.2	Shallow, clear water of lakes, drainage channels (984 – 7,053 ft.). Blooms May – July.	A	Suitable habitat is not present. The BSA, located at an average of 150 ft, is out of elevation range for this species.
Symphyotrichum lentum	Suisun Marsh aster	List 1B.2	Brackish and freshwater marshes and swamps (0 – 985 ft). Blooms May – November.	A	Suitable habitat is not present; there are no marshes or swamps in the BSA.
Trifolium hydrocphilum	Saline clover	List 1B.2	Salt marshes, open areas in alkaline soils (0 – 980.). Blooms April – June.	A	Suitable habitat is not present; there are no salt marshes or alkaline soils in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present /Absent	Rationale
Triquetrella californica	Coastal triquetrella	List 1B.2	Coastal scrub (33 – 330 ft.).	A	Suitable habitat is not present; there is no coastal scrub in the BSA.
Tropidocarpum capparideum	Caper-fruited tropidocarpum	List 1B.1	Alkaline soils, low hills, valleys (less than 1,312 ft.). Blooms March – April.	A	Suitable habitat is not present; there are not alkaline soils in the BSA.
Viburnum ellipticum	Oval-leaved viburnum	List 2B.3	Chaparral, Cismontane woodland (705 – 4,593 ft.).Blooms May – June.	A	Suitable habitat is not present; there is no chaparral or cismontane woodlands in the BSA.

Status Code

Federal
FE: Federally listed; Endangered
FT: Federally listed, Threatened
FPE: Federally Proposed for Listing as Endangered
elsewhere in their range.
FPT: Federally Proposed for Listing as Threatened
FC: Federal Candidate List 4: Plants of limited distribution; a watch list
NMFS SC: National Marine Fisheries Service Species of Concern

California Native Plant Society designations:
List 1A: Plants presumed extinct in California.
List 1B: Plants rare and endangered in California and throughout their range.
List 2: Plants rare, threatened or endangered in California but more common

List 3: Plants about which we need more information; a review list.

State
ST: State listed; Threatened
SE: State listed; Endangered
SFP: State Fully Protected
SC: State Candidate
SWL: State Watch List
CSC: California Species of Special Concern
CA SA: Special Animal: General term that refers to taxa that the CNDDB is interested in tracking regardless of legal or protection status: Includes the following categories in addition to those listed above:

Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act Guidelines.
Taxa that are biologically rare, very restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.
Populations in California that may be on the periphery of a taxon's range, but are threatened with extirpation in California.
Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, vernal pools, etc.)
Taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or non-governmental organization (NGO).

Habitat Presence:
HP: Habitat is, or may be present
SP: Species is present
A: No habitat present and no further work needed
CH: Project footprint is located within a designated critical habitat unit.

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

4.1. Habitats and Natural Communities of Special Concern

The BSA contains three natural communities of special concern: black willow thicket, Valley oak woodland, and cattail marsh; which is communities containing riparian habitat. Riparian communities are considered sensitive under CEQA and may be regulated by CDFW pursuant to Section 1602 of the California Fish and Game Code, as described in Section 2.1.2.3. Riparian communities may also be regulated by the ACOE and/or RWQCB if the community is determined to be waters of the U.S. or waters of the State as described in Section 2.1.2.1., and 2.1.2.2. Potential permitting requirements for impacts to these resources are discussed in Section 5.4.

4.1.1. DISCUSSION OF BLACK WILLOW THICKET

4.1.1.1. Survey Results

As described in Section 3.1.3.1., the black willow thicket is a riparian community that is dominated by Goodding's black willow. Other species present in this community include balsam poplar, California black walnut, and Fremont cottonwood. This community is located at along the banks of Galindo Creek at Bridge 28C0115.

4.1.1.2. Project Impacts

The proposed project will result in impacts to the black willow thicket community at Bridge 28C0115 over Galindo Creek. Permanent impacts, totaling 0.019 ac, will occur as a result of placement of RSP and temporary impacts, totaling 0.013 acre, will occur as a result of project staging and access.

4.1.1.3. Avoidance and Minimization Efforts

1. Work in the live channel of Galindo Creek shall be minimized to the extent possible.

2. Work shall occur during periods of low flow in Galindo Creek, typically June 15 through October 15.

3. Brightly colored Environmentally Sensitive Area (ESA) fencing shall be placed along the limits of work to protect habitat adjacent to Galindo Creek. Fencing shall be maintained in good condition for the duration of construction activities.

4. Staging areas, access routes, and construction areas shall be located outside of wetlands and riparian areas to the maximum extent practicable.

5. Measures consistent with the current Caltrans' Construction Site Best Management Practices (BMP) Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Plan [WPCP] Manuals) shall be implemented to minimize effects to wetlands resulting from erosion, siltation, etc. during construction.

6. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6 below. Invasive exotic plants will be controlled to the maximum extent practicable.

Table 6: Native Seed Mix

Scientific Name	Common Name	Rate (Lbs./Acre)	Minimum Percent Germination
Artemisia douglasiana	Mugwort	2.0	50
Baccharis pilularis	Coyote brush	1.0	40
Elymus X triticum	Regreen	10.0	80
Eschscholzia californica	California poppy	2.0	70
Lupinus bicolor	Bicolored lupine	4.0	80

7. During placement of RSP, native topsoil from the channel will be incorporated within the RSP to provide a seeding and planting medium. Areas of RSP above the OHWM will be revegetated with the seed mix specified in Table 6.

8. Prior to issuance of a grading permit or other authorization to proceed with project construction, the project proponent shall obtain any regulatory permits that are required from the ACOE, RWQCB, and /or CDFW.

4.1.1.4. Compensatory Mitigation

The removal of willow riparian vegetation shall be compensated for at a 3:1 ratio. Mitigation shall be accomplished using one of the following methods, or by using a combination of methods, contingent upon approval by the CDFW, ACOE, and RWQCB:

- Preservation, creation, and/or restoration of the impacted resources at a minimum ratio of 3:1.

- Purchase of credits at an approved mitigation bank at a minimum of 1:1 mitigation ratio.

All mitigation lands shall be protected in perpetuity through recordation of a conservation easement or equivalent method.

4.1.1.5. Cumulative Impacts

Impacts to black willow thicket in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the implementation of the avoidance and minimization measures detailed above, and the compensatory mitigation proposed, the project will not substantially contribute to cumulative effects for black willow thicket.

4.1.2. DISCUSSION OF VALLEY OAK WOODLAND

4.1.2.1 Survey Results

As discussed in Section 3.1.3.1., the Valley oak woodland series is a natural community dominated by Valley oak. Dominant understory species include annual grasses, Himalayan blackberry, and ivy. This community is only located at Bridge 28C0361.

4.1.2.2. Project Impacts

The project will remove 0.002 ac of Valley oak woodland at Bridge 28C0361 over Mount Diablo Creek as a result of placement of RSP. There will be no temporary impacts to Valley oak woodland as a result of this project.

4.1.2.3. Avoidance and Minimization Efforts

1. Work in the live channel of Mount Diablo Creek shall be minimized to the extent possible.

2. Work shall occur during periods of low flow in Mount Diablo Creek, typically June 15 through October 15.

3. Brightly colored fencing shall be placed along the limits of work to protect habitat adjacent to Mount Diablo Creek. Fencing shall be maintained in good condition for the duration of construction activities.

4. Staging areas, access routes, and construction areas shall be located outside of wetlands and riparian areas to the maximum extent practicable.

5. Measures consistent with the current Caltrans' Construction Site BMP Manual (including the SWPPP and WPCP Manuals) shall be implemented to minimize effects to wetlands resulting from erosion, siltation, etc. during construction.

6. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

7. Prior to issuance of a grading permit or other authorization to proceed with project construction, the project proponent shall obtain any regulatory permits that are required from the ACOE, RWQCB, and /or CDFW.

4.1.2.4. Compensatory Mitigation

Mitigation for the removal of the Valley oak vegetation will be accomplished by using one of the following methods, or by using a combination of methods, contingent upon approval by the CDFW, ACOE, and RWQCB:

- Preservation, creation, and/or, restoration of the impacted resources at a minimum ratio of 3:1.
- Purchase of credits at an approved mitigation bank at a minimum of 1:1 mitigation ratio.

All mitigation lands shall be protected in perpetuity through recordation of a conservation easement or equivalent method.

4.1.2.5. Cumulative Effects

Impacts to Valley oak woodland in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the implementation of the avoidance and minimization measures detailed above, and the compensatory mitigation proposed, the project will not substantially contribute to cumulative effects for Valley oak woodland.

4.1.3. DISCUSSION OF CATTAIL MARSH

4.1.3.1. Survey Results

As discussed in Section 3.1.3.1., the cattail marsh is a natural riparian community. Broad-leaved cattail is the dominant plant species with Baltic rush and Italian rye grass intermixed. This community is located at three bridge locations (28C0183, 28C0224, 28C0357).

4.1.3.2. Project Impacts

The project will result in temporary impacts, totaling 0.159 ac, to cattail marsh at the 28C0192 bridge over Walnut Creek as a result of temporary access and staging. No permanent impacts to cattail marsh will occur as a result of project construction. Project impacts are shown in Table 7.

Table 7: Impacts to the Cattail Marsh Community

Bridge No.	Cattail Marsh	
	Permanent	Temporary
28C0091L 28C0091R	0.00	0.00
28C0115	0.00	0.00
28C0183	0.00	0.055
28C0221	0.00	0.00
28C0222	0.00	0.00
28C0224	0.00	0.10
28C0278	0.00	0.00
28C0357	0.00	0.004
28C0361	0.00	0.00
Total	**0.000**	**0.159**

4.1.3.3. Avoidance and Minimization Efforts

1. Work in the live channel of Walnut Creek, Pine Creek, and SDM Channel shall be minimized to the extent possible.

2. Work shall occur during periods of low flow in Walnut Creek, Pine Creek, and SDM Channel, typically June 15 through October 15.

3. Brightly colored fencing shall be placed along the limits of work to protect habitat adjacent to Walnut Creek, Pine Creek, and SDM Channel. Fencing shall be maintained in good condition for the duration of construction activities.

4. Staging areas, access routes, and construction areas shall be located outside of wetlands and riparian areas to the maximum extent practicable.

5. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the SWPPP and WPCP Manuals) shall be implemented to minimize effects to wetlands resulting from erosion, siltation, etc. during construction.

6. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

7. During placement of RSP, native topsoil from the channel will be incorporated within the RSP to provide a seeding and planting medium. Areas of RSP above the OHWM will be revegetated with the seed mix specified in Table 6.

8. Prior to issuance of a grading permit or other authorization to proceed with project construction, the project proponent shall obtain any regulatory permits that are required from the ACOE, RWQCB, and /or CDFW.

4.1.3.4. Compensatory Mitigation

No compensatory mitigation is proposed with the implementation of avoidance and minimization efforts in Section 4.1.3.3.

4.1.3.5. Cumulative Effects.

Impacts to cattail marsh in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the implementation of the avoidance and minimization measures detailed above, and the compensatory mitigation proposed, the project will not substantially contribute to cumulative effects for cattail marsh.

4.2. Special Status Plant Species

No special status plants occur in the BSA; therefore no impacts are expected to occur to special status plants.

4.3. Special Status Animal Species Occurrences

4.3.1. DISCUSSION OF BATS

Three species of bats may be present in the BSA, the pallid bat (*Antrozous pallidus*) and the western red bat (*Lasiurus blossevillii*), both are State species of concern, and the hoary bat (*Lasiurus cinereus*), a State special species. None of these species have federal status.

Bats are nocturnal and are found in a variety of habitats. Many species forage over water; some also hunt over shrubs or meadows, within trees, and along forest edges. Some species have separate roosts for day, night, maternal, and hibernation use, whereas some species may use the same roost for more than one purpose. Bats roost in a variety of crevices, cavities, and protected sites; roosting sites may include bridges, buildings, cliff crevices, caves, mines, and trees. Multiple species often roost together.

The pallid bat is a locally common species of low elevations, and is a yearlong resident through most of its range. It uses a wide variety of habitats from sea level up through mixed conifer forests, but is most common in open, dry habitats with rocky areas for roosting. This bat forages among trees and shrubs and over open ground, and often takes prey on the ground. Its diet is a variety of insects and spiders, including large, hard-shelled prey, which is often carried to a perch or night roost for consumption. Caves, crevices, and sometimes hollow trees and buildings are used for day roosts. Roosts must protect bats from high temperatures. Night roosts may be in more open sites, such as porches and open buildings. Pallid bats are social, and most roost in

groups of 20 or more. Maternity colonies form in early April, and may have 10 to 100 individuals. Males may roost separately or in the nursery colony.

The western red bat is a common species in the Central Valley Basin and ranges up into the lower reaches of the Sierra Nevada Mountains. It is mostly a solitary species and roosts predominantly in trees at the edge of streams, fields, or urban areas. This species is an aerial predator, foraging over open terrain.

Hoary bats are one of America's largest bats. Hoary bats are not attracted to houses or other human structures, and they stay well-hidden in foliage throughout the day. They typically roost 10-15 ft up in trees along forest borders. In the summer, hoary bats do not emerge to feed until after dark, but during migration, they may be seen soon after sundown. They sometimes make round trips of up to 24 miles (mi) on the first foraging flight of the night, and then make several shorter trips, returning to the day roost about an hour before sunrise. Between late summer and early fall, they start their long journey south, migrating to subtropical and possibly even tropical areas to spend the winter.

4.3.1.1. Survey Results

There are 11 occurrences for the pallid bat within the search area. The closest occurrence, dated 1942, is located approximately 1.5 mi northwest of Bridge 28C0361 and 1.3 mi northeast of Bridge 28C0221. The open water, annual brome grassland, and cattail marsh provides suitable foraging habitat for this species. Potential day roosts may be observed in tree hollows in the Valley oak woodland within the BSA. Potential night roost habitat for the pallid bat is present at all 10 bridges.

There is only one occurrence of the western red bat in the search area. Dated, 2004, this occurrence is located approximately 9 mi east of the BSA. The Valley oak woodland provides suitable day roost habitat. The open water, annual brome grassland, and cattail marsh provides suitable foraging habitat for this species. Potential night roost habitat for the western red bat is present at all 10 bridges.

The closest documented occurrence for the hoary bat is located in the center of the BSA, approximately 1 mi northwest of Bridge 28C0222. The Valley oak woodland around Bridge 28C0361 provides suitable day roost habitat. The open water, annual brome grassland, and cattail marsh provides suitable foraging habitat. Potential night roost habitat for the hoary bat is present at all 10 bridges.

4.3.1.2. Project Impacts

The project will result in permanent impacts to Valley oak woodland, totaling 0.002 ac, at bridge No. 28C0361 over Mount Diablo Creek. However, because no trees will be removed there will be no permanent impacts to bat roosting habitat. There will be no temporary impacts to bat roosting habitat.

The project will result in permanent and temporary impacts to foraging habitat for the bats. Table 8, shows impacts to the annual brome grassland, cattail marsh and open water.

Table 8: Impacts to Bat Foraging Habitat (acres)

Bridge No.	Annual Brome Grassland		Cattail Marsh		Open Water	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00	0.00	0.00
28C0115	0.013	0.012	0.00	0.00	0.00	0.00
28C0183	0.00	0.153	0.00	0.055	0.00	0.076
28C0221	0.00	0.00	0.00	0.00	0.00	0.00
28C0222	0.00	0.00	0.00	0.00	0.00	0.00
28C0224	0.00	0.00	0.00	0.10	0.00	0.005
28C0278	0.00	0.00	0.00	0.00	0.00	0.00
28C0357	0.00	0.00	0.00	0.04	0.00	0.00
28C0361	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.018**	**0.245**	**0.00**	**0.195**	**0.00**	**0.081**

4.3.1.3. Avoidance and Minimization Efforts

The following avoidance and minimization measures are proposed to reduce any potential impacts to foraging bats:

1. Construction activities that could affect roosting bats, as determined by a qualified biologist, will be conducted during daylight hours to avoid disturbing bats potentially utilizing the bridge structure or trees at night.

2. Following completion of the new bridge, all fill slopes, temporary impact and/or otherwise disturbed areas shall be revegetated with the seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

4.3.1.4. Compensatory Mitigation

No compensatory mitigation is required with the avoidance and minimization efforts listed in Section 4.3.1.3.

4.3.1.5.Cumulative Impacts

Impacts to bats in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the amount of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and

minimization measures detailed above, the project will not substantially contribute to cumulative effects for bats.

4.3.2. DISCUSSION OF COOPER'S HAWK

Cooper's hawks (*Accipiter cooperii*) are on the State watch list for nesting, but have no other formal status. In California, they are primarily year-long residents, and are found throughout most of the wooded portion of the State.

Cooper's hawks favor riparian areas and those near open water for nesting, and often use broken woodlands and habitat edges for hunting. Cooper's hawks are aerial specialists that primarily catch birds in flight. Prey may be chased through trees and thickets, or snatched from a perch. These hawks build stick nests in dense stands of live oak, riparian deciduous forest, and occasionally coniferous forest, usually near a stream. Birds are monogamous. Breeding season is March through August, with peak activity May through July. Young are dependent on adults for 30 – 40 days after fledging.

4.3.2.1. Survey Results

There are two CNDDB results within the search area for this species. The closest occurrence, dated 1999, is located approximately 9.5 mi west of Bridge 28C0091 L/R.

The Valley oak woodland, at Bridge 28C0361, and landscape habitat, at Bridges 28C0278 and 28C0224 provides suitable nesting habitat for this species. The black willow thicket, ruderal/ruderal grassland, and annual brome grasslands throughout the BSA provide suitable foraging habitat.

4.3.2.2. Project Impacts

The project will result in permanent and temporary impacts to nesting habitat for the Cooper's hawk, as shown in Table 9.

Table 9: Impacts to Cooper's Hawk Nesting Habitat (acres)

Bridge No.	Valley Oak Woodland		Landscape	
	Permanent	Temporary	Permanent	Temporary
28C0091L	0.00	0.00	0.00	0.00
28C0091R				
28C0115	0.00	0.00	0.00	0.00
28C0183	0.00	0.00	0.00	0.00
28C0221	0.00	0.00	0.03	0.00
28C0222	0.00	0.00	0.00	0.013
28C0224	0.00	0.00	0.00	0.00
28C0278	0.00	0.00	0.00	0.003
28C0357	0.00	0.00	0.00	0.007
28C0361	0.002	0.00	0.00	0.00
Total	**0.002**	**0.00**	**0.03**	**0.023**

Permanent and temporary impacts will occur to foraging habitat as a result of disturbance to black willow thicket, ruderal/ruderal grassland, and annual brome grassland, as shown in Table 10.

Table 10: Impacts to Foraging Habitat for Coopers Hawk

Bridge No.	Annual Brome Grassland		Black Willow Thicket		Ruderal/Ruderal Grassland	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00	0.00	0.00
28C0115	0.013	0.012	0.019	0.013	0.00	0.00
28C0183	0.00	0.153	0.00	0.00	0.00	0.00
28C0221	0.00	0.00	0.00	0.00	0.001	0.00
28C0222	0.00	0.00	0.00	0.00	0.00	0.016
28C0224	0.00	0.00	0.00	0.00	0.00	0.004
28C0278	0.00	0.00	0.00	0.00	0.00	0.007
28C0357	0.00	0.00	0.00	0.00	0.00	0.00
28C0361	0.00	0.00	0.00	0.00	0.008	0.006
Total	**0.018**	**0.245**	**0.019**	**0.013**	**0.009**	**0.033**

4.3.2.3. Avoidance and Minimization Efforts

The following avoidance and minimization measures are proposed to reduce any potential impacts to nesting Cooper's hawks:

1. If possible, all trees that will be impacted by project construction shall be removed during the non-nesting season (between September 16 and February 1), to avoid take of a nest or bird. If this is not possible, a survey for nesting Cooper's hawks shall be conducted in the BSA and within a 500 ft radius by a qualified biologist. The survey shall be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

2. If nesting Cooper's hawks are found within 500 ft of the BSA, a qualified biologist shall evaluate the potential for the proposed project to disturb nesting activities. The evaluation criteria shall include, but are not limited to, the location/orientation of the nest in the nest tree, the distance of the nest from the BSA, and line of sight between the nest and the BSA.

3. CDFW and Caltrans shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

4. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.

5. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and

revegetated with the native seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

4.3.2.4. Compensatory Mitigation

No compensatory mitigation is required with implementation of avoidance and minimization efforts listed in Section 4.3.2.3.

4.3.2.5. Cumulative Effects

Impacts to Cooper's hawk in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the amount of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and minimization measures detailed above, the project will not substantially contribute to cumulative effects for Cooper's hawk.

4.3.3. DISCUSSION OF TRICOLORED BLACKBIRD

The tricolored blackbird (*Agelaius tricolor*) is a California Species of Concern and a USFWS Migratory Non-game Bird of Management Concern.

Tricolored blackbirds are highly colonial, gregarious in all seasons, and nomadic in fall. They are largely endemic to the lowlands of California, and prefer to nest in freshwater marshes with dense growths of herbaceous vegetation, such as mustard, blackberry, and thistle. Willow and cottonwood riparian areas are also used for nesting. A nesting area must be large enough to support a minimum colony of about 50 pairs. They feed in flocks even when breeding; foraging in grassy fields, crops, flooded areas and edges of ponds, and eating insects, seeds, and cultivated grains.

4.3.3.1. Survey Results

There are seven CNDDB occurrences in the search area. The closest location, dated 1980, is located approximately 3.8 mi northwest of the BSA.

The black willow thicket at the Bridge 28C0115 provides suitable nesting habitat for this species. The annual brome grassland, ruderal grassland and cattail marsh throughout the BSA provides suitable foraging habitat.

4.3.3.2. Project Impacts

The proposed project will result in impacts to tricolored blackbird nesting habitat at Bridge 28C0115 over Galindo Creek. Permanent impacts, totaling 0.019 ac, will occur as

a result of placement of RSP and temporary impacts, totaling 0.013 ac, will occur as a result of project staging and access.

The annual brome grassland, ruderal/ruderal grassland and cattail marsh provide suitable foraging habitat for tricolored blackbirds. Temporary and permanent impacts are shown in Table 11.

Table 11: Impacts to Tricolored Blackbird Foraging Habitat (acres)

Bridge No.	Annual Brome Grassland		Ruderal/Ruderal Grassland		Cattail Marsh	
	Permanent	Temporary	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00	0.00	0.00
28C0115	0.013	0.012	0.00	0.00	0.00	0.00
28C0183	0.00	0.153	0.00	0.00	0.00	0.055
28C0221	0.00	0.00	0.001	0.00	0.00	0.00
28C0222	0.00	0.00	0.00	0.016	0.00	0.00
28C0224	0.00	0.00	0.00	0.004	0.00	0.010
28C0278	0.00	0.00	0.00	0.007	0.00	0.00
28C0357	0.00	0.00	0.00	0.00	0.00	0.004
28C0361	0.00	0.00	0.008	0.006	0.00	0.00
Total	**0.018**	**0.245**	**0.009**	**0.033**	**0.00**	**0.069**

4.3.3.3. Avoidance and Minimization Efforts

The following avoidance and minimization measures should reduce any potential impacts to tricolored blackbirds:

1. If construction begins during the nesting season (February 1 to August 31), a survey for nesting tricolored blackbirds shall be conducted in the BSA and within a 100-ft radius by a qualified biologist. The survey shall be conducted a maximum of 14 days prior to the start of construction. The survey area may be decreased due to property access constraints, etc.

2. If nesting tricolored blackbirds are found within 100 ft of the BSA during the survey, a setback of 100 ft from nesting areas shall be established and marked with ESA fencing. ESA fencing shall be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.

3. CDFW and Caltrans shall be constacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

4. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.

5. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

4.3.3.4. Compensatory Mitigation

No compensatory mitigation is required with avoidance and minimization efforts listed in Section 4.3.3.3.

4.3.3.5. Cumulative Effects

Impacts to tricolored blackbird in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the amount of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and minimization measures detailed above, the project will not substantially contribute to cumulative effects for tricolored blackbird.

4.3.4. DISCUSSION OF SHORT-EARED OWL

The short-eared owl (*Asio flanneus*) is a State species of concern, it has no federal status. Found primarily in the Central Valley, western Sierra Nevada foothills, and along the coastline. This species inhabits open annual grasslands, prairies, meadows, marshes and woodlands. For nesting, this species requires dense vegetation such as tall grasses, cattails and wetlands. Voles and other small mammals are primary food source, with occasional reptiles and amphibians.

4.3.4.1. Survey Results

There is only one CNDDB record for this species in the search area, dated 1987. This occurrence is located approximately 10 mi northeast of the BSA.

The cattail marsh, ruderal grassland, and annual brome grasslands throughout the BSA provide suitable foraging habitat for this species. There is no suitable nesting habitat in the BSA due to the location in an active floodplain.

4.3.4.2. Project Impacts

The project will result in permanent and temporary impacts to foraging habitat for the short-eared owl. The impacts to foraging habitat are the same as those for tricolored blackbird, listed in Section 4.3.3.2.

4.3.4.3. Avoidance and Minimization Effort

1. If nesting short-eared owls are found within 100 ft of the BSA during the survey, a setback of 100 ft from nesting areas shall be established and marked with ESA fencing. ESA fencing shall be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.

2. CDFW and Caltrans shall be constacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

3. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.

4. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

4.3.4.4. Compensatory Mitigation

No compensatory mitigation is required with avoidance and minimization efforts listed in Section 4.3.4.3.

4.3.4.5. Cumulative Effects

Impacts to short-eared owl in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the amount of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and minimization measures detailed above, the project will not substantially contribute to cumulative effects for short-eared owl.

4.3.5. DISCUSSION OF NORTHER HARRIER

The northern harrier (*Circus cyaneus*) is a State species of concern, it has no federal status. This species breeds in wide-open habitats that range from Arctic to grasslands to marshes. Nests are placed on the ground, usually in a dense clump of vegetation such as willows, grasses, sedges and bulrushes. This species is most commonly found in large, undisturbed areas of wetlands and grasslands. Flying low over the ground, harriers eat small mammals, reptile, birds and amphibians.

4.3.5.1. Survey Results

There are two CNDDB records within the search area. The closest record, dated 1992, is located approximately 9.5 mi northwest of the BSA.

The annual brome grassland and ruderal grassland provides suitable foraging habitat for northern harrier. These communities are located as all 10 bridge locations. There is no suitable nesting habitat present in the BSA duet to the location within an active floodplain.

4.3.5.2. Project Impacts

The project will result in permanent impacts as a result of slope paving and rehabilitation and placement of RSP. Temporary impacts will occur as a result of construction access and staging. Permanent and temporary impacts are shown in Table 12, below.

Table 12: Permanent and Temporary Impacts to Northern Harrier Foraging Habitat (acres)

Bridge No.	Annual Brome Grassland		Ruderal/Ruderal Grassland	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00
28C0115	0.013	0.012	0.00	0.00
28C0183	0.00	0.153	0.00	0.00
28C0221	0.00	0.00	0.001	0.00
28C0222	0.00	0.00	0.00	0.016
28C0224	0.00	0.00	0.00	0.004
28C0278	0.00	0.02	0.00	0.007
28C0357	0.00	0.00	0.00	0.00
28C0361	0.00	0.00	0.008	0.006
Total	**0.018**	**0.245**	**0.009**	**0.033**

4.3.5.3. Avoidance and Minimization Efforts

The following avoidance and minimization measures will be implemented to reduce potential impacts to northern harrier:

1. If nesting northern harrier are found within 100 ft of the BSA during the survey, a setback of 100 ft from nesting areas shall be established and marked with ESA fencing. ESA fencing shall be maintained during the nesting season until construction is complete or the young have fledged, as determined by a qualified biologist.

2. CDFW and Caltrans shall be constacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

3. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities that occur in breeding season to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.

4. Following completion of work, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6. Invasive exotic plants will be controlled to the maximum extent practicable.

4.3.5.4. Compensatory Mitigation

No compensatory mitigation is required with avoidance and minimization efforts listed in Section 4.3.5.3.

4.3.5.5. Cumulative Effects

Impacts to northern harrier in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the abundance of nesting habitat available for this species in the region relative to the amount of nesting habitat in the BSA, and implementation of the avoidance and minimization measure detailed above, the project will not substantially contribute to cumulative effects for northern harrier.

4.3.6. SILVERY LEGLESS LIZARD

The silvery legless lizard (*Anniella pulchra pulcra*) is a State species of concern, it has no federal status. The silvery legless lizard is nearly endemic to California and ranges from Antioch, in Contra Costa county, south through the Coast, Transverse, and Pacific ranges. This species is primarily found in area with sandy or loose loamy soils such as under the sparse vegetation of beaches or pine-oak woodland; or near sycamores or oaks that grown on stream banks.

4.3.6.1. Survey Results

There are five CNDDB records within the search area. The closest record, dates 2004, is located approximately 8.5 mi east of the BSA.

The Valley oak woodland, located at bridge 28C0361 over Mount Diablo creek, provides suitable habitat for this species.

4.3.6.2. Project Impacts

The project will remove 0.002 ac of Valley oak woodland at Bridge 28C0361 over Mount Diablo Creek as a result of placement of RSP. There will be no temporary impacts to Valley oak woodland as a result of this project.

4.3.6.3. Avoidance and Minimization Efforts

1. Prior to any ground-disturbing activities, the area shall be surveyed by a qualified biologist for the presence of silvery legless lizards. If silvery legless lizards are observed in the BSA, they shall be relocated outside of the work area by a qualified biologist.

2. Following completion of the new bridge, all fill slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6.

4.3.6.4. Compensatory Mitigation

No compensatory mitigation is required with avoidance and minimization efforts listed in Section 4.3.6.3.

4.3.6.5. Cumulative Effects

Impacts to silvery legless lizard habitat in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the abundance of nesting habitat available for this species in the region relative to the amount of nesting habitat in the BSA, and implementation of the avoidance and minimization measure detailed above, the project will not substantially contribute to cumulative effects for silvery legless lizard.

4.3.7. DISCUSSION OF PACIFIC POND TURTLE

The Pacific pond turtle (*Emys marmorata*) is a State species of concern; it has no federal status. The Pacific pond turtle ranges from western Washington State south to northwestern Baja California. Two subspecies occur in California: the north Pacific pond turtle (*E.m. marmorata*); and the south Pacific pond turtle (*E.m. pallida*). The BSA is within the range of intergradation between the two subspecies. The pond turtle is a highly aquatic species, found in ponds, marshes, rivers, streams, and irrigation ditches that typically have rocky or muddy bottoms and are vegetated with aquatic vegetation. Eggs are laid at upland sites, away from the water, from April through August.

4.3.7.1. Survey Results

There are 25 CNDDB records for the Pacific pond turtle in the search area. The closest record, dated 2006, is located approximately 2.5 mi northwest of Bridge 28C0091L/R.

The annual brome grassland and ruderal/ruderal grassland provides suitable upland habitat; the open water and cattail marsh provide suitable aquatic habitat for this species.

4.3.7.2. Project Impacts

Permanent and temporary impacts to upland and aquatic habitat for the Pacific pond are shown below in Tables 13 and 14.

Table 13: Permanent and Temporary Impacts to Pacific Pond Turtle Upland Habitat

Bridge No.	Annual Brome Grassland		Ruderal/Ruderal Grassland	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.005	0.080	0.00	0.00
28C0115	0.013	0.012	0.00	0.00
28C0183	0.00	0.153	0.00	0.00
28C0221	0.00	0.00	0.001	0.00
28C0222	0.00	0.00	0.00	0.016
28C0224	0.00	0.00	0.00	0.004
28C0278	0.00	0.00	0.00	0.007
28C0357	0.00	0.00	0.00	0.00
28C0361	0.00	0.00	0.008	0.006
Total	**0.018**	**0.245**	**0.009**	**0.033**

Table 14: Permanent and Temporary Impacts to Pacific Pond Turtle Aquatic Habitat

Bridge No.	Open Water		Cattail Marsh	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.00	0.00	0.00	0.00
28C0115	0.00	0.00	0.00	0.00
28C0183	0.00	0.076	0.00	0.055
28C0221	0.00	0.00	0.00	0.00
28C0222	0.00	0.00	0.00	0.00
28C0224	0.00	0.005	0.00	0.010
28C0278	0.00	0.00	0.00	0.00
28C0357	0.00	0.00	0.00	0.004
28C0361	0.00	0.00	0.00	0.00
Total	**0.00**	**0.076**	**0.00**	**0.069**

4.3.7.3. Avoidance and Minimization Efforts

1. Prior to the start of construction activities that would affect ponds, canals, or other perennial water features, a qualified biologist shall survey the subject water feature for the presence of Pacific pond turtles. If Pacific pond turtles are observed, they shall be relocated outside of the work area by a qualified biologist.

2. Worker environmental awareness training shall be conducted by a qualified biologist for all construction personnel. The training shall instruct workers about the purpose of ESA fencing and the resources being protected.

3. Measures consistent with the current Caltrans' BMP Manual (including the SWPPP and WPCP Manuals shall be implemented to minimize effects to aquatic habitats resulting from erosion, siltation, etc. during construction.

4. Following completion of construction, all graded slopes, temporary impact and/or otherwise disturbed areas shall be restored to preconstruction contours (if necessary) and revegetated with the native seed mix specified in Table 6.

4.3.7.4. Compesatory Mitigation

No mitigation is required with avoidance and minimization efforts listed in Section 4.3.7.3.

4.3.7.5. Cumulative Effects

Impacts to Pacific pond turtle in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the abundance of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and minimization measure detailed above, the project will not substantially contribute to cumulative effects for Pacific pond turtle.

4.3.8. DISCUSSION OF CALIFORNIA RED-LEGGED FROG

The California red-legged frog (*Rana draytonii*) (CRLF) is federally listed as threatened. The CRLF inhabits lowlands and foothills in or near permanent sources of water. This frog prefers ponds, creeks, or marshes with extensive shoreline vegetation. Intermittent streams provide suitable habitat if some surface water remains through the summer. Breeding generally occurs in ponds or stream pools that contain water through late summer and support dense, shrubby, or emergent vegetation such as overhanging willows intermixed with cattails. However, breeding habitat can be varied and may include sag ponds, lagoons, stock ponds, and backwaters within streams and creeks.

CRLF use upland areas and riparian vegetation for resting, feeding, dispersal, and estivation. Riparian areas can meet all of these needs; the scope of upland habitat use is not well understood. CRLF may spend considerable time in suitable upland areas during the summer dry period. They may use a variety of places for estivation, including small mammal burrows, cracks at the bottom of a dry pond, spaces under boulders, rocks, and downed trees, and agricultural features such as drains, watering troughs, and abandoned sheds. Dispersal may occur across varying topography and vegetation type, and during winter rain events CRLF may travel up to 2 mi between water sources. Use of upland and riparian areas is most likely dependent on a number of factors, such as climatic conditions, habitat suitability, and life stage.

4.3.8.1. Survey Results

The BSA is located within the current range of the CRLF and all 10 bridges provide suitable aquatic non-breeding habitat and upland estivation habitat for this species. The stream flow at nine of the bridges is too swift to provide breeding habitat for CRLF. The water at Bridge 28C0091L/R flows slow enough to provide suitable breeding habitat; however, this reach is not suitable breeding habitat due to the lack of vegetative cover. Bridge 28C0091L/R lacks the dense vegetation required for maintaining suitable shelter or water temperatures for breeding.

CRLF is well documented within the search area, with 113 documented occurrences. The two closest CNDDB records to the BSA occur approximately 1.3 miles northeast of Bridge 28C0361. The occurrences, dated 2005 and 2008, were observed on the Concord Naval Weapons Station.

The survey results for CRLF at the 10 bridges are described below:

1. **28C0091L** – *Concord Avenue over Walnut Creek* – Walnut Creek is a perennial stream which, unless in severe drought, always holds water. Although there is suitable upland and aquatic non-breeding habitat within the BSA, it is unlikely that CRLF will be present in the BSA. The BSA is located just above the tidal influence and, during high tide; some brackish water may enter the BSA, rendering it unsuitable for CRLF. In addition, there are no documented records or observations of CRLF in Walnut Creek.

2. **28C0091R** – *Concord Avenue over Walnut Creek* – the CRLF habitat at this bridge is incorporated into the BSA for bridge 28C0091L above, as these two bridges constitute both directions of traffic along Concord Avenue over Walnut Creek.

3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – Galindo Creek is an intermittent creek that provides suitable habitat for CRLF. Galindo Creek flows from Mount Diablo State Park, located southeast of the BSA. CRLF is well documented in and around Mount Diablo State Park and it is likely that CRLF may migrate into the BSA. Galindo Creek provides suitable aquatic non-breeding

habitat; the black willow thicket and annual brome grassland provides suitable upland habitat for CRLF.

4. **28C0183** – *Willow Pass Road over Walnut Creek* – With the exception of developed areas, the majority of the BSA provides suitable aquatic non-breeding habitat for CRLF. However, as stated above, there is no history of CRLF occurring in Walnut Creek and the BSA is in a highly developed area, decreasing the likelihood that the species would occur in the BSA.

5. **28C0221** – *Court Lane over Galindo Creek* – As stated above, Galindo Creek provides suitable habitat for CRLF and flows from Mount Diablo, which has a high population of CRLF. The ruderal/ruderal grassland habitats provide suitable aquatic non-breeding habitat; the landscaped vegetation provides suitable upland habitat. CRLF may occur in the BSA.

6. **28C0222** – *St. Francis Drive over Galindo Creek* – As stated above, Galindo Creek provides suitable habitat for CRLF. The ruderal/ruderal grassland habitat provides suitable aquatic non-breeding habitat; the landscaped vegetation provides suitable upland habitat. CRLF could occur in the BSA.

7. **28C0224** – *Whitman Road over SDM Channel* – There are no known occurrences of CRLF in the SDM Channel and the BSA is located in a highly urban area. The BSA provides suitable aquatic non-breeding habitat for CRLF in the open water and cattail marsh; the annual brome grasslands provides suitable upland habitat. It is unlikely that CRLF would occur in the BSA.

8. **28C0278** – *Claudia Drive over Holbrook Channel* – There are no known occurrences or history of CRLF in the Holbrook Channel and the BSA is located in a highly urban area. The BSA provides suitable aquatic non-breeding habitat for CRLF in the ruderal/ruderal grassland habitats. The landscaped vegetation provides suitable upland habitat. It is unlikely that CRLF would occur in the BSA.

9. **28C0357** – *San Miguel Road over Pine Creek* – Pine Creek originates in Mount Diablo State Park; CLRF are known to occur in the State Park and Pine Creek. The BSA provides suitable aquatic non-breeding habitat in the cattail marsh; the annual brome grassland provides suitable upland habitat for CRLF. CRLF may occur in the BSA.

10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – Mount Diablo Creek flows from Mount Diablo State Park through the Concord Naval Weapons Station and into Suisun Bay. CRLF are well documented upstream, at Mount Diablo State Park, and downstream, at the Concord Naval Weapons Station, of the BSA. The open water in the BSA provides suitable aquatic non-breeding habitat for CRLF; the ruderal/ruderal grasslands provide suitable upland habitat. CRLF may occur in the BSA.

4.3.8.2. Project Impacts

The proposed project will result in permanent impacts in 0.21 ac of aquatic non-breeding habitat for CRLF and 0.06 ac of upland habitat. The project will result in 0.60 ac of

temporary impacts to aquatic non-breeding habitat for CRLF and 0.14 ac of upland habitat. Permanent impacts are a result of install, repairing, or rehabilitating RSP; temporary impacts to CRLF habitat are a result of project staging, access, and other temporary construction disturbances. Table 15 shows the permanent and temporary impacts to CRLF habitat at each bridge in the BSA. Impacts to CRLF habitat are shown in Figures 6a-6c.

Table 15: Permanent and Temporary Impacts to CRLF Habitat

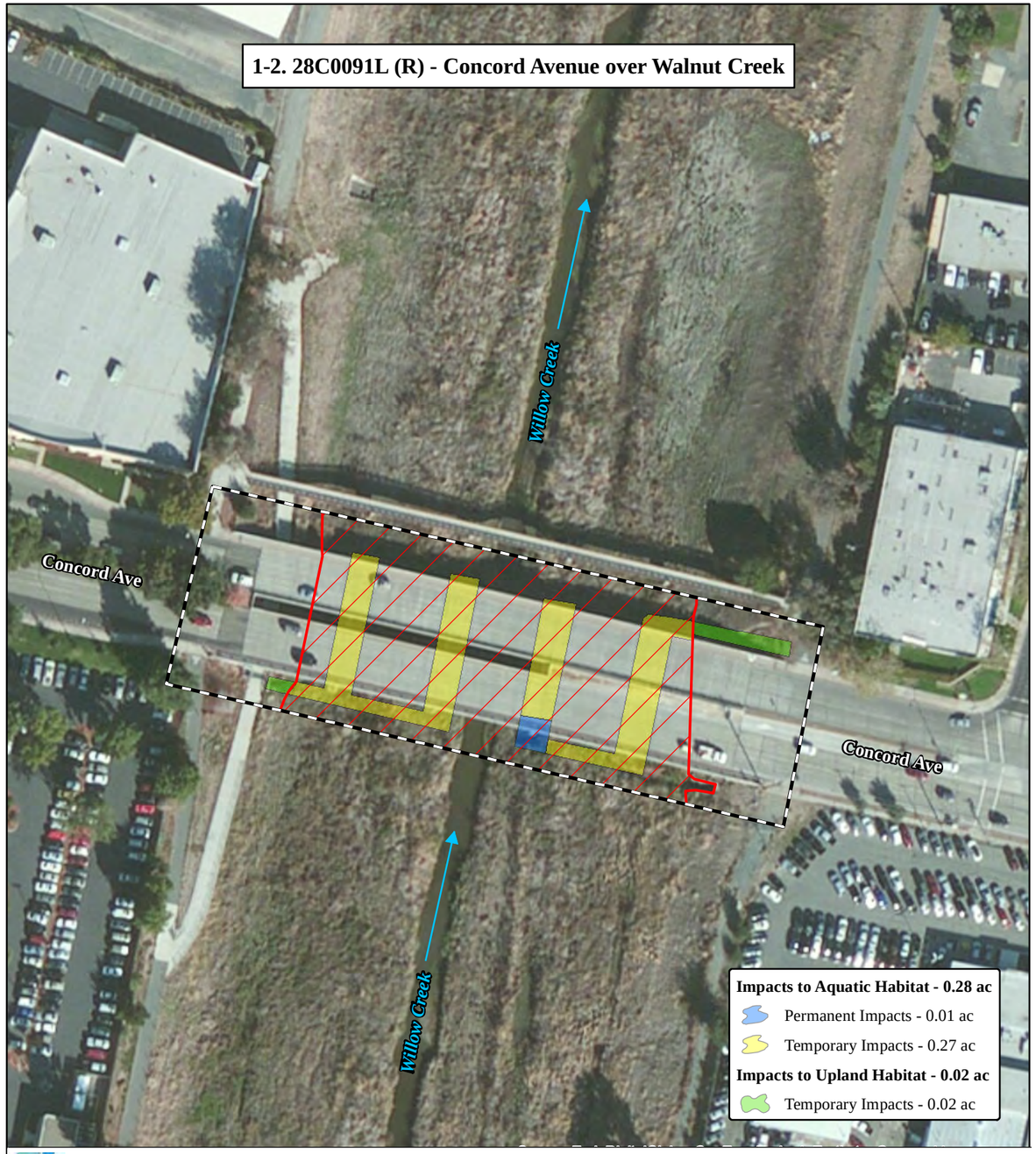
Bridge No.	Aquatic Non-Breeding Habitat		Upland Habitat	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.01	0.27	0.00	0.02
28C0115	0.00	0.00	0.03	0.03
28C0183	0.19	0.23	0.00	0.04
28C0221	0.01	0.00	0.02	0.00
28C0222	0.00	0.04	0.00	0.01
28C0224	0.00	0.02	0.00	0.01
28C0278	0.00	0.02	0.00	0.02
28C0357	0.00	0.02	0.00	0.01
28C0361	0.00	0.00	0.01	0.00
Total	**0.21**	**0.60**	**0.06**	**0.14**

4.3.8.3. Avoidance and Minimization Efforts

1. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of CRLF.

2. Ground disturbance will not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work.

3. A USFWS-approved biologist will survey the project site 48 hours before the onset of work activities. If any life stage of the CRLF is found and these individuals likely to be or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The USFWS-approved biologist will relocate the CRLF the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. The Biologist will coordinate with the USFWS on the relocation site prior to the capture of any CRLF. The USFWS-approved biologist will maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs [digital preferred]) to assist him or her in determining whether translocated animals are returning to the original point of capture.



Caltrans

LEGEND

Biological Study Area

California Red-Legged Frog Aquatic Habitat

N

0 50 100
FEET

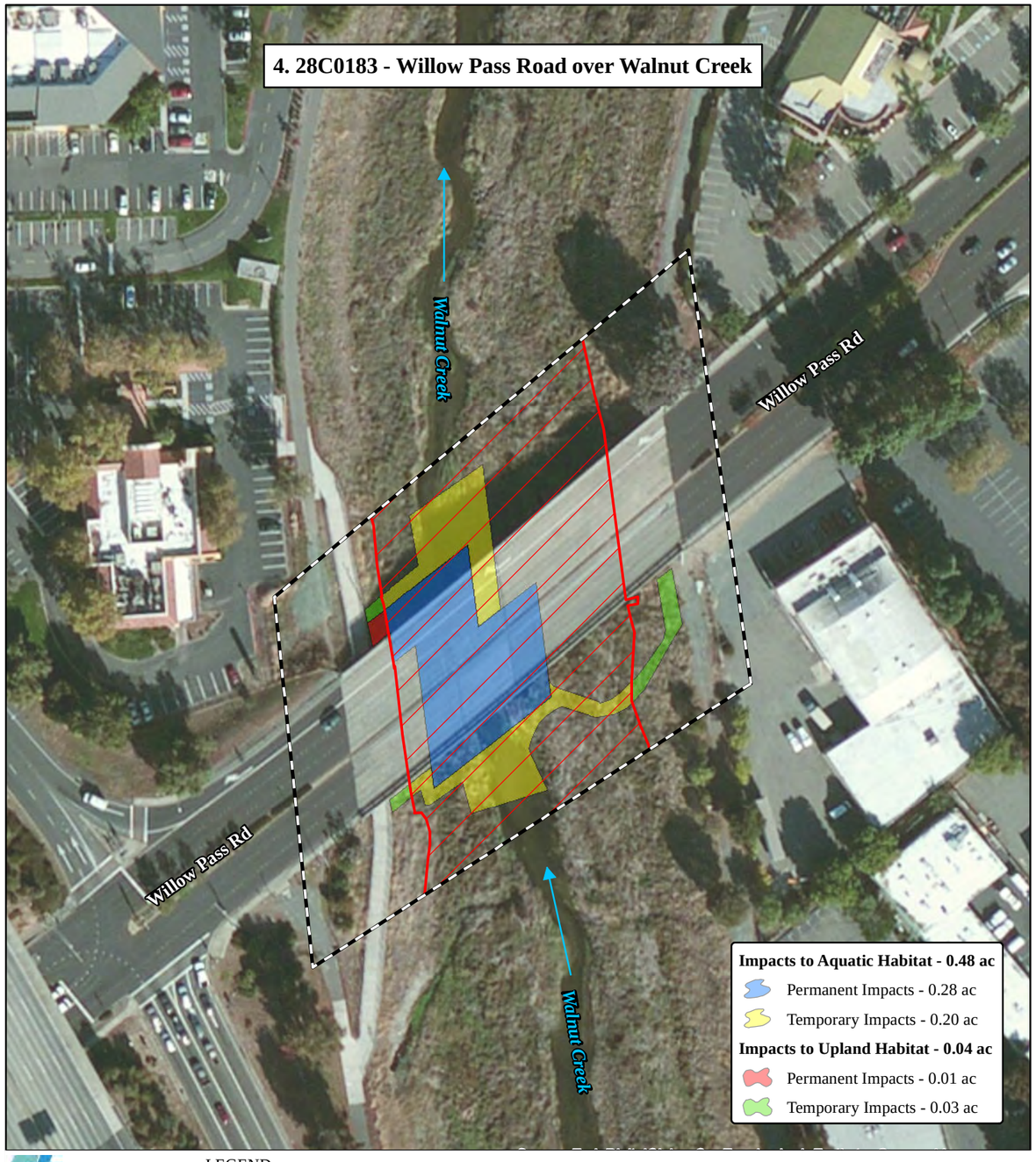
SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

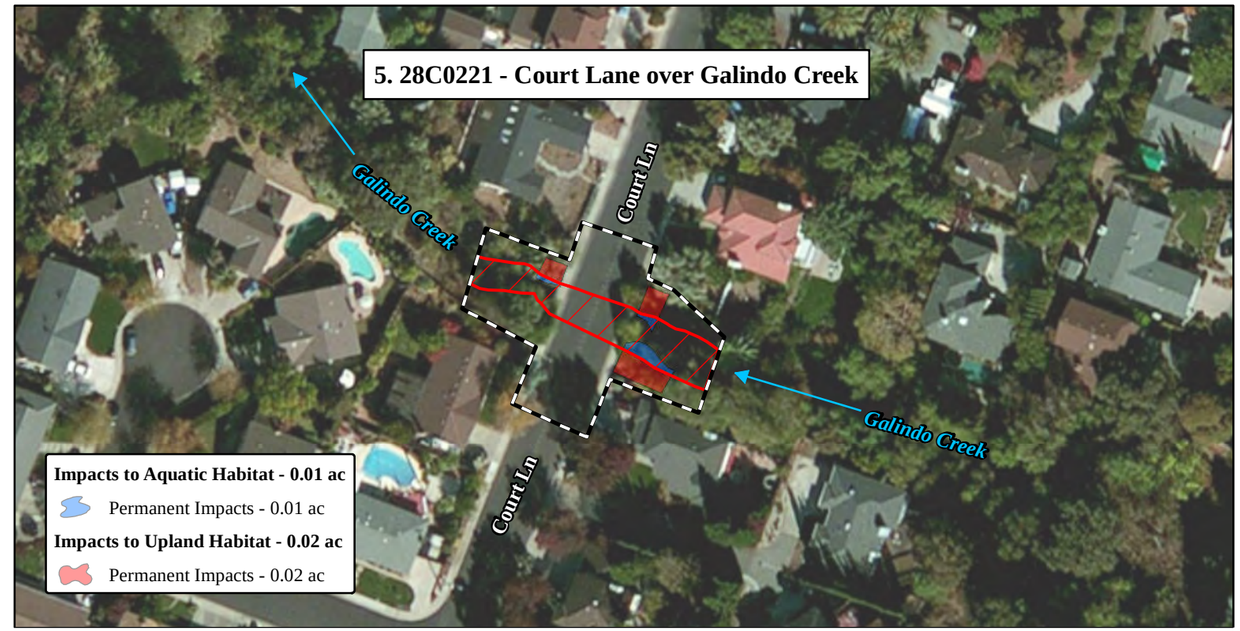
I:\Aem1101\GIS\Nes-fig6a_crlf_imps.mxd (10/30/2014)

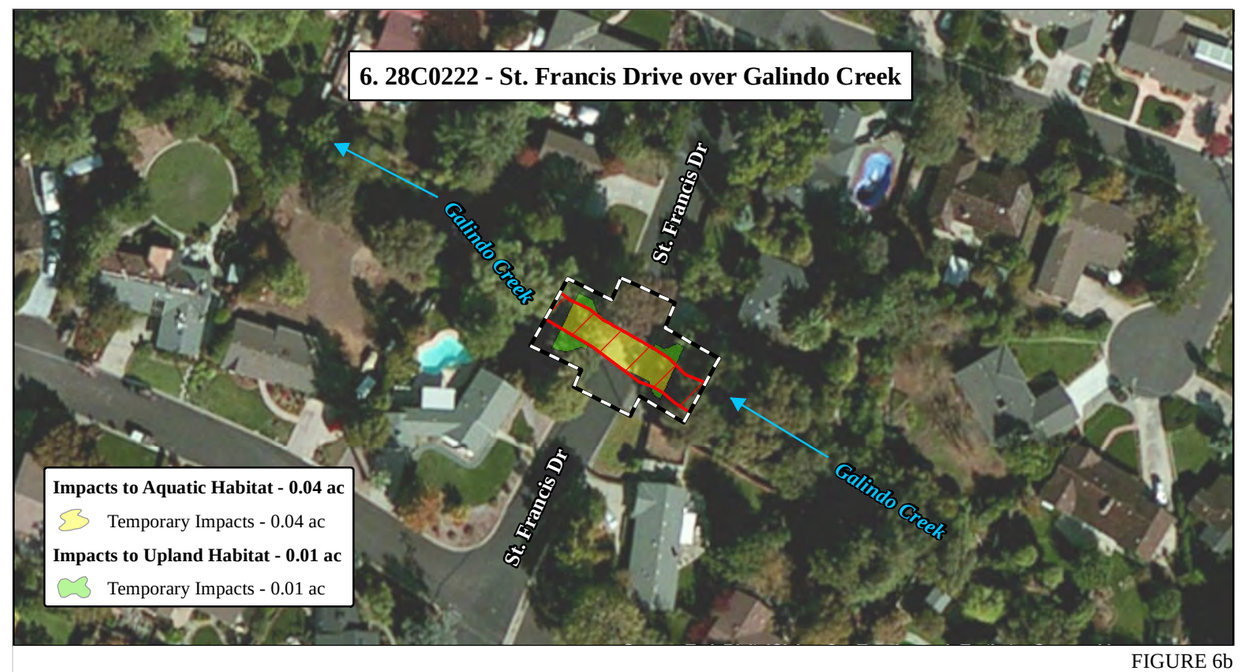
FIGURE 6a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Impacts to California Red-Legged Frog Habitat







Caltrans

LEGEND

Biological Study Area

California Red-Legged Frog Aquatic Habitat

N

0 50 100
FEET

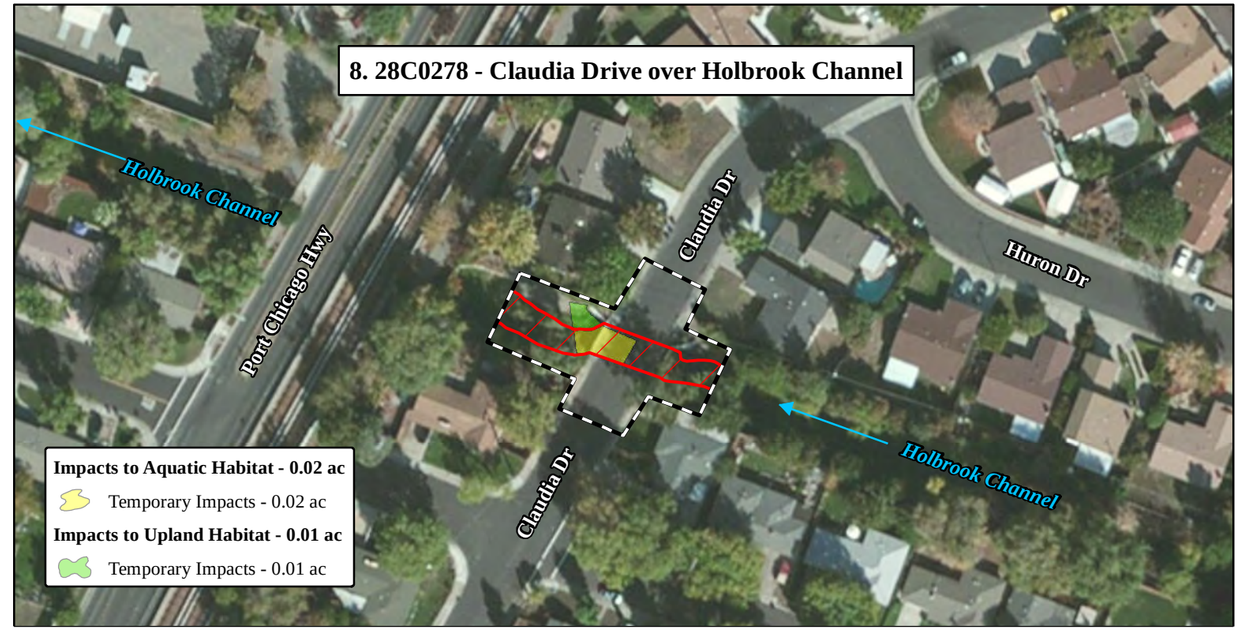
SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

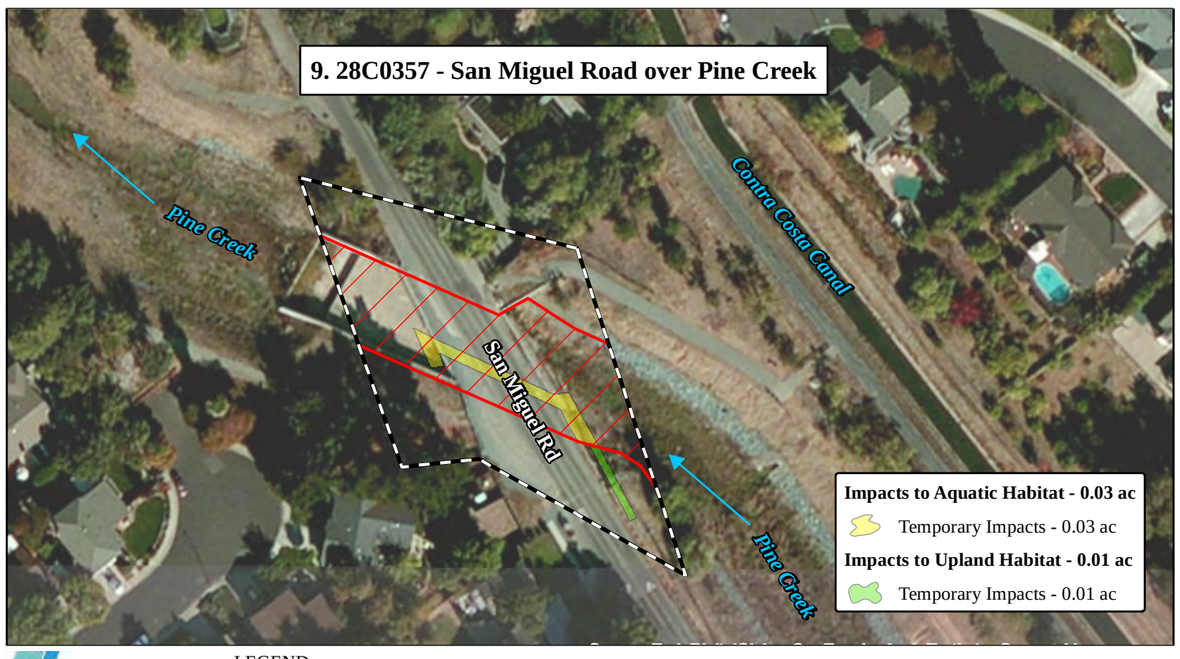
I:\Aem1101\GIS\Nes-fig6b_crlf_imps.mxd (10/30/2014)

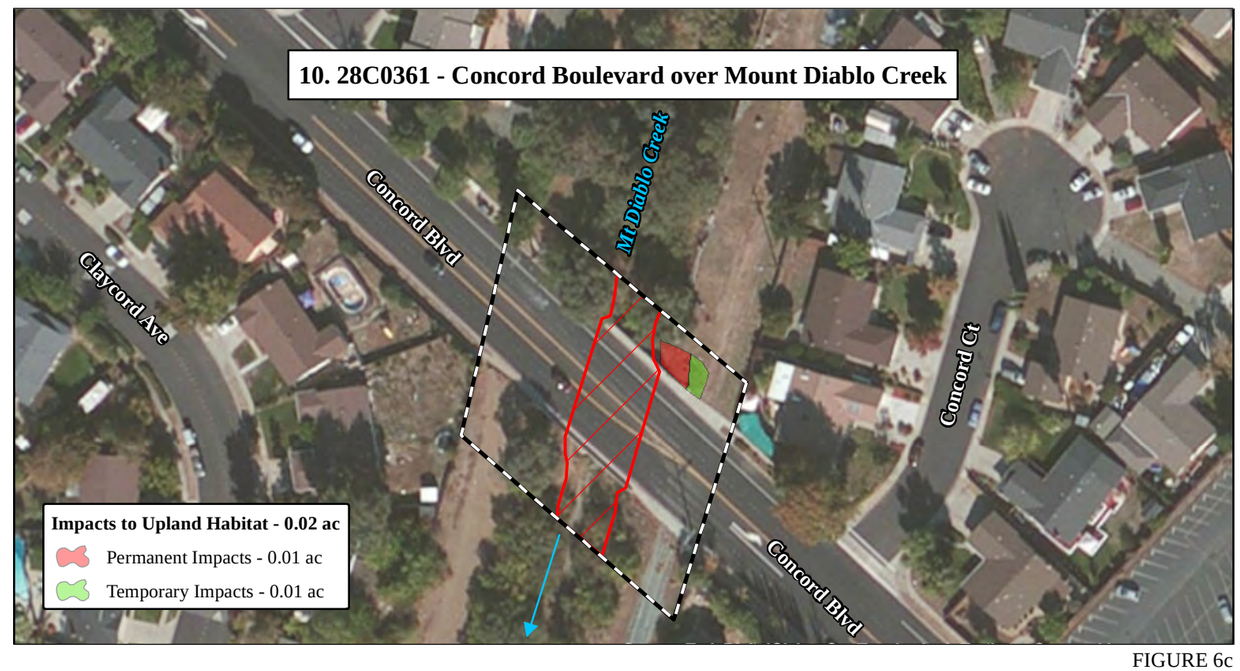
FIGURE 6b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Impacts to California Red-Legged Frog Habitat







Caltrans

LEGEND

Biological Study Area

California Red-Legged Frog Aquatic Habitat

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

I:\Aem1101\GIS\Nes-fig6c_crlf_imps.mxd (10/30/2014)

FIGURE 6c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Impacts to California Red-Legged Frog Habitat

4. Before any activities begin on a project, a USFWS-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the CRLF and its habitat, the specific measures that are being implemented to conserve the CRLF for the current project, and the boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

5. A USFWS-approved biologist will be present at the work site until all CRLF have been relocated out of harm's way, workers have been instructed, and disturbance of habitat has been completed. After this time, the biologist will designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist will ensure that this monitor receives the training outlined in measure 4 and in the identification of CRLF. If the monitor or the USFWS-approved biologist recommends that work be stopped because CRLF would be affected in a manner not anticipated by the City and the USFWS during review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the effect immediately or require that all actions, which are causing these effects, be halted. If work is stopped, the USFWS will be notified as soon as is reasonably possible.

6. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 ft from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Contractor shall provide the City with a plan for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

8. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas temporarily disturbed by activities associated with the project, unless the USFWS and the City determine that it is not feasible or modification of original contours would benefit the CRLF.

9. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. ESAs will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to CRLF habitat; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

10. Work will occur during the dry period in the creeks and be limited to June 15 to October 15.

11. To control sedimentation during and after project implementation, The City will implement BMPs outlined in any authorizations or permits, issued under the authorities of the CWA that it receives for the specific project. If BMPs are ineffective, the City will attempt to remedy the situation immediately, in consultation with the USFWS.

12. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inches to prevent CRLF from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.

13. Unless approved by the USFWS, water will not be impounded in a manner that may attract CRLF.

14. A USFWS-approved biologist will permanently remove any individuals of exotic species such as bullfrogs, signal and red swamp crayfish (*Pacifasticus leniusculus; Procambarus clarkii*), and centrarchid fishes from the project area, to the maximum extent possible. The USFWS-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Game Code.

15. To ensure that diseases are not conveyed between work sites by the USFWS-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.

16. Project sites will be re-vegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area (Table 6). Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or practical.

17. The City will not use herbicides as the primary method used to control invasive, exotic plants. However, if the City determines the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the CRLF:

    a. The City will not use herbicides during the breeding season for the CRLF.

    b. The City will conduct surveys for the CRLF immediately prior to the start of any herbicide use. If found, CRLF will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur.

    c. Giant reed and other invasive plants will be cut and hauled out by hand and the painted with glyphosate or glyphosate-based products, such as Aquamaster® or Rodeo®.

d. Licensed and experienced City staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.

e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.

f. Herbicides will not be applied on or near open water surfaces (no closer than 60 ft from open water).

g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 mi per hour.

h. No herbicides will be applied within 24 hours of forecasted rain.

i. Application of all herbicides will be done by a qualified City staff or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 ft from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. The City will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the City will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Additional minimization measures include:

18. During placement of RSP, native topsoil from the channel will be incorporated within the RSP to provide a seeding and planting medium. Areas of RSP above the OHWM will be revegetated with the seed mix specified in Table 6.

4.3.8.4. Compensatory Mitigation

Permanent impacts to CRLF habitat shall be compensated for at a 3:1 ratio and temporary impacts to CRLF habitat shall be compensated for at a 1.1:1 ratio. Mitigation shall be accomplished by purchasing credits at the Mountain House Conservation Bank or other service-approved bank or by other methods contingent upon approval by USFWS.

4.3.8.5. Cumulative Effects

Impacts to CRLF in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the abundance of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and minimization measure detailed above, the project will not substantially contribute to cumulative effects for CRLF.

4.3.9. DISCUSSION OF CENTRAL CALIFORNIA COAST STEELHEAD

The Central California Coast steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) is a federally threatened species. The range of the CCC steelhead DPS extends from the Russian River south to Aptos Creek, and includes the drainages of San Francisco, San Pablo, and Suisun Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. Tributary streams to Suisun Marsh including Suisun Creek, Green Valley Creek, and an unnamed tributary to Cordelia Slough, excluding the Sacramento-San Joaquin River Basin, as well as two artificial propagation programs: the Don Clausen Fish Hatchery, and Kingfisher Flat Hatchery/ Scott Creek (Monterey Bay Salmon and Trout Project) steelhead hatchery programs. CCC steelhead exhibit both winter and summer runs within their range.

4.3.9.1. Survey Results

Four bridges provide suitable migration habitat for CCC steelhead; Bridges 28C0091L/R, 28C0183, 28C0224, and 28C0361. Potential suitable spawning habitat is located at the Bridge 28C0361. Survey results for the four bridges are discussed below:

1. **29C0091L/R** – *Concord Avenue over Walnut Creek* – Walnut Creek is part of the Walnut Creek Watershed which originates on the west side of Mount Diablo and flows into the Suisun Bay, approximately 5 mi downstream of the BSA. The BSA provides suitable migration habitat for CCC steelhead. This bridge does not provide suitable spawning habitat due to the lack of high vegetation and open habitat; resulting in high water temperatures.

2. **28C0183** – *Willow Pass Road over Walnut Creek* – Walnut Creek is part of the Walnut Creek watershed and flows into Suisun Bay downstream of the BSA. The BSA provides suitable migration habitat for CCC steelhead but no spawning habitat due to lack of high vegetation and open habitat; resulting in high water temperatures.

3. **28C0224** – *Whitman Road over SDM Channel* – SDM Channel is tributary to Walnut Creek and, at this location, provides suitable migration habitat for CCC steelhead. Due to its concrete linings, this bridge does not provide suitable spawning habitat. In addition, the lack of vegetation and large amount of open water will result in water temperatures that are too high for spawning.

4. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – Mount Diablo Creek originates in Mount Diablo State Park and flows through agricultural lands and the City of Concord before flowing into Suisun Bay. Mount Diablo Creek provides suitable spawning and migrating habitat for CCC steelhead. The gravel creek bed provides suitable spawning sites and the vegetation around the bridge provides cover needed by CCC steelhead.

There is no critical habitat for CCC steelhead in the BSA. The closest critical habitat is located approximately 13 mi east, in San Pablo Bay.

Per consultation with NMFS, the remaining six bridges occur in waterways that do not support populations of CCC steelhead. (See agency coordination in Appendix D).

4.3.9.2. Project Impacts

Although potentially suitable habitat is present within the BSA, with the implementation of avoidance and minimization efforts listed in Section 4.3.9.3., the proposed project will have “no effect” to CCC steelhead. This was determined through technical assistance with NMFS. See agency consultation in Appendix D.

While marginally suitable habitat is present in the BSA, all work will be completed during the summer months when CCC steelhead are not expected to be present. Furthermore, with implementation of the avoidance and minimization efforts listed below in Section 4.3.9.4., the project will have “no effect” to this species.

4.3.9.3. Avoidance and Minimization Efforts

1. All in-water work associated with the proposed project shall be conducted between June 1 and October 31, which is within the seasonal work window recommended by NMFS to eliminate effects to CCC steelhead.

2. Brightly colored ESA fencing shall be placed along the limits of work to prevent unnecessary encroachment into the BSAs in Walnut Creek, Mount Diablo Creek and SDM Channel. Fencing shall be maintained in good condition for the duration of construction activities.

3. Prior to any work in the live channel, a water diversion shall be installed around the bridges at Walnut Creek, Mount Diablo Creek, and SDM Channel in order to enclose the construction area and reduce sedimentation during work in the channel. The water diversion will consist of corrugated metal pipe culverts, sheet pile cofferdam, K-rail with visquine, or an equivalent method. Dewatering the work area will minimize the potential water quality impacts (e.g., siltation) and ensure that no salmonids are directly affected by project construction activities (i.e., no work will be conducted in flowing water).

4. During removal of any part of the existing bridge, a tarp or other approved method shall be used below the bridge to prevent debris from falling into Walnut Creek, Mount Diablo Creek, or SDM Channel. The tarp will be left in place until removal is complete.

5. Measures consistent with the current Caltrans' Construction Site BMPs Manual (including the Storm Water Pollution Prevention Plan [SWPPP] and Water Pollution Control Program [WPCP] Manuals [http://www.dot.ca.gov/hq/construc/Construction_Site_BMPs.pdf]) shall be implemented to minimize effects to steelhead during construction.

6. A SWPPP will be prepared by the contractor in accordance with typical provisions associated with a Regional General Permit for Construction Activities (on file with the Central Valley RWQCB). The SWPPP will contain a Spill Response Plan with instructions and procedures for reporting spills, the use and location of spill containment equipment, and the use and location of spill collection materials. Implementation of the SWPPP will minimize effects to salmonids and their habitat from potential spills associated with construction activities.

7. Any emergent or submergent aquatic vegetation shall be retained. Other vegetation shall be retained as practical within the constraints of the proposed project. Where vegetation removal is necessary, rapidly sprouting plants, such as willows, shall be cut off at the ground line and the root systems left intact.

4.3.9.4. Compensatory Mitigation

No compensatory mitigation is required with implementation of avoidance and minimization efforts listed in Section 4.2.9.3.

4.3.9.5. Cumulative Effects

Impacts to CCC steelhead in the general vicinity of the project likely will occur through habitat loss during public works projects similar in scope to the subject project. Other projects in the region with similar impacts will also be required to minimize and/or mitigate those impacts. Considering the abundance of habitat available for this species in the region relative to the amount of habitat in the BSA, and implementation of the avoidance and minimization measure detailed above, the project will not substantially contribute to cumulative effects for CCC steelhead.

Chapter 5 – Conclusions and Regulatory Determinations

5.1 Federal Endangered Species Act Consultation Summary

One federally listed species under jurisdiction of the USFWS, CRLF, and one species listed under NMFS, CCC steelhead, could occur in the BSA.

The proposed project may affect, and is likely to adversely affect, CRLF, a species listed as threatened under FESA.

Caltrans will initiate formal consultation with USFWS for this species pursuant to Section 7 of FESA. It is anticipated that USFWS will concur with the above determination and, with the incorporation of proposed avoidance and minimization efforts, the effects to CRLF would be minimized.

With implementation of avoidance and minimization efforts listed in Section 4.3.9.3., the project will have “no effect” on CCC steelhead. No Section 7 consultation with NMFS is required.

5.2 Essential Fish Habitat Consultation Summary

The aquatic resources in the BSA are not designated as Essential Fish Habitat.

5.3 California Endangered Species Act Consultation Summary

The proposed project will not affect any species listed as threatened or endangered under CESA. Therefore, no CESA consultation is required.

5.4 Wetlands and Other Waters Coordination Summary

5.4.1. ARMY CORPS OF ENGINEERS

Waters of the U.S. within the BSA are limited to the reach of Walnut Creek, Galindo Creek, Holbrook Channel, SDM Channel, Mount Diablo Creek, and Pine Creek (Figure 5). Wetlands within the BSA, totaling 0.36 ac, are located at 8 of the bridge locations (Table 4). Non-wetland waters, totaling 2.89 ac, are located at all 10 bridges, generally consisting of the water beneath the existing bridge structures.

The proposed project will result in both permanent and temporary impacts to waters of the U.S., shown in Table 16 below.

Table 16: Permanent and Temporary Impacts to Waters of the U.S.

Bridge No.	Waters of the U.S.			
	Wetlands		Non-Wetland Waters	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.00	0.00	0.013	0.271
28C0115	0.00	0.00	0.001	0.00
28C0183	0.00	0.058	0.193	0.226
28C0221	0.001	0.00	0.008	0.00
28C0222	0.00	0.00	0.00	0.037
28C0224	0.00	0.018	0.00	0.003
28C0278	0.00	0.001	0.00	0.015
28C0357	0.00	0.0001	0.00	0.029
28C0361	0.00	0.00	0.00	0.00
Total	**0.001**	**0.0771**	**0.215**	**0.581**

The Waters of the U.S. within the BSA that will be affected by the project are regulated by the ACOE under Section 404 of the CWA. It is expected that proposed discharge into the creeks during construction can be authorized by the ACOE using Nationwide Permit (NWP) 14 – Linear Transportation Projects. In accordance with the conditions of the NWP 14, a Preconstruction Notification must be submitted to the ACOE for verification that the proposed discharges comply with the conditions of the subject NWP.

5.4.2. REGIONAL WATER QUALITY CONTROL BOARD

Discharges into Waters of the U.S. under Section 404 of the CWA also require a Water Quality Certification from the RWQCB, pursuant to Section 401 of the CWA. The RWQCB may opt to waive the water quality certification and instead issue water discharge requirements pursuant to their authority under the PCWQCA.

5.4.3. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Jurisdictional waters in the BSA, totaling 3.53 ac, include the live channels of Walnut Creek, Galindo Creek, Pine Creek, Mount Diablo Creek, Holbrook Creek, and the SDM Channel. Impacts to these resources will require a Lake and Streambed Alteration Agreement from CDFW, under Section 1600-1606 of the California Fish and Game Code.

Table 17: Permanent and Temporary Impacts to CDFW Waters

Bridge No.	CDFW Waters	
	Permanent	Temporary
28C0091L	0.013	0.271
28C0091R		
28C0115	0.014	0.013
28C0183	0.193	0.284
28C0221	0.009	0.00
28C0222	0.00	0.037
28C0224	0.00	0.021
28C0278	0.00	0.016
28C0357	0.00	0.029
28C0361	0.002	0.00
Total	**0.231**	**0.671**

5.5 Executive Order 11990 – Protection of Wetlands

The project will result in minor permanent impacts, totaling 0.001 ac, and temporary impacts, totaling 0.091 ac, to wetlands. The project has been designed to avoid impacts, were feasible. Additionally, following construction, at least 0.001 ac of wetland vegetation is expected to naturally reestablish within the RSP that has been backfilled with native soil. The measures included in Section 4.1.3.3., will also minimize impacts to wetlands during and after construction.

Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.

5.6 Invasive Species

To avoid the introduction of invasive species into the BSA during project construction, contract specifications shall include, at a minimum, the following measures.

1. All earthmoving equipment to be used during project construction shall be cleaned thoroughly before arrive on the project site.

2. All seeding equipment (i.e. hydroseed trucks) shall be thoroughly rinsed at least three times prior to beginning seeding work.

3. To avoid spreading any non-native invasive species already existing on-site, to off-site areas, all equipment shall be thoroughly cleaned before leaving the site.

5.7 Migratory Bird Treaty Act and California Fish and Game Code (Breeding Birds)

Disturbance of migratory birds during their nesting season (February 1 to August 31) could result in “take” which is prohibited under the MBTA and Section 3513 of the California Fish and Game Code. Fish and Game Code (Section 3503) also prohibits take or destruction of bird nests or eggs.

The following seasonal work restrictions will be implemented during construction to minimize the potential for take of nesting birds:

1. If work must begin during the nesting season (February 1 to August 31), a qualified biologist shall survey all suitable nesting habitat in the BSA for presence of nesting birds. This survey shall occur no more than 10 days prior to the start of construction. If no nesting activity is observed, work may proceed as planned. If an active nest is discovered, a qualified biologist shall evaluate the potential for the proposed project to disturb nesting activities. The evaluation criteria shall include, but are not limited to, the location/orientation of the nest in the nest tree, the distance of the nest from the BSA, the line of sight between the nest and the BSA, and the feasibility of establishing no-disturbance buffers.

2. Additionally, CDFW shall be contacted to review the evaluation and determine if the project can proceed without adversely affecting nesting activities.

3. If work is allowed to proceed, a qualified biologist shall be on-site weekly during construction activities to monitor nesting activity. The biologist shall have the authority to stop work if it is determined the project is adversely affecting nesting activities.

4. If swallows, other non-vegetative nesting birds, or remains of mud nests, are observed on a bridge, a qualified company or qualified professional shall install exclusion netting (or equivalent material) to the underside of the existing bridge to prevent nesting on the bridge. Installation of exclusion netting must be installed prior to the start of nesting season (Februray 1 to August 31). Exclusion structures shall be left in place and maintained until the existing bridge is removed, or September 1, whichever is earlier.

Chapter 6 – References

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Appendix A – Project Design

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	LOC		1	23

CITY OF CONCORD
DEPARTMENT OF PUBLIC WORK & ENGINEERING

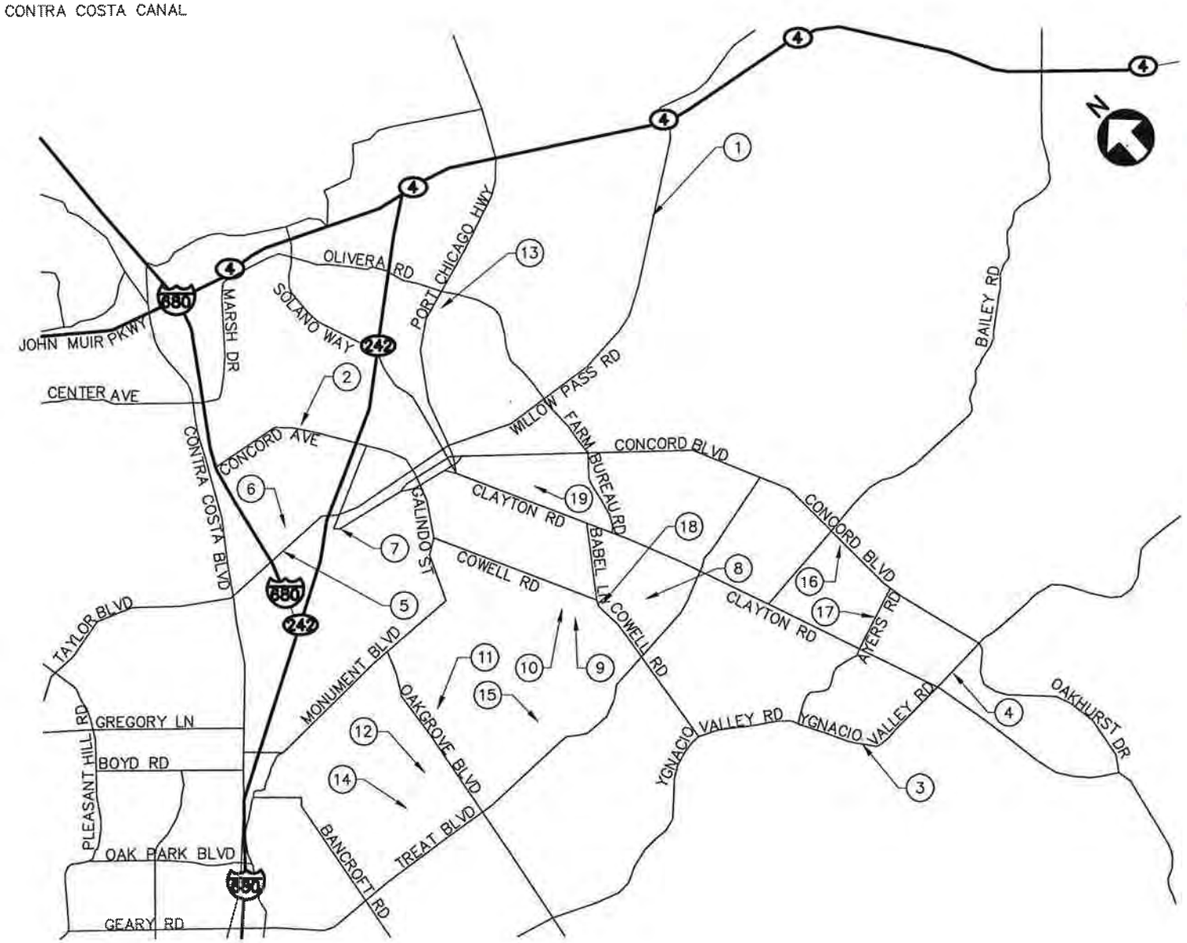
CITYWIDE BRIDGE REPAIR PROGRAM

INDEX OF SHEETS

SHEET NO.	BRIDGE NO.	SHEET TITLE
1		TITLE SHEET
2	28C0034	WILLOW PASS RD BRIDGE OVER MOUNT DIABLO CREEK
3	28C0091L	CONCORD AVE BRIDGE OVER WALNUT CREEK–LEFT
4	28C0091R	CONCORD AVE BRIDGE OVER WALNUT CREEK–RIGHT
5	28C0115	YGNACIO VALLEY RD BRIDGE OVER GALINDO CREEK
6	28C0116	KIRKER PASS RD BRIDGE OVER MOUNT DIABLO CREEK
7	28C0183	WILLOW PASS RD BRIDGE OVER WALNUT CREEK
8	28C0183	WILLOW PASS RD BRIDGE OVER WALNUT CREEK--SCOUR
9	28C0189L	DIAMOND BLVD BRIDGE OVER WALNUT CREEK–LEFT
10	28C0189R	DIAMOND BLVD BRIDGE OVER WALNUT CREEK–RIGHT
11	28C0198	CLAYTON RD BRIDGE OVER PINE CREEK
12	28C0220	CAPE COD WAY BRIDGE OVER GALINDO CREEK
13	28C0221	COURT LANE BRIDGE OVER GALINDO CREEK
14	28C0222	ST FRANCIS DR BRIDGE OVER GALINDO CREEK
15	28C0224	WHITMAN RD BRIDGE OVER SDM CHANNEL
16	28C0276	RISDON ST BRIDGE OVER SDM CHANNEL
17	28C0278	CLAUDIA DRIVE BRIDGE OVER HOLBROOK CHANNEL
18	28C0353	OAK GROVE SCHOOL POC
19	28C0357	SAN MIGUEL RD BRIDGE OVER PINE CREEK
20	28C0361	CONCORD BLVD BRIDGE OVER MOUNT DIABLO CREEK
21	28C0362	AYERS RD BRIDGE OVER MOUNT DIABLO CREEK
22	28C0427	COWELL RD BRIDGE OVER GALINDO CREEK
23	28C0436	WALNUT AVE BRIDGE OVER CONTRA COSTA CANAL

STRUCTURE LIST

ID NO.	BRIDGE NO.
1	28C0034
2	28C0091L/R
3	28C0115
4	28C0116
5	28C0183/SCOUR
6	28C0189L/R
7	28C0198
8	28C0220
9	28C0221
10	28C0222
11	28C0224
12	28C0276
13	28C0278
14	28C0353
15	28C0357
16	28C0361
17	28C0362
18	28C0427
19	28C0436



VICINITY MAP
NO SCALE

LOCATION MAP

SUMMARY
THIS SET OF PLANS CONTAINS BRIEF DESCRIPTIONS OF HOW WORK IS EXPECTED TO BE ACCOMPLISHED FOR BOTH WORK ON DECK AND BELOW DECK, INCLUDING MOBILIZATION & LAYDOWN AREAS, ACCESS POINTS AND ROUTES TRAVELED FOR WORK BELOW BRIDGE

BOB FISH, PE, SE (AECOM PROJECT MANAGER)
12-02-11

NOT FOR CONSTRUCTION

PROJECT ENGINEER — DATE 05/20/11
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — ROBERT C. FISH — No. C39540 — Exp. 12/31/2011 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

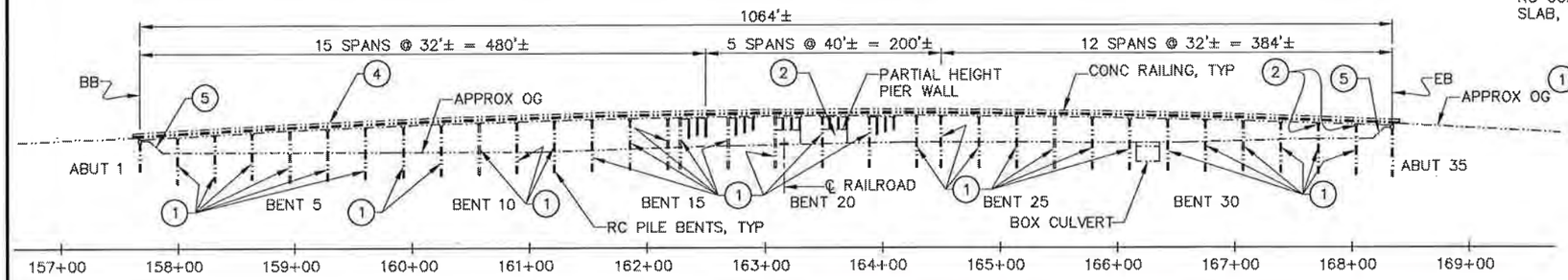
CONTRACT NO. 2060

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

DATE SIGNED	LICENSE EXP DATE	REGISTRATION NO.	CITY REVIEW BY	CONSULTANT DESIGN ENGINEER
	12/31/2011	C54151	DANEA S. GEMMELL	ROBERT C. FISH

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

LAST REVISION 00-00-00 — DATE PLOTTED => Jun 09, 2011 — TIME PLOTTED => 1:40pm



ELEVATION

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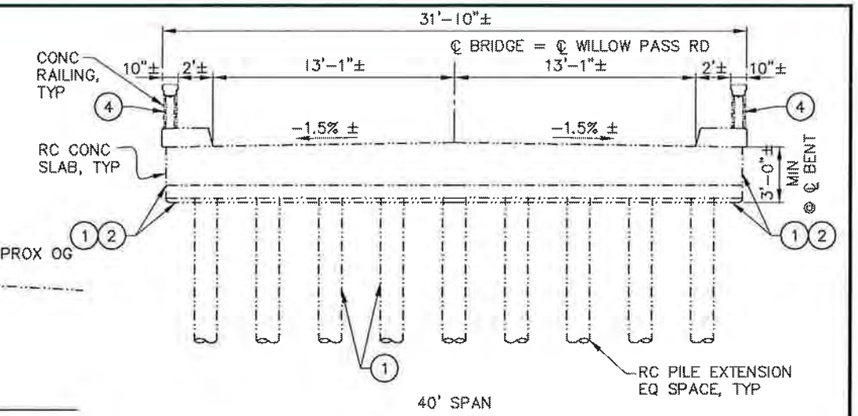


TYPICAL SECTION

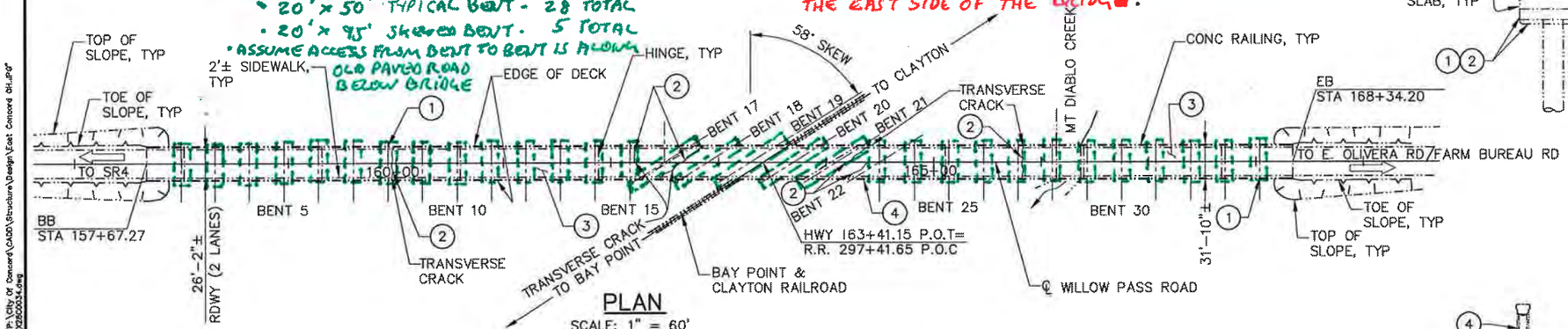
SCALE: ¼" = 1'-0"

2. (CONTINUED)
- MOST WORK UNDER THE BRIDGE WILL BE ACCOMPLISHED FROM SMALL LIFT VEHICLES, FOOT TRAFFIC W/ EXTENSION LADDERS, OR SCAFFOLDING.

1. WORK ON DECK: ACCOMPLISHED BY LANE CLOSURE (ONE AT A TIME)
- CONTRACTOR WILL MOBILIZE & LOCATE EQUIPMENT WITHIN CLOSED LANE

2. WORK BELOW DECK: ACCESS THROUGH THE NAVAL PROPERTY
- THERE ARE WIDENED AREAS OF PAVEMENT/GRAVEL ALONG THE ACCESS ROADS ON BOTH SIDES OF MT. DIABLO CREEK TO SERVE AS STAGING AREAS
- THERE IS ALSO A BRIDGE @ GROUND LEVEL OVER THE SMALL MAIN CREEK CHANNEL FOR AN ACCESS RD. PARALLEL TO THE EAST SIDE OF THE BRIDGE.

- INDICATES ASSUMED FOOT TRAFFIC AROUND EACH BENT.
- ASSUME 10' ON EACH SIDE OF BENT PILE EXTENSIONS
  - 20' x 50' TYPICAL BENT - 28 TOTAL
  - 20' x 95' SKEWED BENT - 5 TOTAL
- ASSUME ACCESS FROM BENT TO BENT IS ALLOWED



PLAN

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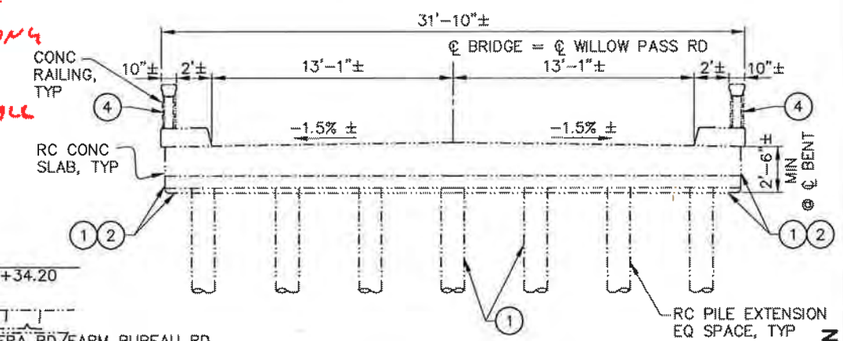

TYPICAL SECTION

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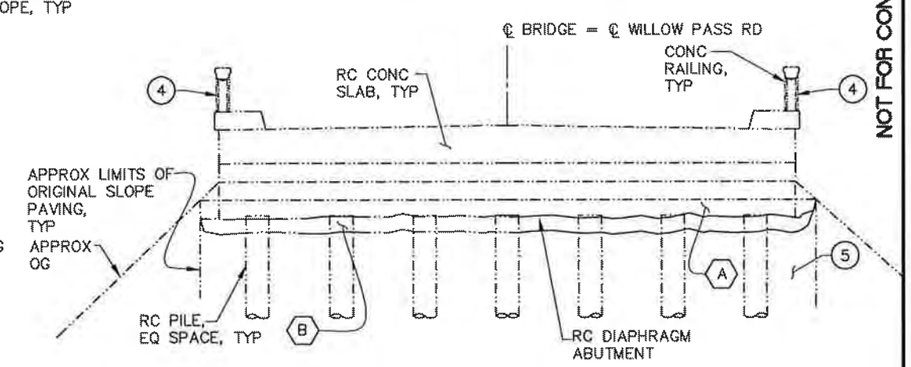

ABUT 1 SHOWN, ABUT 35 SIMILAR AND OPPOSITE

ABUTMENT 1

SCALE: ¼" = 1'-0"

NOT FOR CONSTRUCTION

REPAIR LEGEND:

1. SPALL AND ROCK POCKET REPAIRS
2. EPOXY INJECT CRACKS
3. POLYMER CONCRETE OVERLAY
4. REPLACE BARRIER RAILING WITH TYPE 80
5. REMOVE REMAINING PORTION OF SLOPE PAVING AND RECONSTRUCT FULL SLOPE PAVING

LEGEND:

- WATER FLOW DIRECTION
- TRAFFIC DIRECTION
- (A) SLOPE PAVING
- (B) GAP BENEATH REMAINING PORTION OF SLOPE PAVING

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$30.59
TOTAL COST OF BRIDGE REPAIR	=	$1,036,000

BRIDGE NO: 28C0034

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER — DANEA S. GEMMELL, No. C54151, Exp. 12/31/2011, CIVIL, STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN; HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN: 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER — ROBERT C. FISH, No. C39540, Exp. 12/31/2011, CIVIL, STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WILLOW PASS ROAD OVER MT DIABLO CREEK

GENERAL PLAN

ST-XX

SHEET X OF XX

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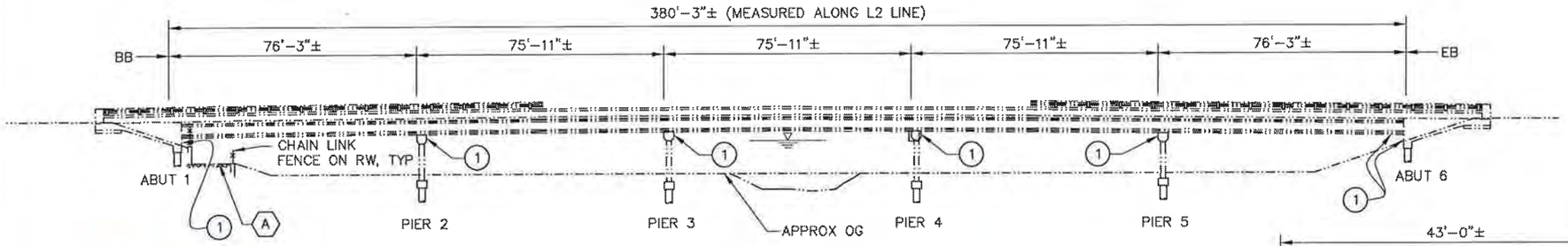
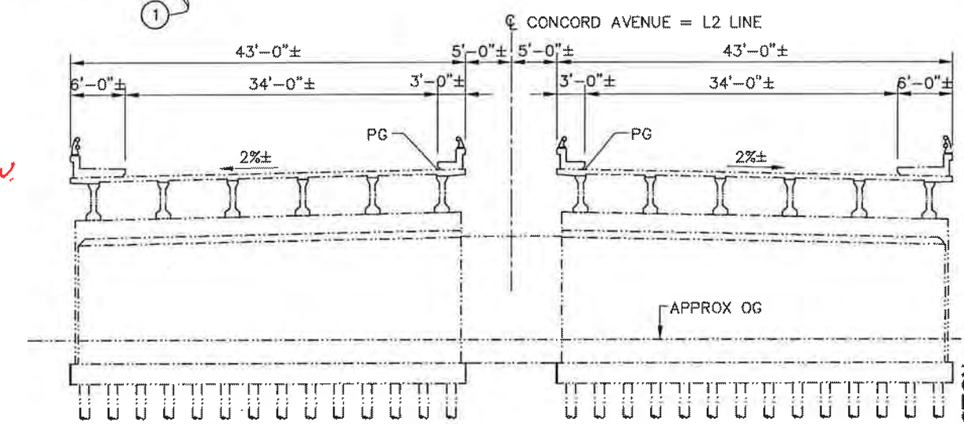
!? . INDICATES ASSUMED FOOT TRAFFIC
!! AROUND EACH PIER
· ASSUME 10' ON EACH SIDE OF PIER WALL
· 20' x 116'. TYPICAL PIER, 4 TOTAL
· ASSUME ACCESS FROM PIER TO PIER ALONG ROUTES (A) & (B) AS SHOWN



ELEVATION
SCALE: 1" = 20'

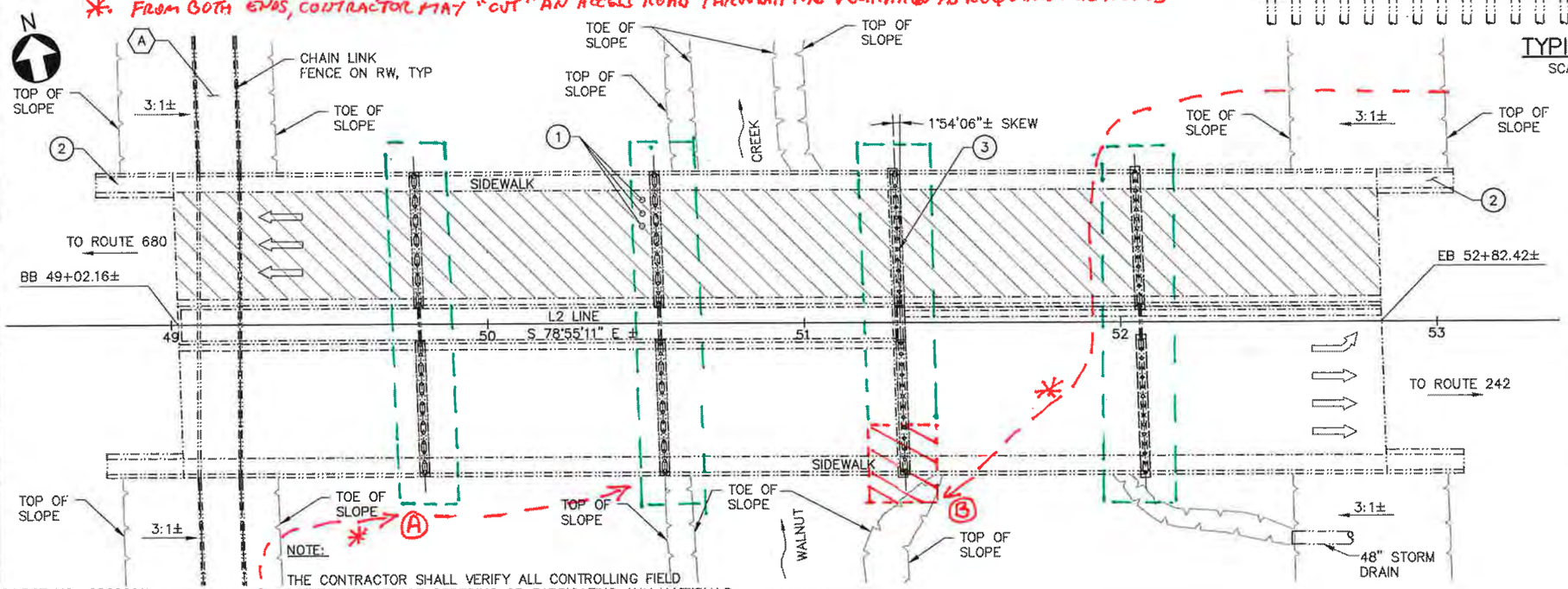
1. WORK ON DECK:
· ACCOMPLISHED BY LANE CLOSURES (ONE OR TWO AT A TIME)
· CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT WITHIN CLOSED LANES.

2. WORK BELOW DECK: IT IS EXPECTED THAT CONTRACTOR MAY USE ADJACENT PRIVATE PARKING LOTS FOR MOBILIZATION.
· TO MINIMIZE THE IMPACT TO THE CREEK, ACCESS SHALL BE FROM BOTH ENDS OF THE BRIDGE.
(A) ACCESS TO AREAS WEST OF THE MAIN CHANNEL SHALL BE FROM THE "IRON HORSE REGIONAL TRAIL"
· WORK WILL BE FROM HAND CARRIED LADDERS AND SCAFFOLDING.
(B) ACCESS TO AREAS EAST OF THE MAIN CHANNEL SHALL BE FROM THE BIKE TRAIL HEAD AT THE NE. CORNER.
· SCOUR PROTECTION WORK AT THE SOUTH END OF PIER 4 WILL BE BY THE MINIMUM SIZED EQUIPMENT (TRACKTOR, BACKHOE, TRUCK) TO PLACE THE NEW R.S.P.
*. FROM BOTH ENDS, CONTRACTOR MAY "CUT" AN ACCESS ROAD THROUGH THE VEGITATION AS REQUIRED FOR ACCESS



TYPICAL SECTION
SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION



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

PLAN
SCALE: 1" = 20'
THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

REPAIR LEGEND:
(1) SPALLS AND ROCK POCKET REPAIRS
(2) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
(3) CLEAN AND REPLACE JOINT SEAL
METHACRYLATE DECK SEAL
REPAIR/REHABILITATE RSP

LEGEND:
(A) IRON HORSE REGIONAL TRAIL
WATER FLOW DIRECTION
DIRECTION OF TRAFFIC

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$1.52
TOTAL COST OF BRIDGE REPAIR	=	$49,600

BRIDGE NO: 28C0091L

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED _____
PROJECT ENGINEER
REVISED BY _____ DATE _____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CONCORD AVENUE BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX
SHEET X OF XX

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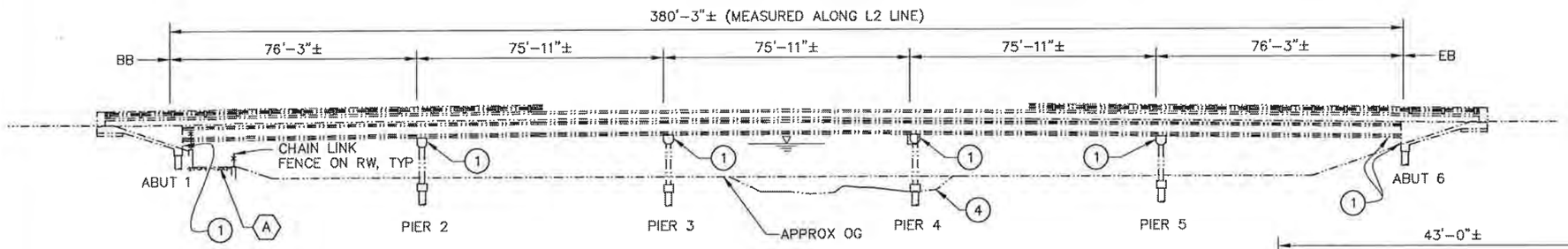
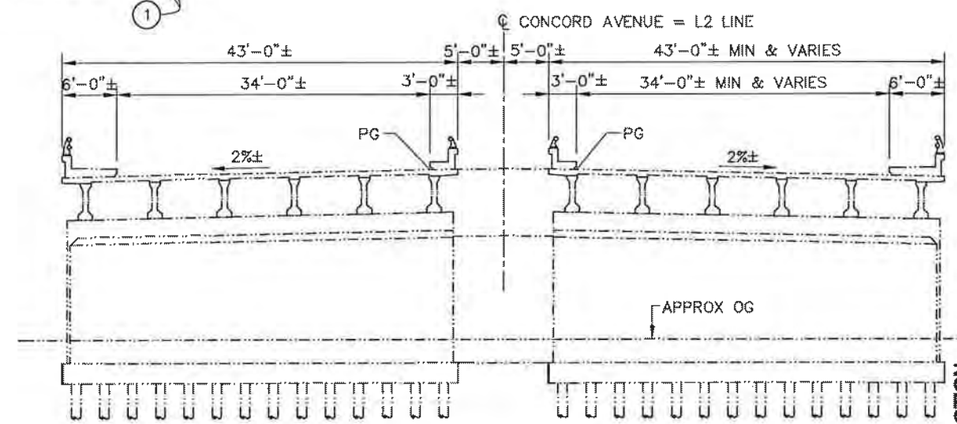
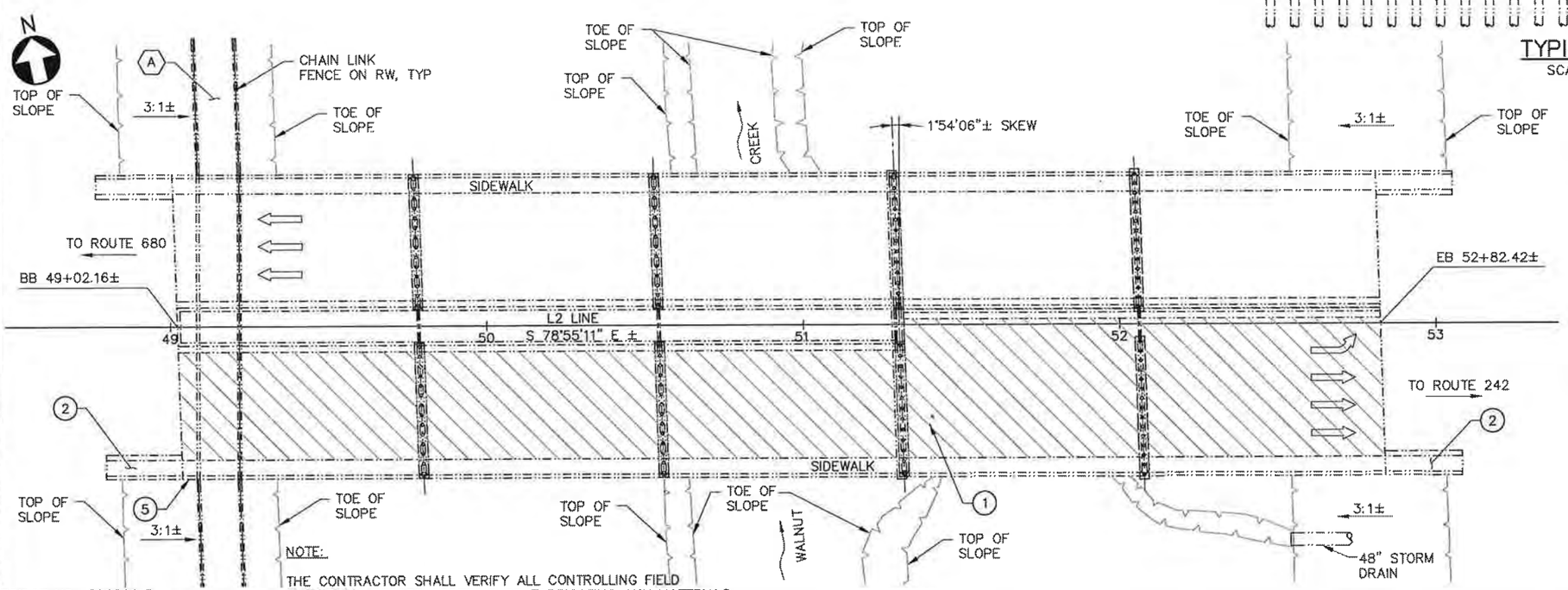


ELEVATION
SCALE: 1" = 20'

· SEE BRIDGE NO. 28 C 0091L FOR WORK & ACCESS DESCRIPTION.



TYPICAL SECTION
SCALE: 1/8" = 1'-0"



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

PLAN
SCALE: 1" = 20'

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

REPAIR LEGEND:

1. SPALLS AND ROCK POCKET REPAIRS
2. REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
3. CLEAN AND REPLACE JOINT SEAL
4. REPAIR/REHABILITATE RSP
5. REPAIR BRIDGE METAL RAILING

METHACRYLATE DECK SEAL

LEGEND:

A. IRON HORSE REGIONAL TRAIL
WATER FLOW DIRECTION
DIRECTION OF TRAFFIC

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY = $4.01

TOTAL COST OF BRIDGE REPAIR = $131,200

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0091R

CITY REVIEW BY:
NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CONCORD AVENUE BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX
SHEET X OF XX

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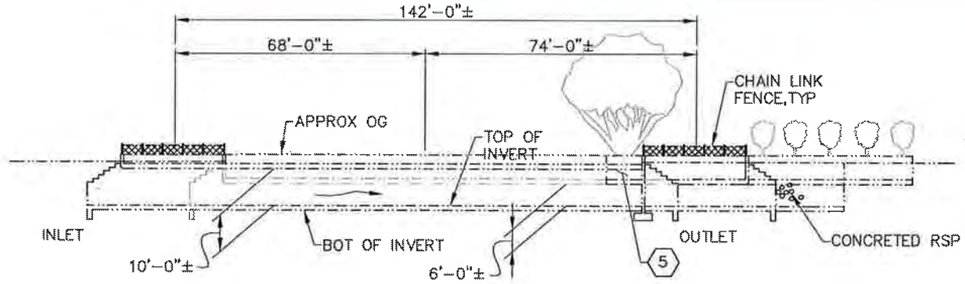
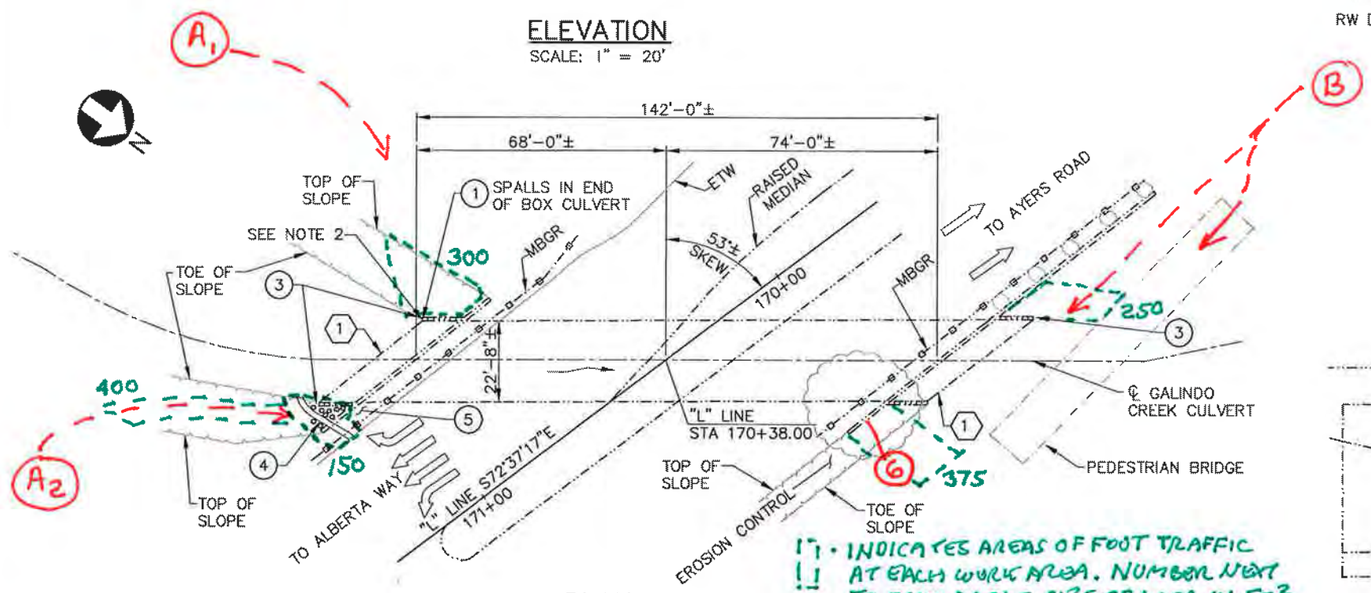


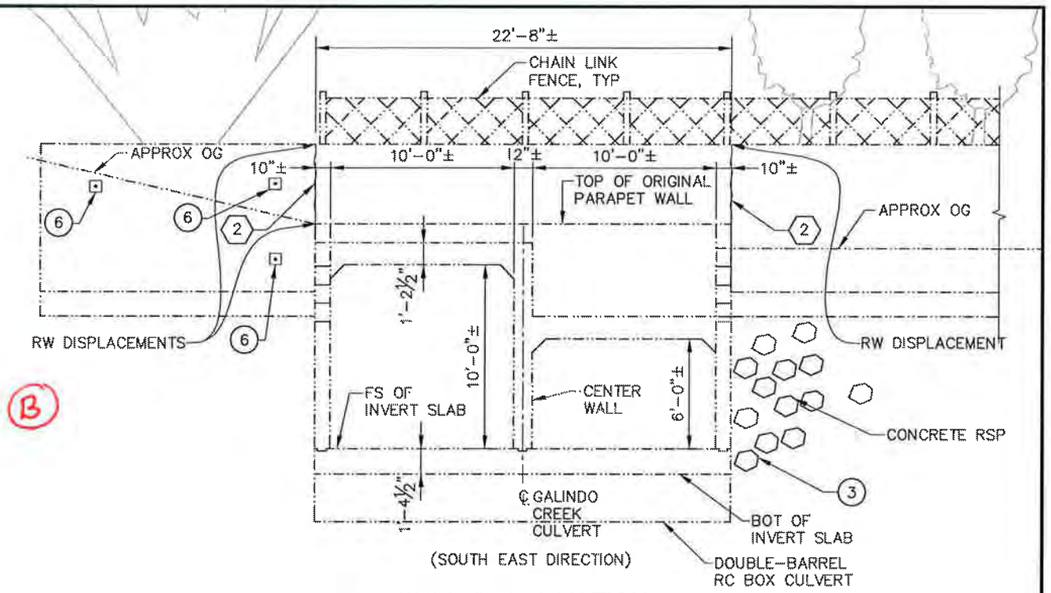
ELEVATION

SCALE: 1" = 20'



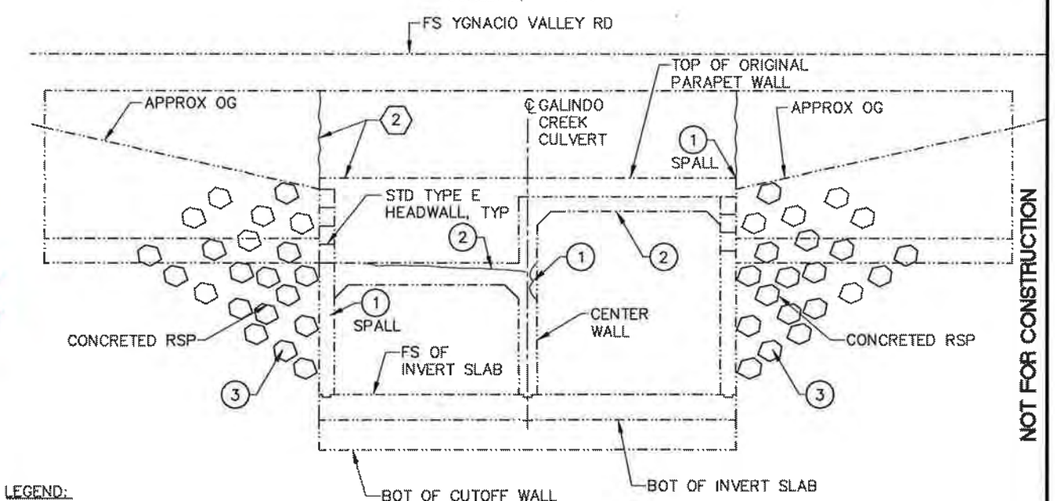
PLAN

SCALE: 1" = 20'



OUTLET ELEVATION

SCALE: ¼" = 1'-0"



INLET ELEVATION

SCALE: ¼" = 1'-0"

NOT FOR CONSTRUCTION

1. NO DECK WORK IS REQUIRED
2. WORK BELOW DECK: (BURIED CULVERT TYPE BRIDGE)
   - ON THE SOUTH END OF THE CULVERT, TWO ACCESS POINTS ARE ANTICIPATED:
     - (A1) FROM THE WEST SIDE OF THE CREEK, THE CONTRACTOR MAY GAIN ACCESS THROUGH THE ADJACENT DETENTION POND (TYPICALLY DRY & W/O VEGITATION) FROM CAMPUS DRIVE
     - (A2) FROM THE EAST SIDE OF THE CREEK, THE CONTRACTOR MAY GAIN ACCESS DIRECTLY FROM CAMPUS DRIVE OR PINE HOLLOW RD.
   - SEVERAL VIABLE AREAS EXIST FOR STAGGING AREAS
   - ON THE NORTH END OF THE CULVERT:
     - (B) ACCESS SHALL BE FROM AN EMERGENCY VEHICLE ENTRANCE OFF OF YGNACIO VALLEY RD. LOCATED WEST OF THE BRIDGE & CONTINUING BIKE TRAIL. DIKE BRIDGE WILL BE USED TO ACCESS EAST SIDE OF CREEK.

- INDICATES AREAS OF FOOT TRAFFIC AT EACH WORK AREA. NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT²
- ASSUME ACCESS TO EACH AREA FROM ROUTES (A1), (A2) & (B) AS SHOWN.

REPAIR LEGEND:

1	SPALL AND ROCK POCKET REPAIRS
2	EPOXY INJECT CRACK
3	REPAIR CONCRETED RSP
4	OVERSIDE DRAIN
5	REPAIR AC DIKE
6	TIEBACK ANCHORS

LEGEND:

	DIRECTION OF TRAFFIC
	WATER FLOW DIRECTION
1	LIMIT OF RC INVERT SLAB
2	EXPANSION JOINT

- MOST WORK WILL BE BY HAND USING LADDERS & SCAFFOLDING.
- WHERE REQUIRED, CONTRACTOR MAY TEMPORARILY SHUT DOWN A LANE TO OFFLOAD RSP. OR EQUIPMENT SUCH AS FOR INSTALLING TIEBACK ANCHORS.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE REPAIR ISSUES ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$32.82
TOTAL COST OF BRIDGE REPAIR	=	$105,600

BRIDGE NO: 28C0115

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANIEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

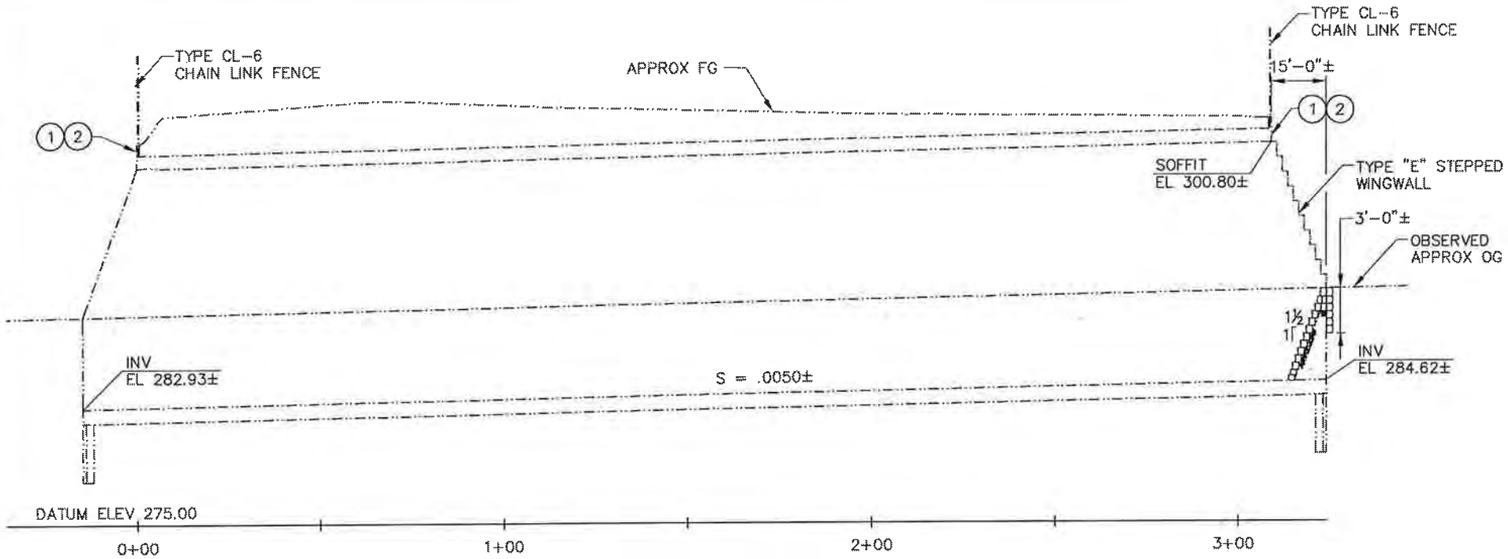
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

YGNACIO VALLEY RD BRIDGE OVER GALINDO CREEK GENERAL PLAN

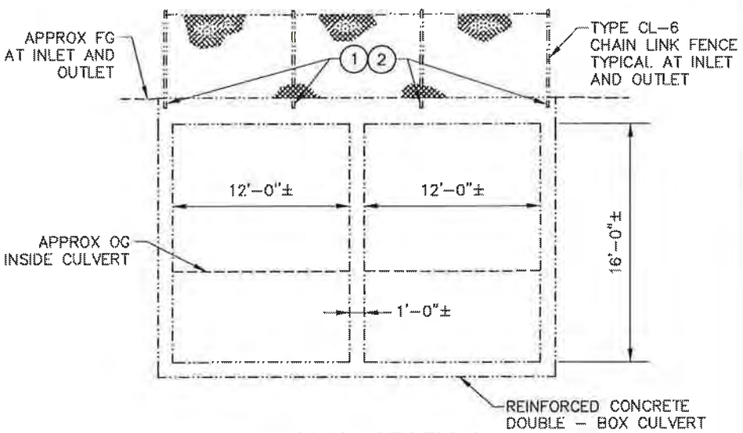
ST-XX

SHEET X OF XX



DEVELOPED ELEVATION

SCALE: 1" = 20' HORIZ
1" = 5' VERT



TYPICAL SECTION

SCALE: 1" = 5'-0"'

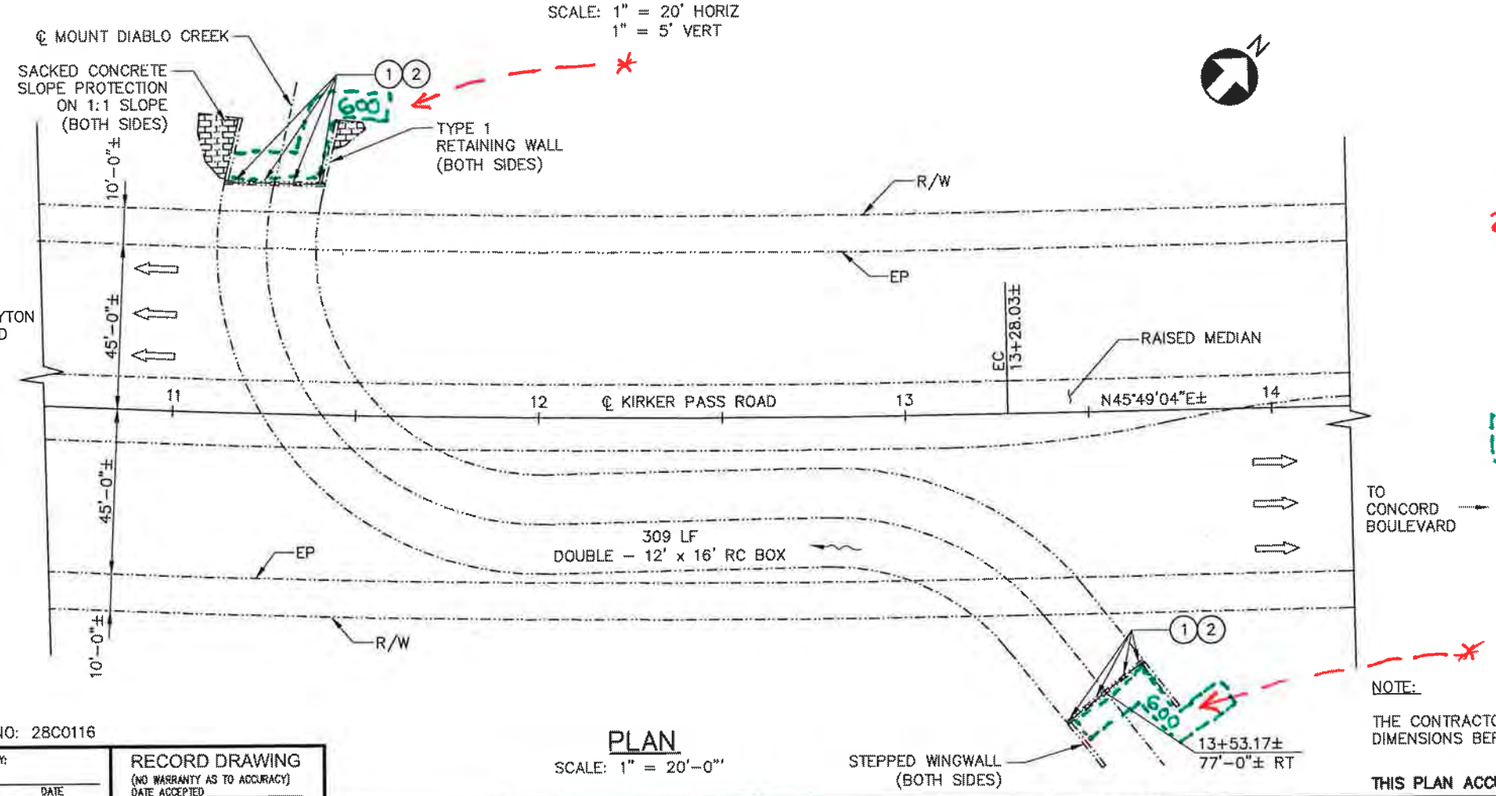
LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. SPALL REPAIRS AT FENCE POST POCKETS
2. REMOVE AND REPLACE CHAIN LINK FENCE POST



PLAN

SCALE: 1" = 20'-0"'

1. NO DECKWORK IS REQUIRED
2. WORK BELOW DECK (BURRIED CULVERT TYPE BRIDGE)

. ALL WORK WILL BE ACCOMPLISHED BY HAND FROM LADDERS OR SCAFFHOLDING. .

* . ACCESS AND STAGING WILL BE FROM OPEN DIRT AREAS & PARKING LOTS ADJACENT TO BOTH ENDS OF THE CULVERT.

[ ] . INDICATES AREAS OF FOOT TRAFFIC AT EACH WORK AREA
. NUMBER IN EACH AREA = SIZE OF AREA IN Ft^2
. ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$1.52
TOTAL COST OF BRIDGE REPAIR	=	$12,400

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0116

CITY REVIEW BY:
NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	P. ARIGO		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2D60
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

KIRKER PASS ROAD BRIDGE OVER MOUNT DIABLO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

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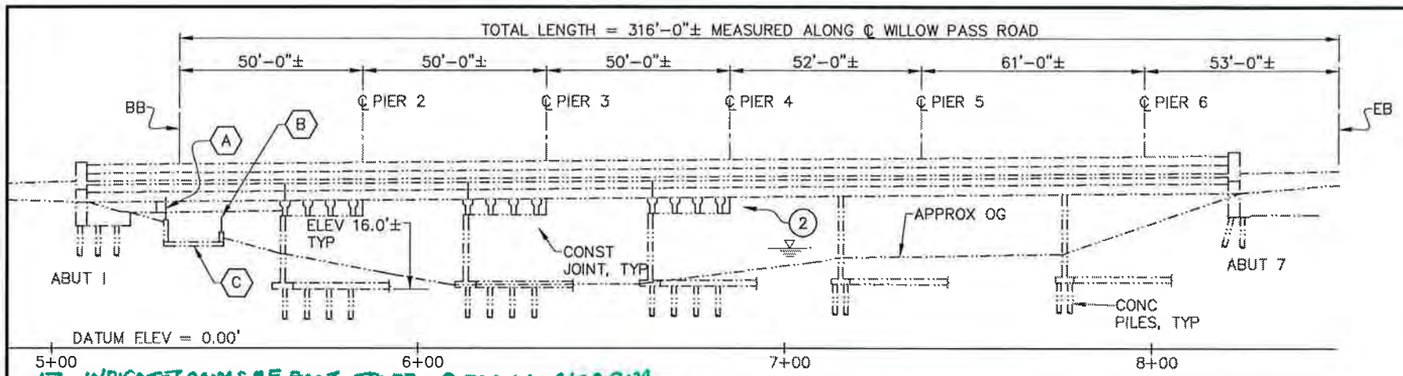
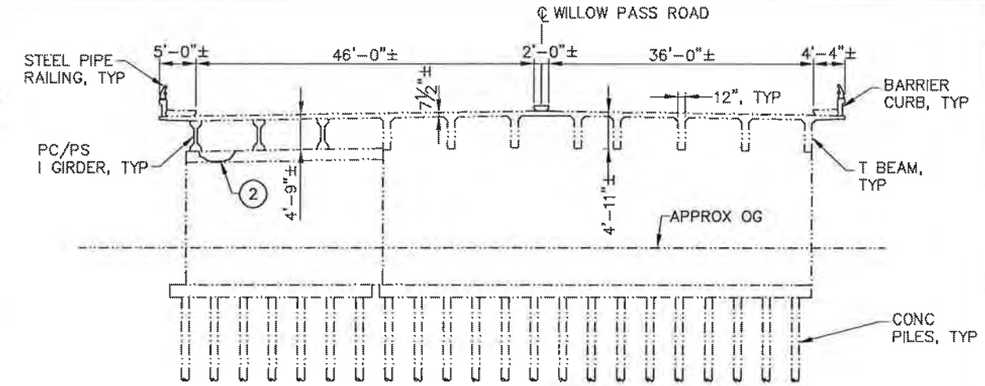


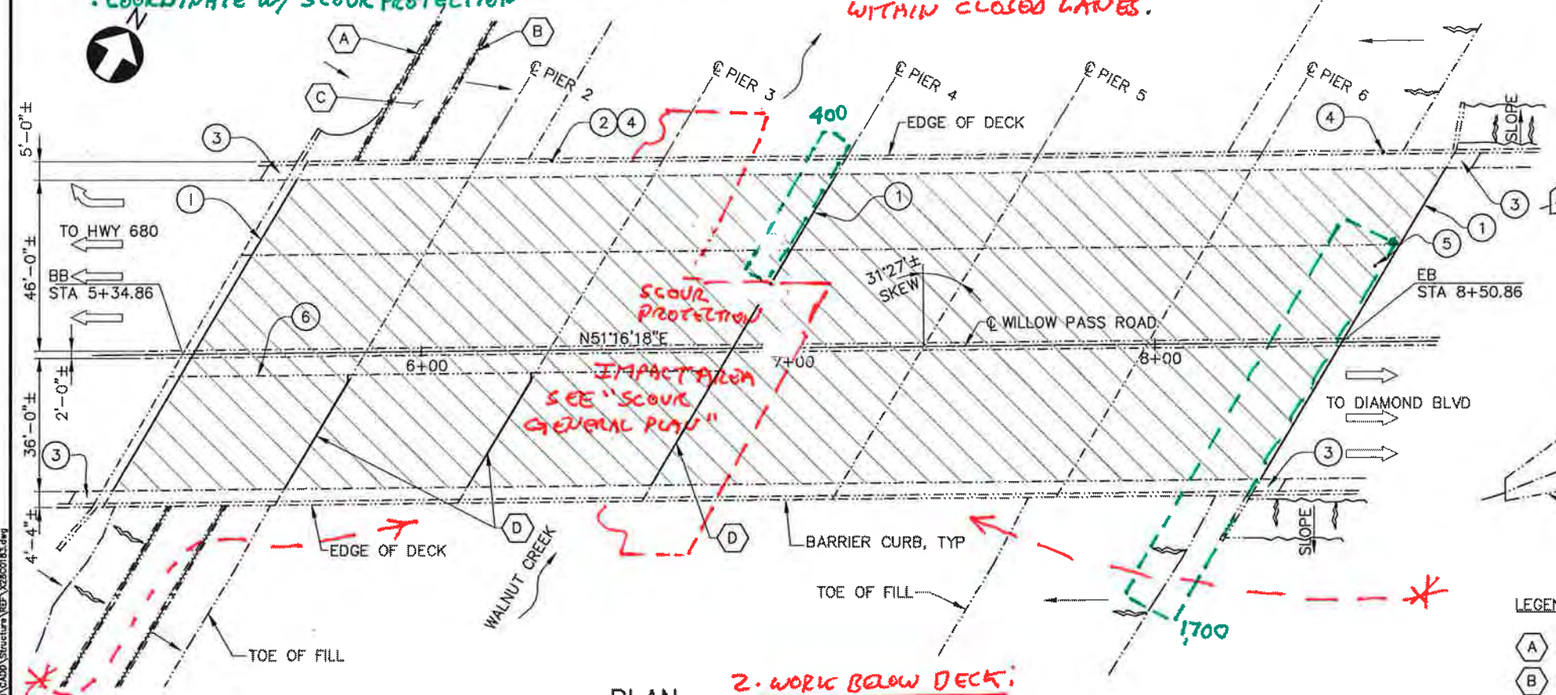
ELEVATION
SCALE: 1" = 20'



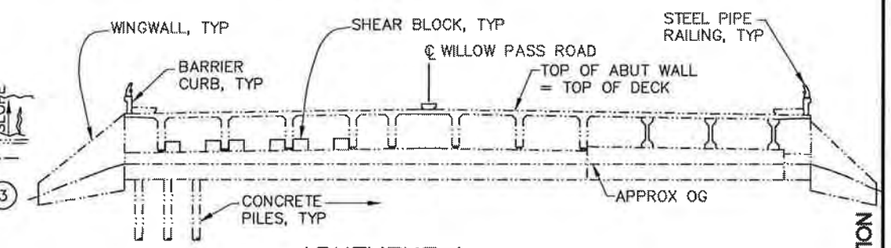
SECTION PIER 4
SCALE: 1" = 10'

- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT2
- ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.
- COORDINATE W/ SCOUR PROTECTION

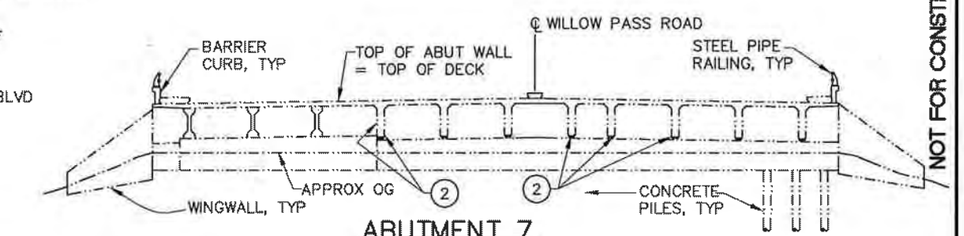
1. WORK ON DECK:
- ACCOMPLISHED BY LANE CLOSURES (ONE OR TWO AT A TIME)
- CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT WITHIN CLOSED LANES.



PLAN
SCALE: 1" = 20'



ABUTMENT 1
SCALE: 1" = 10'



ABUTMENT 7
SCALE: 1" = 10'

NOT FOR CONSTRUCTION

LEGEND:

- (A) 6' CHAIN LINK FENCE ON RW
- (B) 4' CHAIN LINK FENCE
- (C) IRON HORSE REGIONAL TRAIL
- (D) EXPANSION JOINT WITH STEEL EDGES
- HIGH WATER ELEVATION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. CLEAN & REPLACE JT SEAL
2. SPALL AND ROCK POCKET REPAIRS
3. REMOVE & RECONSTRUCT SIDEWALK (PORTION)
4. REPLACE METAL RAILING POST
5. REPAIR DECK SPALL
6. REHABILITATE LONGITUDINAL JT
- METHACRYLATE DECK TREATMENT

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY = $22.46

TOTAL COST OF BRIDGE REPAIR = $648,100

BRIDGE NO: 28C0183

2. WORK BELOW DECK:
- IT IS EXPECTED THAT CONTRACTOR WILL USE ADJACENT PRIVATE PARKING LOTS FOR MOBILIZATION.

* - WORK SHALL BE FROM HAND CARRIED LADDERS & SCAFFOLDING. BROUGHT IN FROM EITHER END OF THE BRIDGE USING THE "IRON HORSE" BIKE TRAIL @ THE WEST END & CARRIED DOWN SLOPE FROM PARKING AREAS AT THE EAST END

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

** ALTERNATIVE ACCESS - IF COORDINATED W/ THE SCOUR PROTECTION MEASURES SHOWN ON THE FOLLOWING SHEET, MAY USE TEMPORARY ACCESS ROAD.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WILLOW PASS RD BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX

SHEET 1 OF 2

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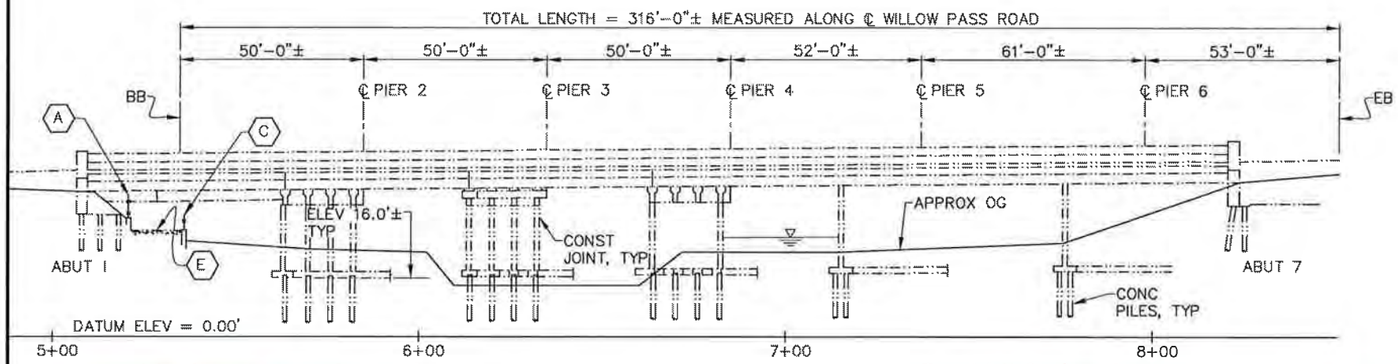
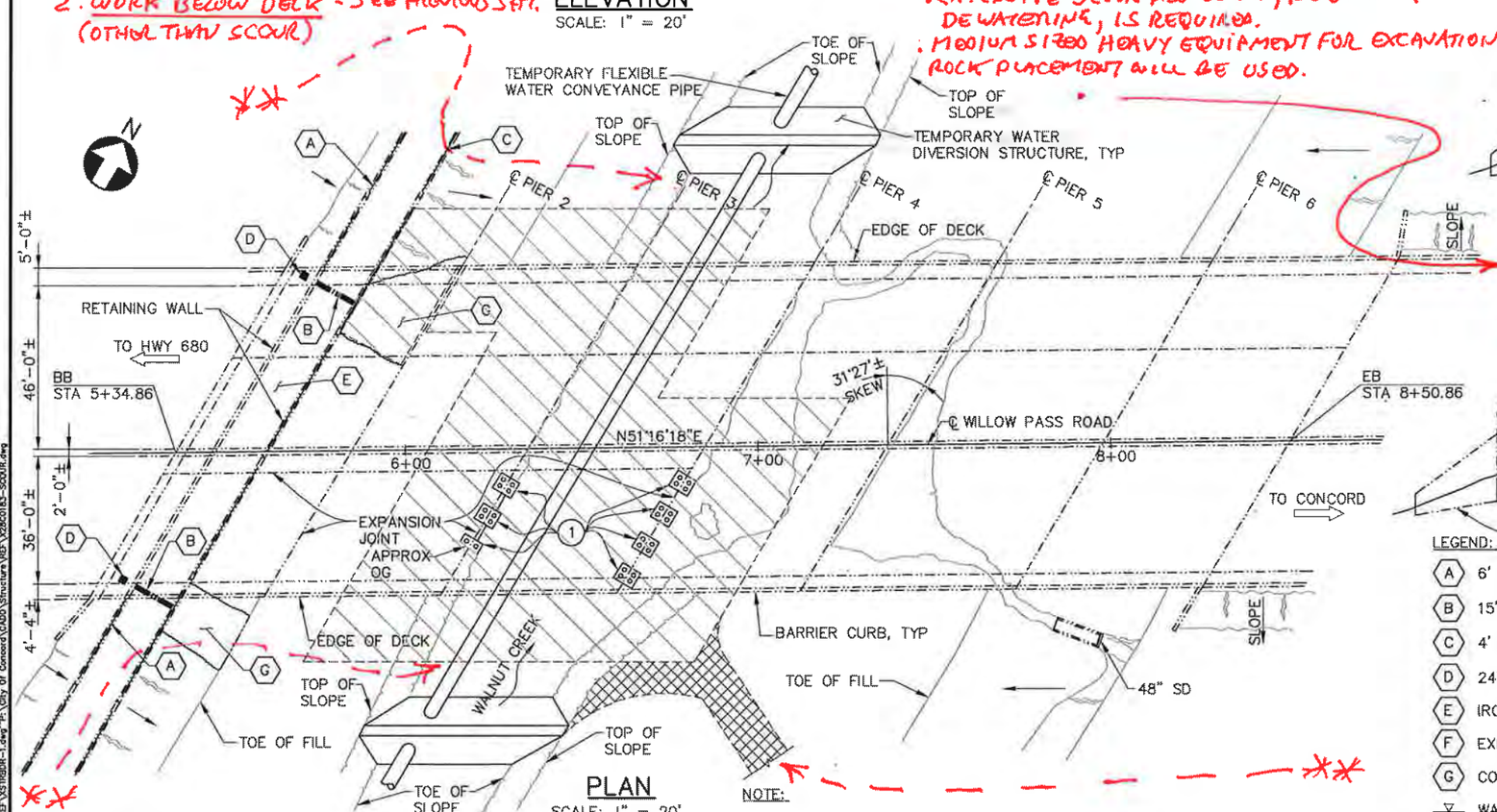


ELEVATION

SCALE: 1" = 20'

1. WORK ON DECK - SEE PREVIOUS SHT.
2. WORK BELOW DECK - SEE PREVIOUS SHT. (OTHER THAN SCOUR)

3. SCOUR PROTECTION
- EXTENSIVE SCOUR PROTECTION, REQUIRING DEWATERING, IS REQUIRED.
- MEDIUM SIZED HEAVY EQUIPMENT FOR EXCAVATION & ROCK PLACEMENT WILL BE USED.



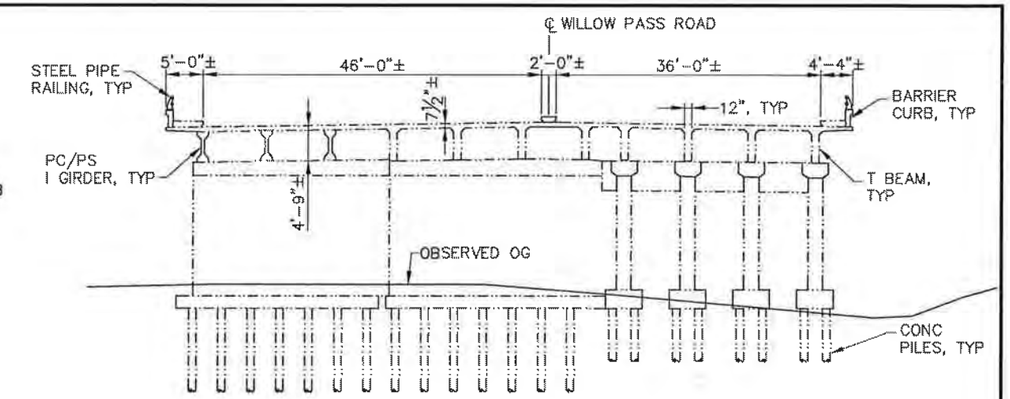
PLAN

SCALE: 1" = 20'

NOTE:

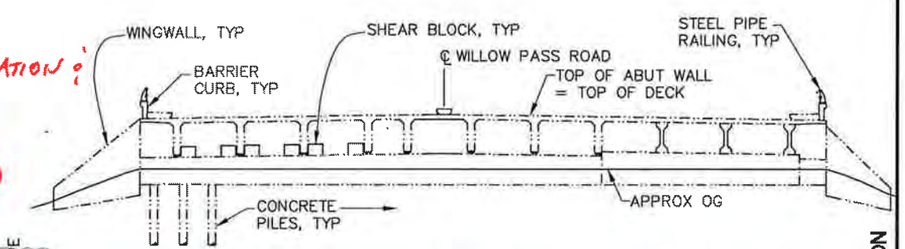
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

(THIS PLAN ACCURATE FOR BRIDGE SCOUR ISSUES ONLY)



PIER 4

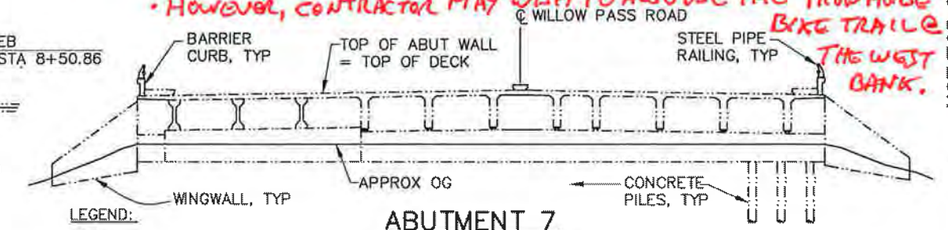
SCALE: 1" = 10'



ABUTMENT 1

SCALE: 1" = 10'

- MAIN ACCESS WILL BE BY 'CUT' ACCESS RD. FROM THE EAST BANK, USING THE ADJACENT PARKING LOT FOR MOBILIZATION AND STAGING.
- HOWEVER, CONTRACTOR MAY WISH TO ALSO USE THE "IRON HORSE" BIKE TRAIL @ THE WEST BANK.



ABUTMENT 7

SCALE: 1" = 10'

LEGEND:

- (A) 6' CHAIN LINK FENCE ON RW
- (B) 15" WIDE GRATED DRAIN
- (C) 4' CHAIN LINK FENCE
- (D) 24" x 24" DI
- (E) IRON HORSE REGIONAL TRAIL
- (F) EXPOSED PILE CAPS
- (G) CONCRETE ARMOR UNITS
- WATER LEVEL
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

- REPAIR/REHABILITATE RSP
- TEMPORARY ACCESS ROAD

NOTE:

FOR COST ESTIMATION, SEE PAGE 1 OF 2

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0183

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED _____
PROJECT ENGINEER
REVISED BY _____ DATE _____

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WILLOW PASS RD BRIDGE OVER WALNUT CREEK
SCOUR GENERAL PLAN

ST-XX

SHEET 2 OF 2

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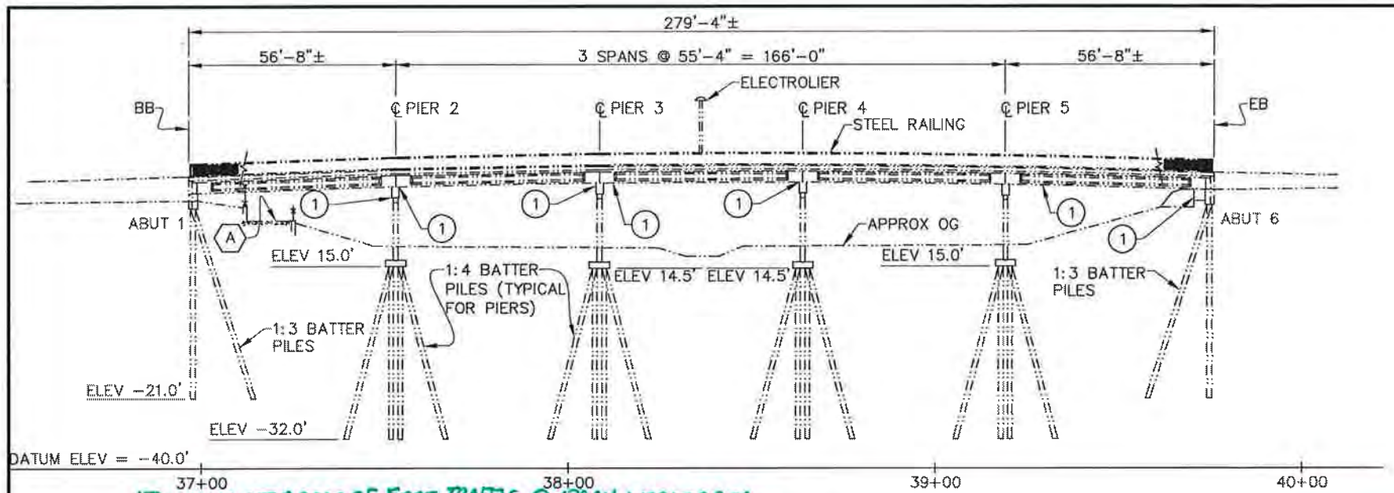
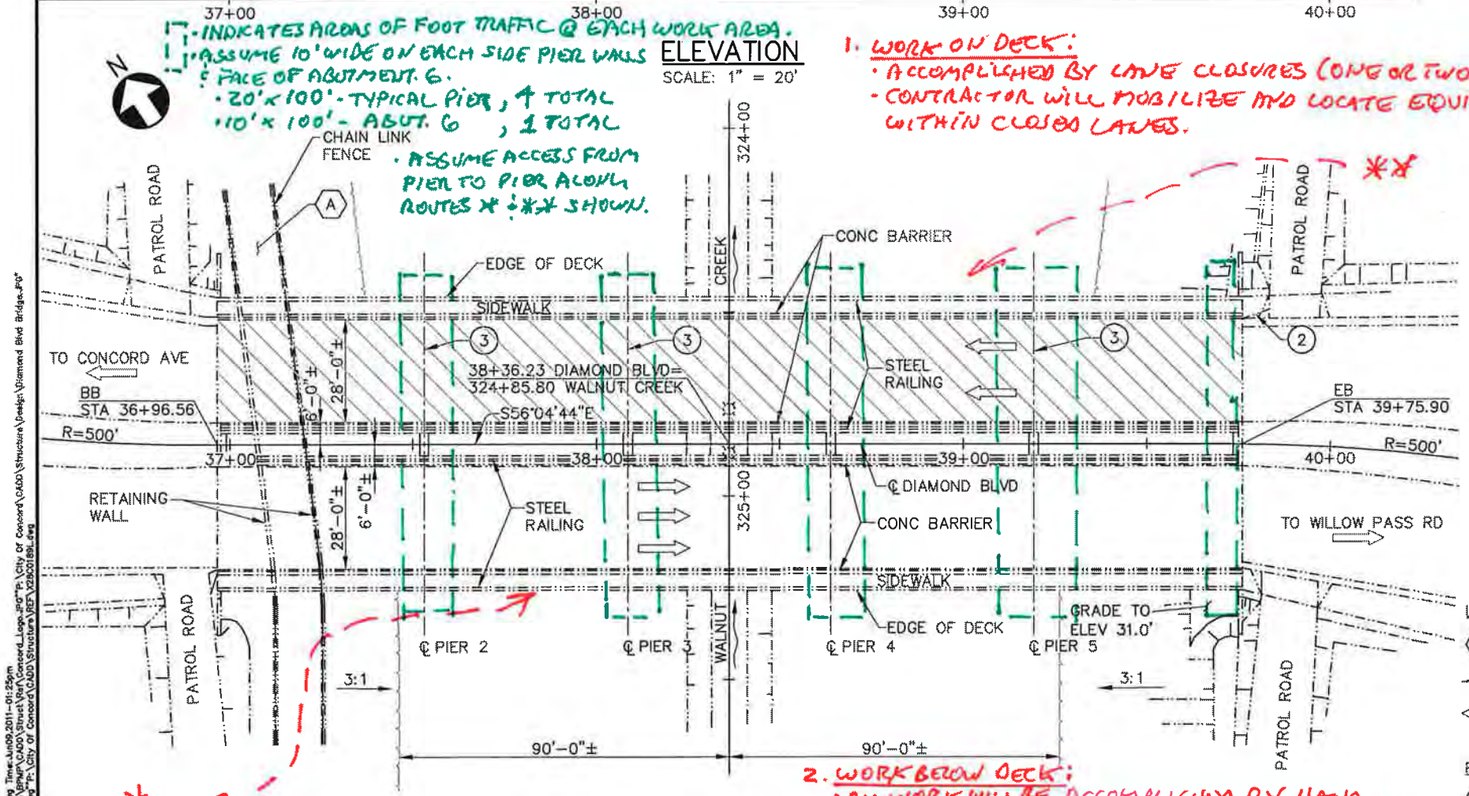


ELEVATION

SCALE: 1" = 20'

1. WORK ON DECK:
- ACCOMPLISHED BY LANE CLOSURES (ONE OR TWO AT A TIME).
- CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT WITHIN CLOSED LANES.

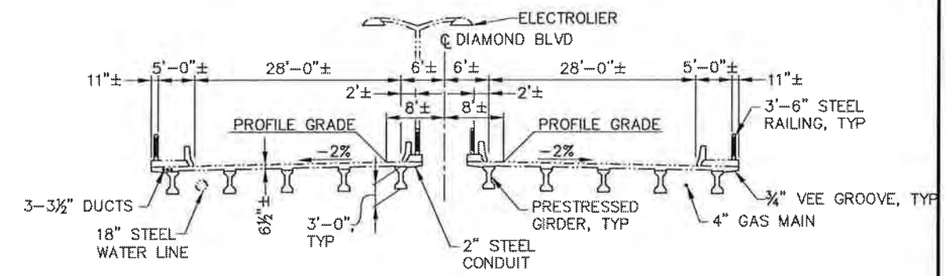


- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- ASSUME 10' WIDE ON EACH SIDE PIER WALLS & FACE OF ABUTMENT. 6.
- 20'x100' - TYPICAL PIER, 4 TOTAL
- 10'x100' - ABUT. 6, 1 TOTAL
- ASSUME ACCESS FROM PIER TO PIER ALONG ROUTES ** & **** SHOWN.

PLAN

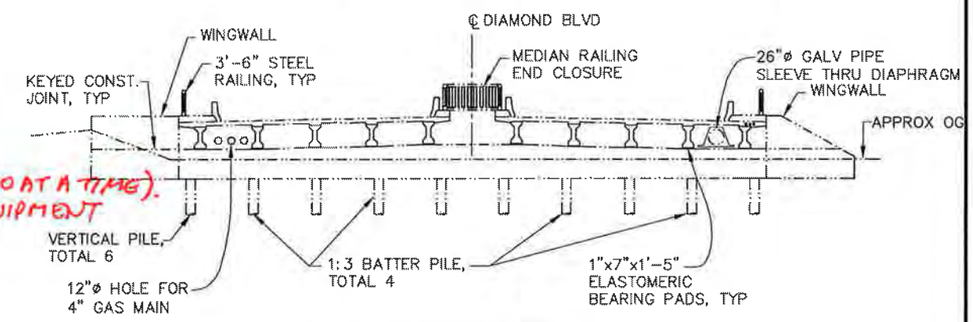
SCALE: 1" = 20'

2. WORK BELOW DECK:
- ALL WORK WILL BE ACCOMPLISHED BY HAND FROM LADDERS OR SCAFFOLDING, HAND CARRIED FROM EITHER END OF BRIDGE
- IT IS EXPECTED THAT CONTRACTOR WILL USE ADJACENT PRIVATE PARKING LOTS FOR MOBILIZATION.



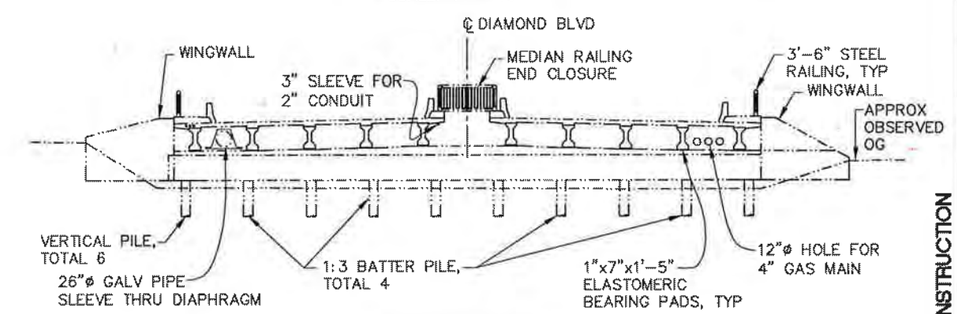
TYPICAL SECTION

SCALE: 1" = 10'



ABUTMENT 1

SCALE: 1" = 10'



ABUTMENT 6

SCALE: 1" = 10'

LEGEND:

- (A) IRON HORSE REGIONAL TRAIL
- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

- (1) SPALL AND ROCK POCKET REPAIRS
- (2) REPAIR BRIDGE METAL RAILING
- (3) CLEAN AND REPLACE JOINT SEALS
- POLYMER CONC OVERLAY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$2.66
TOTAL COST OF BRIDGE REPAIR	=	$53,300

NOT FOR CONSTRUCTION

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

BRIDGE NO: 28C0189L

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

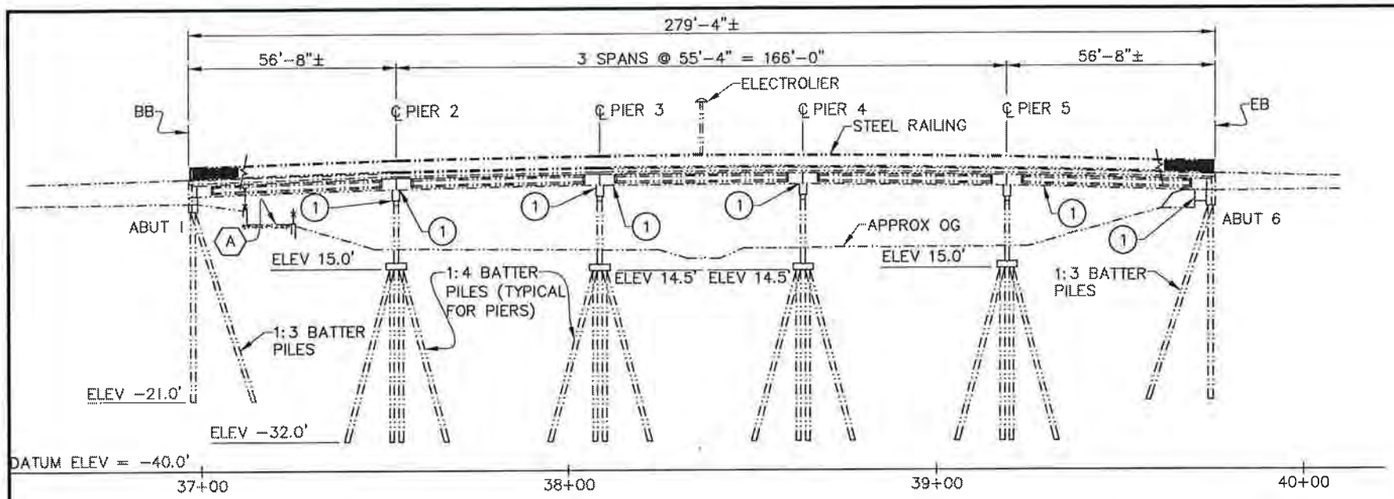
CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

DIAMOND BLVD BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX

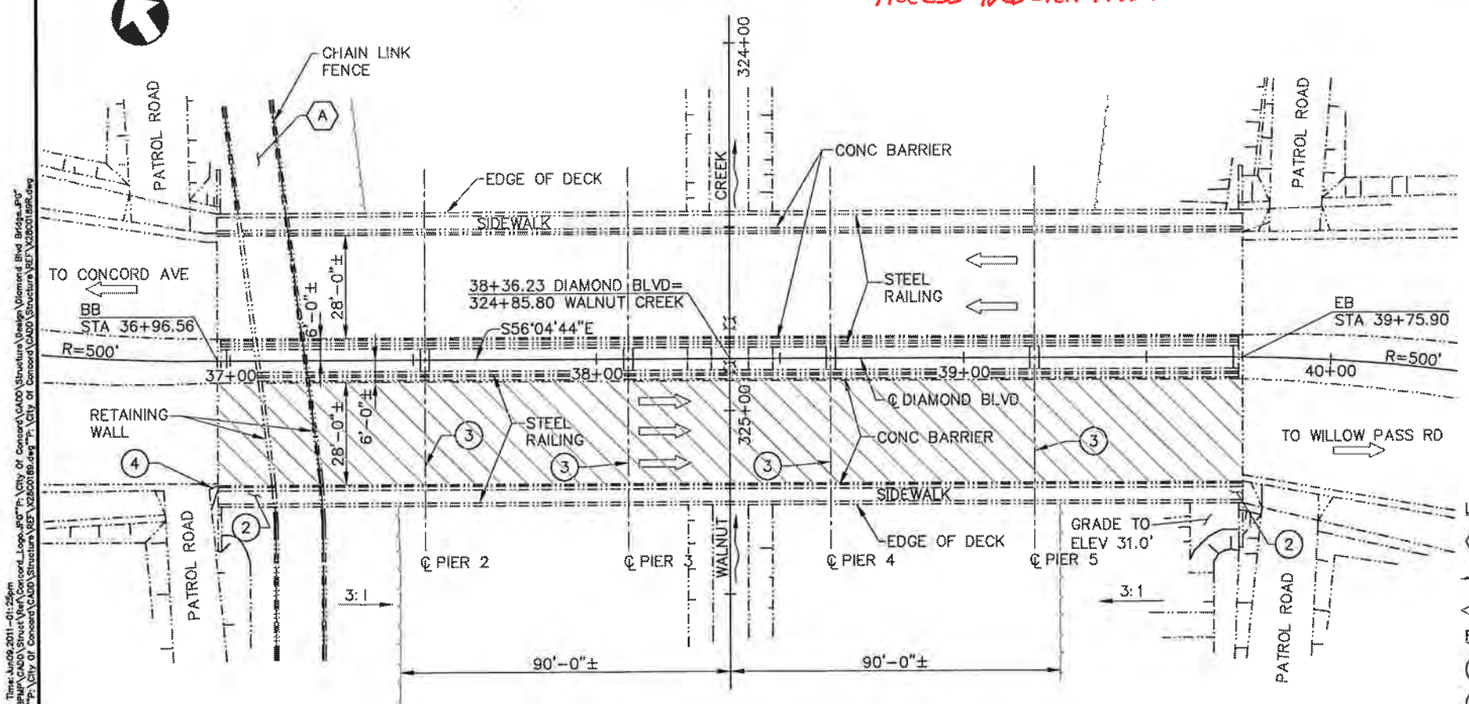
SHEET X OF XX



ELEVATION

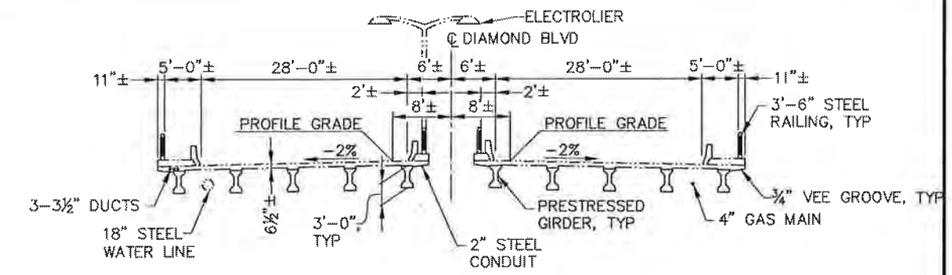
SCALE: 1" = 20'

•SEE BRIDGE NO. 28C-0189L FOR WORK & ACCESS DESCRIPTION.



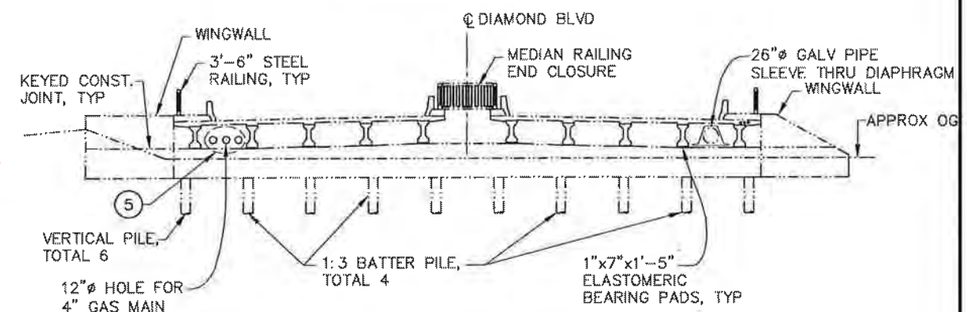
PLAN

SCALE: 1" = 20'



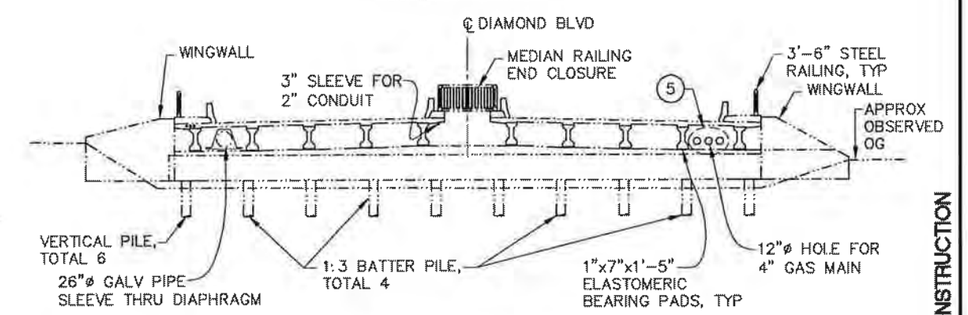
TYPICAL SECTION

SCALE: 1" = 10'



ABUTMENT 1

SCALE: 1" = 10'



ABUTMENT 6

SCALE: 1" = 20'

LEGEND:

- (A) IRON HORSE REGIONAL TRAIL
- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

- (1) SPALL AND ROCK POCKET REPAIRS
- (2) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
- (3) CLEAN AND REPLACE JOINT SEALS
- (4) REPAIR BRIDGE METAL RAILING
- (5) SEAL UTILITY OPENINGS AT ABUTMENTS
- POLYMER CONC OVERLAY

NOT FOR CONSTRUCTION

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$2.18
TOTAL COST OF BRIDGE REPAIR	=	$43,800

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

BRIDGE NO: 28C0189R

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. OUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

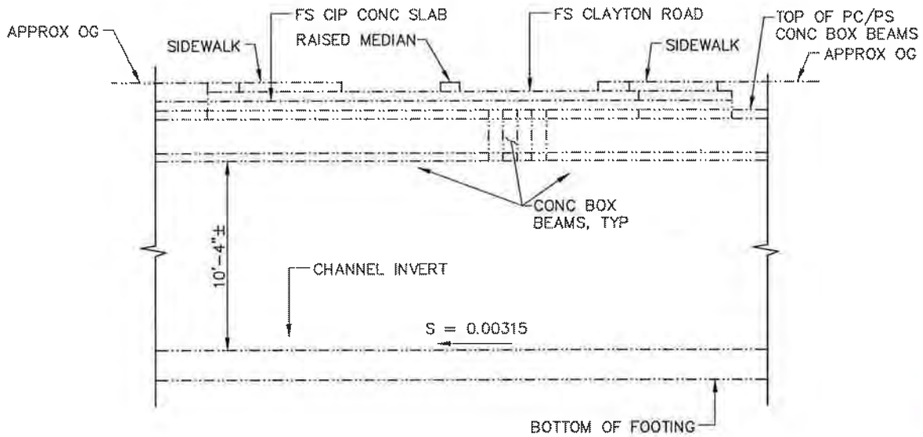
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

DIAMOND BLVD BRIDGE OVER WALNUT CREEK GENERAL PLAN

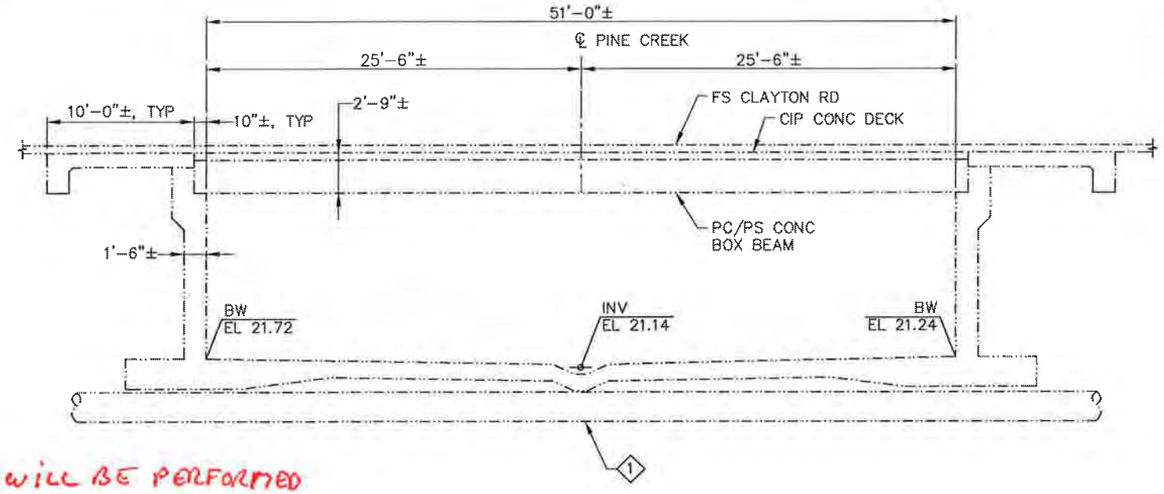
ST-XX

SHEET X OF XX



ELEVATION

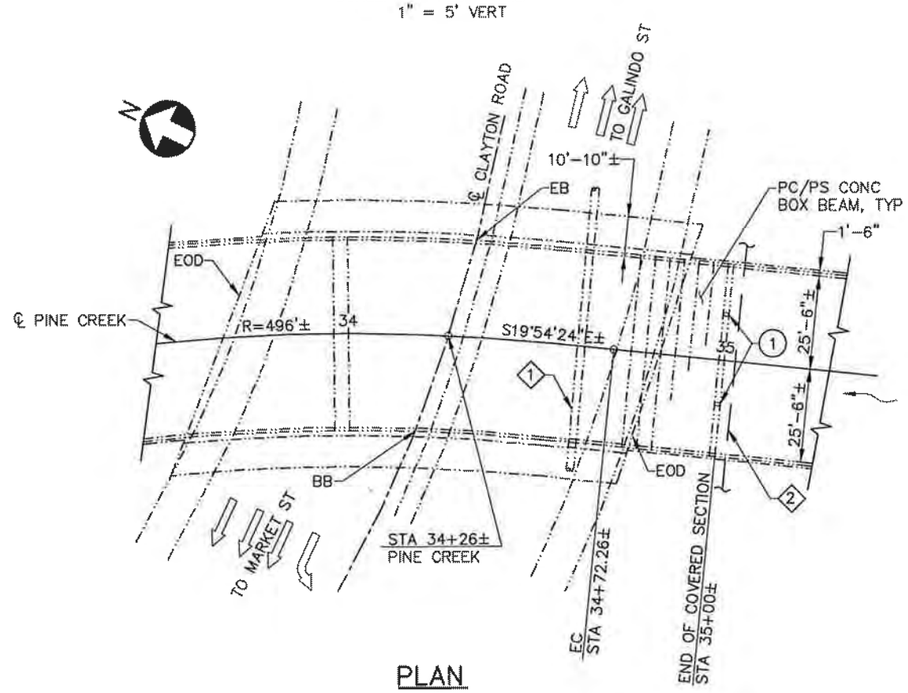
SCALE: 1" = 20' HORIZ
1" = 5' VERT



SECTION STA. 34+67

SCALE: 1" = 5'-0"

· NO WORK WILL BE PERFORMED AT THIS BRIDGE UNDER THE BPMP.
· CALTRANS HAS DETERMINED THAT THE REPAIR WORK NOTED IS THE RESPONSIBILITY OF THE UTILITY OWNER, WHOS ATTACHMENTS TO THE BRIDGE HAS CAUSED THE SPALLS.



PLAN

SCALE: 1" = 20'

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

UTILITY LEGEND:

1 TELEPHONE CABLE DUCTS

2 1'-10"± ø UTILITY

REPAIR LEGEND:

1 SPALL AND ROCK POCKET REPAIRS (BY OTHERS)

LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0198

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED

PROJECT ENGINEER

REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	P. ARIGO		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CLAYTON ROAD BRIDGE OVER PINE CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

P:\City of Concord\CADD\Structure\SHEET\28C0198-ST01.dwg Time:Jun09,2011-01:06pm
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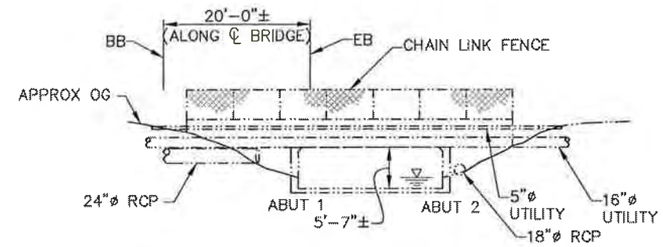
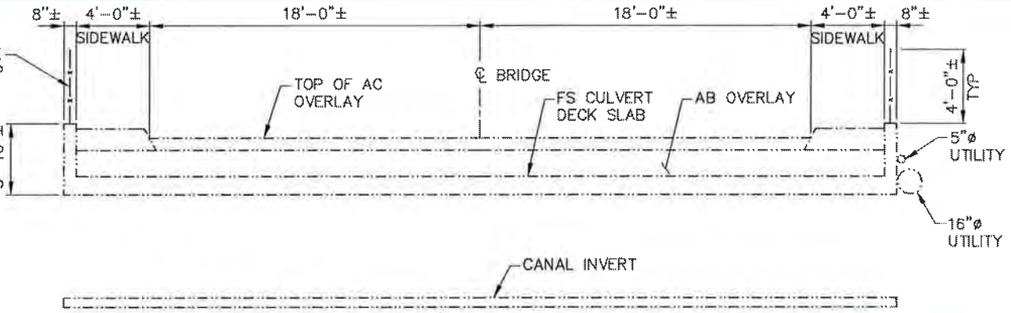
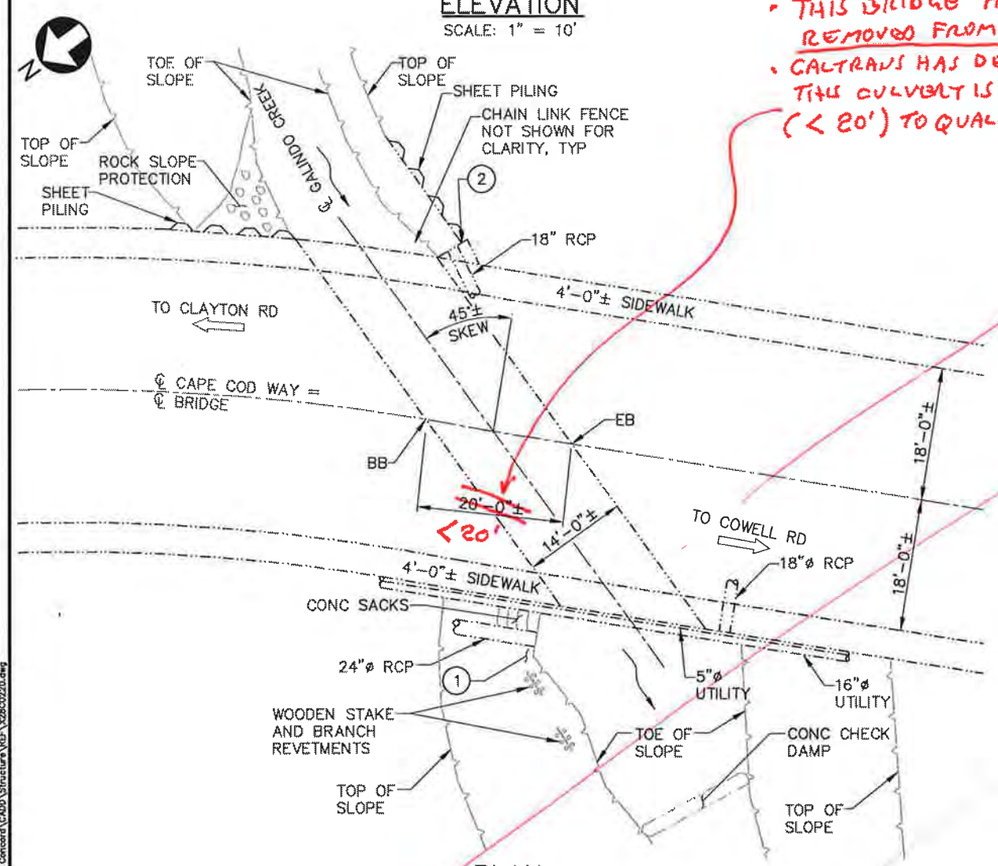


ELEVATION
SCALE: 1" = 10'

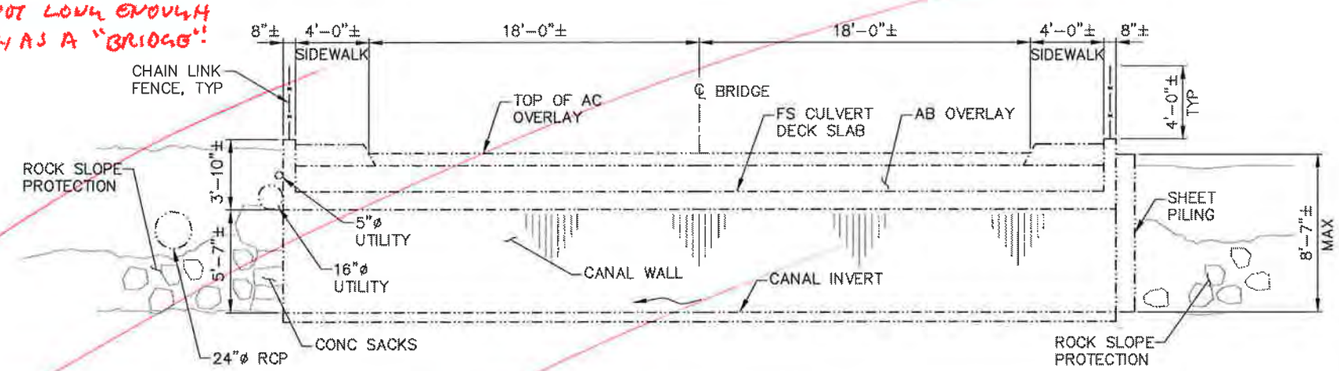


TYPICAL SECTION
SCALE: ¼" = 1'-0"

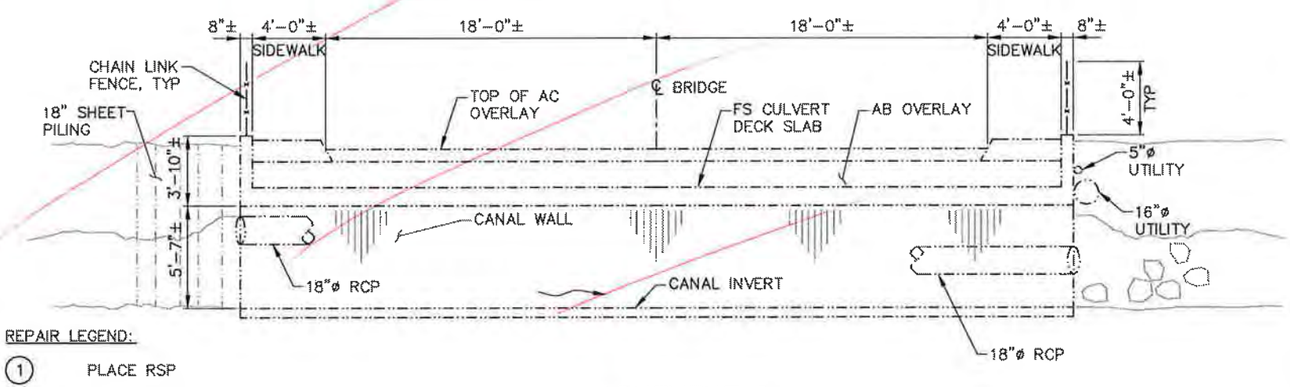
• THIS BRIDGE HAS BEEN REMOVED FROM THE BPMP.
• CALTRANS HAS DETERMINED THAT THE CULVERT IS NOT LONG ENOUGH (< 20') TO QUALIFY AS A "BRIDGE".



PLAN
SCALE: 1" = 10'



ABUTMENT 1
SCALE: ¼" = 1'-0"



ABUTMENT 2
SCALE: ¼" = 1'-0"

REPAIR LEGEND:

1. PLACE RSP
2. REPAIR JOINT

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC
- WATER SURFACE

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$49.78
TOTAL COST OF BRIDGE REPAIR	=	$44,600

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0220

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CAPE COD WAY BRIDGE OVER GALINDO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0220-ST01.dwg Time:Jun09,2011-01:26pm
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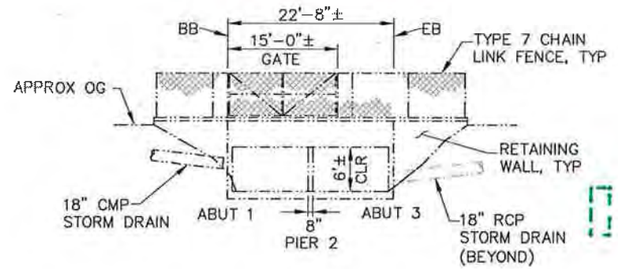
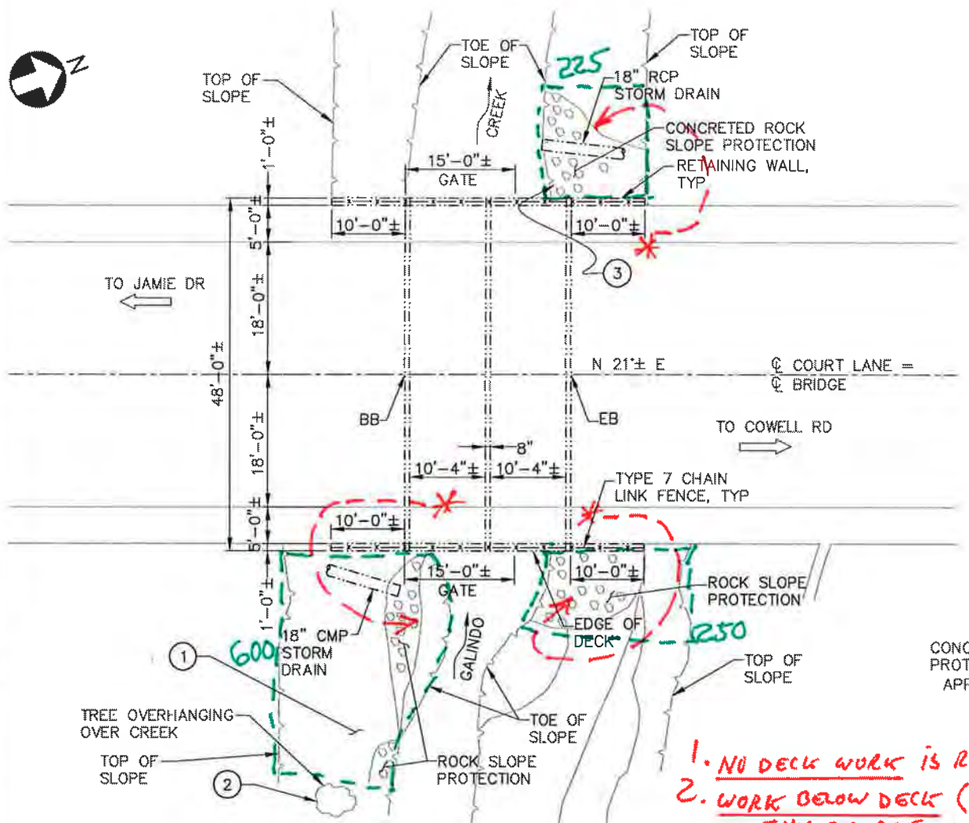


ELEVATION

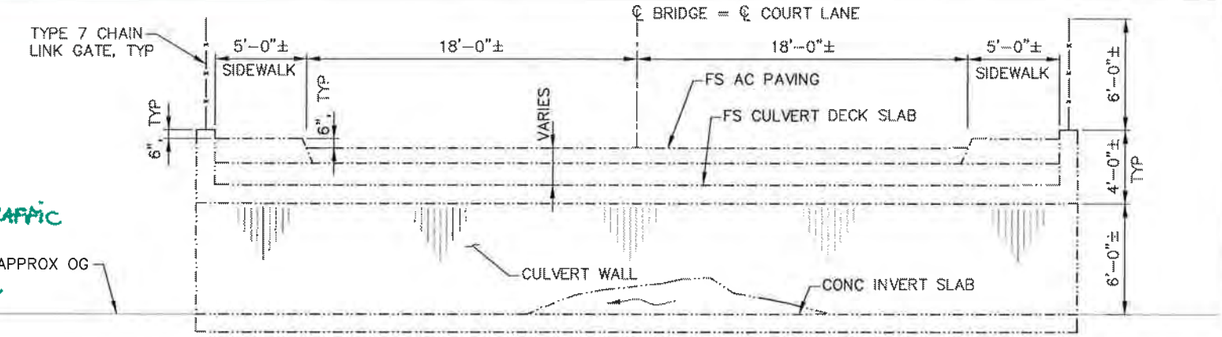
SCALE: 1" = 10'

- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT^2.
- ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.



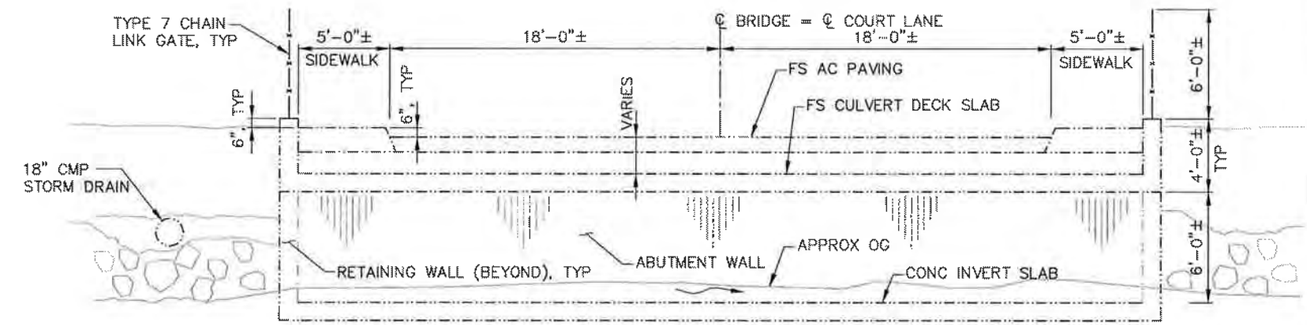
PLAN

SCALE: 1" = 10'



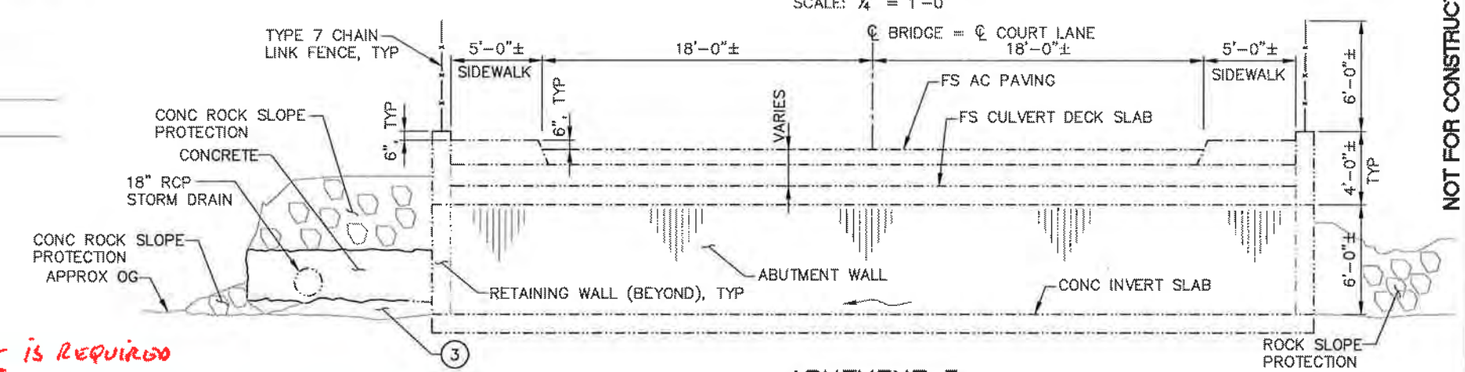
SECTION AT PIER 2

SCALE: ¼" = 1'-0"



ABUTMENT 1

SCALE: ¼" = 1'-0"



ABUTMENT 3

SCALE: ¼" = 1'-0"

NOT FOR CONSTRUCTION

1. NO DECK WORK IS REQUIRED
2. WORK BELOW DECK (BURRIED CULVERT TYPE BRIDGE)
   - THIS BRIDGE IS LOCATED IN A RESIDENTIAL AREA WITH A HOME @ EACH CORNER
   - WORK WILL BE BY HAND USING A GROUT PUMP LOCATED ON THE STREET, IF REQUIRED, FOR ITEM (3)
   - * CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING, SIGNS, CONES & OTHER SAFETY MEASURES.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. REPAIR/REHABILITATE RSP
2. REMOVE TREE (BY OTHERS)
3. REPAIR CONCRETED RSP

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$78.33
TOTAL COST OF BRIDGE REPAIR	=	$85,200

BRIDGE NO: 28C0221

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

COURT LANE BRIDGE OVER GALINDO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0221-ST01.dwg Time:Jun10,2011-01:08pm
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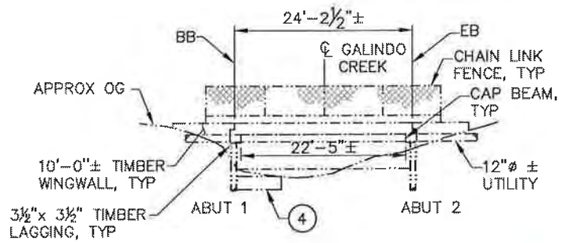


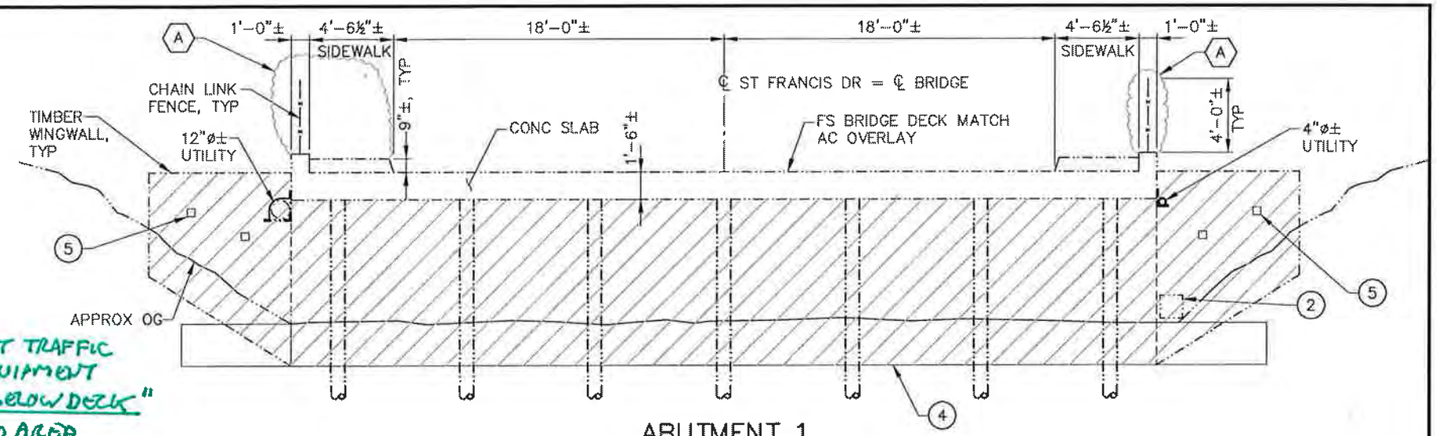
ELEVATION

SCALE: 1" = 10'

• INDICATES AREAS OF FOOT TRAFFIC INCLUDING USE OF EQUIPMENT NOTED IN "2. WORK BELOW DECK"

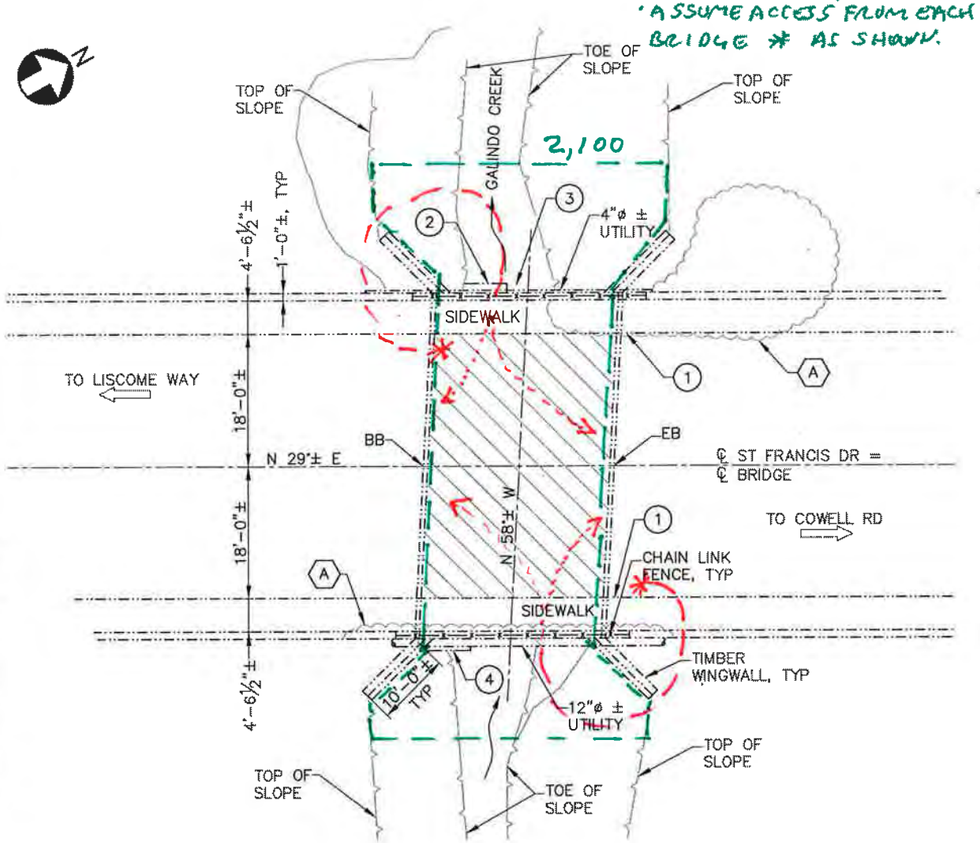
• TOTAL SIZE OF AFFECTED AREA ASSUMED = 2,100 FT²

• ASSUME ACCESS FROM EACH END OF BRIDGE * AS SHOWN.



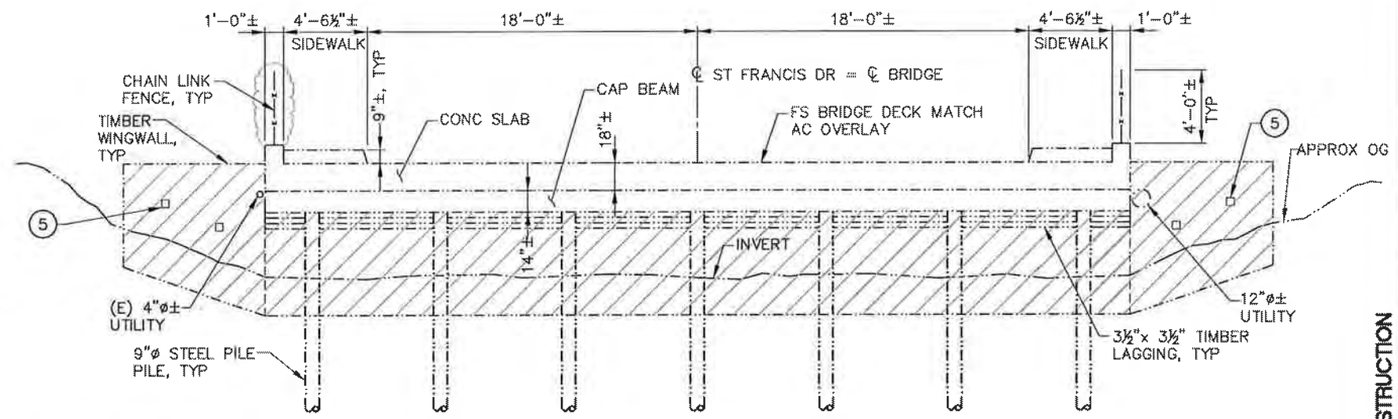
ABUTMENT 1

SCALE: ¼" = 1'-0"



PLAN

SCALE: 1" = 10'



ABUTMENT 2

SCALE: ¼" = 1'-0"

REPAIR LEGEND:

- SHOTCRETE LAGGING
- METHACRYLATE DECK SEAL
- (1) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
- (2) REMOVE CONCRETE OBSTRUCTION
- (3) PLACE BROKEN CONCRETE TO FILL LOCAL SCOUR HOLE
- (4) REPAIR/REHABILITATE RSP
- (5) SOIL NAILS

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC
- (A) HEAVY VEGETATION

1. WORK ON DECK:
   - ACCOMPLISHED BY LANE CLOSURES (ONE AT A TIME)
2. WORK BELOW DECK (SINGLE SPAN FLAT-SLAB BRIDGE)
   - THIS BRIDGE IS LOCATED IN A RESIDENTIAL AREA WITH A HOME AT EACH CORNER.
   - WORK WILL MOSTLY BE BY HAND USING A PUMP TO PLACE SHOTCRETE LAGGING & SMALL MOBIL DRILL RIG TO PLACE SOIL NAILS

* • CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS, CONES & OTHER SAFETY MEASURES.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$98.44
TOTAL COST OF BRIDGE REPAIR	=	$112,200

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0222

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	ROBERT C. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

ST FRANCIS BRIDGE OVER GALINDO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0222-STR1.dwg Time:Jun09,2011-01:06pm
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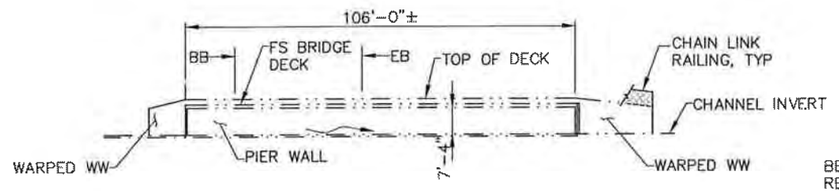
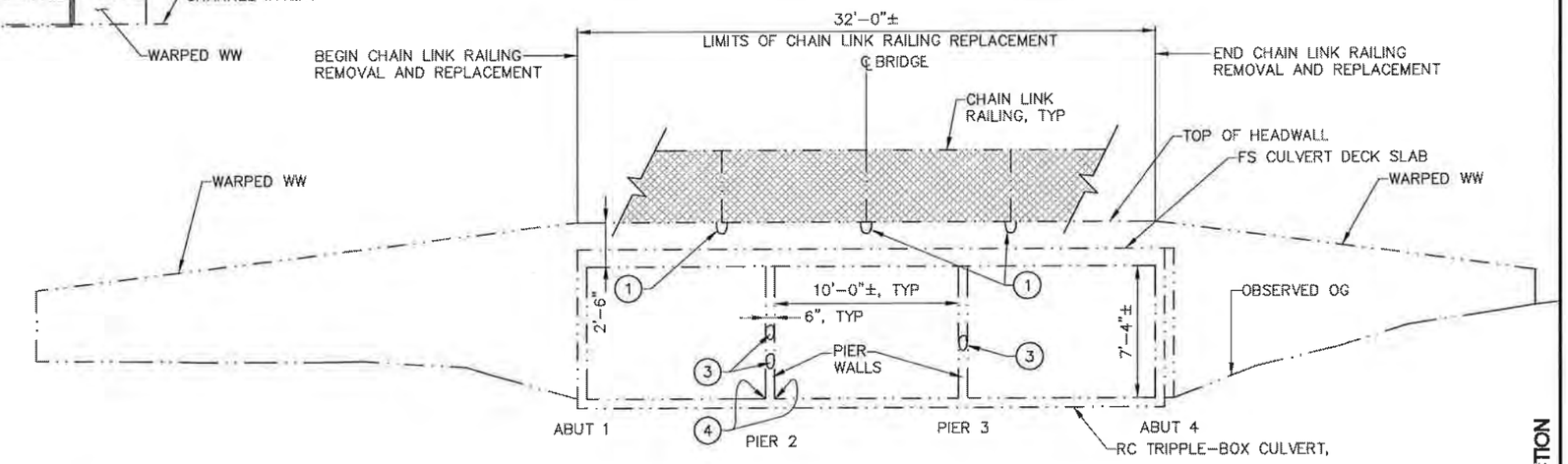


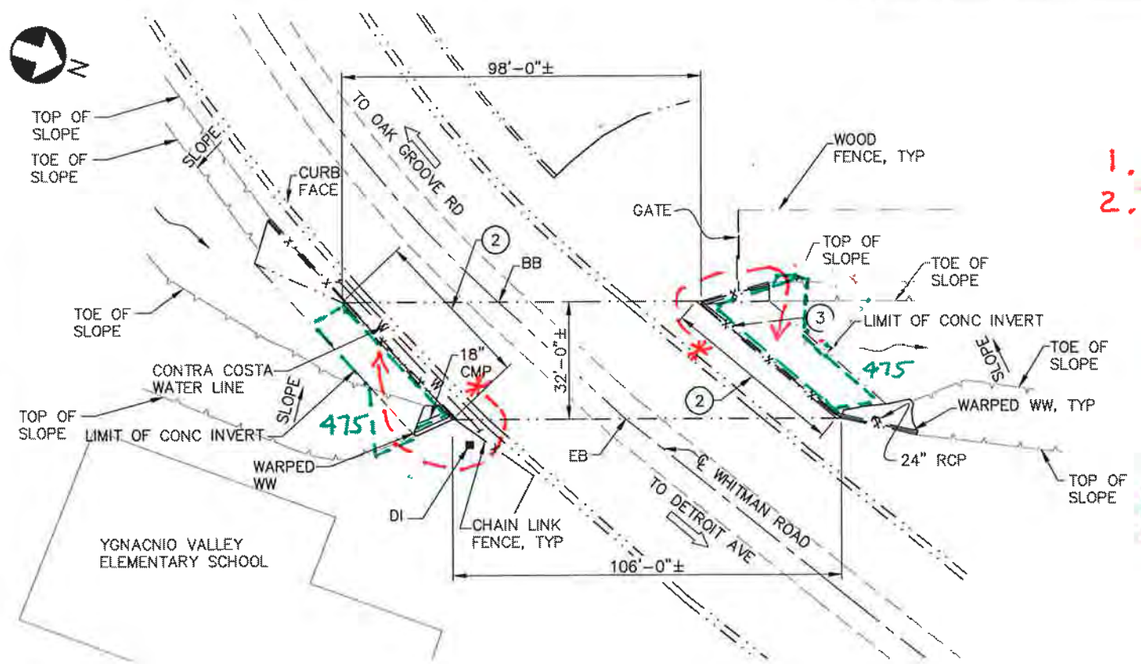
LONGITUDINAL SECTION

SCALE: 1" = 20'



ELEVATION AT UPSTREAM END OF RC CULVERT

SCALE: ¼" = 1'-0"



PLAN

SCALE: 1" = 20'

1. WORK ON DECK - NONE IS REQUIRED
2. WORK BELOW DECK. (BRIDGE IS A THREE CELL BURRIED CULVERT)
   - WORK WILL BE BY HAND USING A LADDER WHERE REQUIRED.

* - CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM STREET, WHICH WILL ALSO SERVE AS THE MOBILIZATION AREA BY USING SIGNS, CONES, & OTHER SAFETY MEASURES.

- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT^2.
- ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.

REPAIR LEGEND:

1. SPALL REPAIR AT FENCE POST POCKET
2. REMOVE & REPLACE CHAIN LINK RAILING POST
3. SPALL AND ROCK POCKET REPAIR
4. REPAIR BASE OF PIER 2 AT INVERT

LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$16.53
TOTAL COST OF BRIDGE REPAIR	=	$49,300

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0224

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED

PROJECT ENGINEER

REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WHITMAN ROAD BRIDGE OVER SDM CHANNEL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET-28C0224-ST01.dwg Time:Jun09,2011-01:10pm
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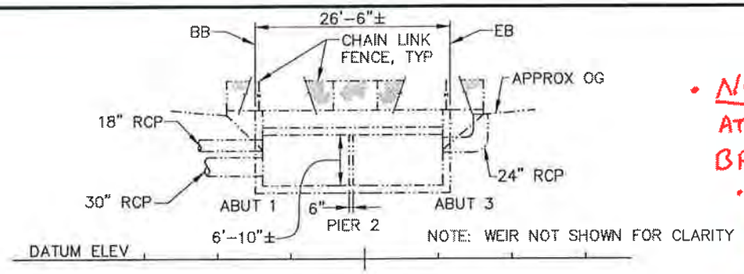
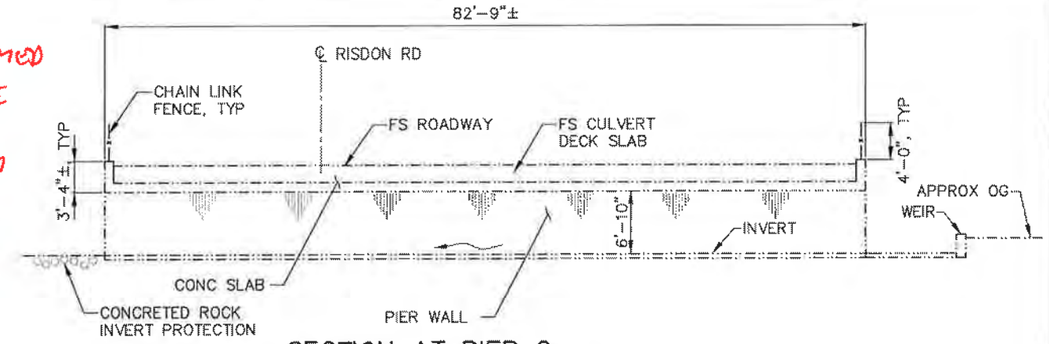


ELEVATION

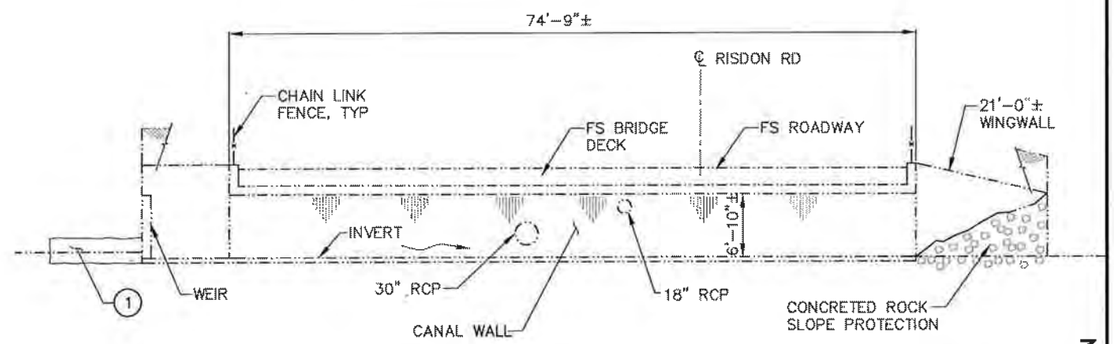
SCALE: 1" = 10'

- NO WORK WILL BE PERFORMED AT THIS BRIDGE UNDER THE BPMP.
  - CALTRANS HAS DETERMINED THAT THE REPAIR WORK NOTED FOR THE CONCRETED RSP IS BEYOND THE LIMITS OF THE BRIDGE STRUCTURE (ASSOCIATED W/ WEIR RATHER THAN BRIDGE)



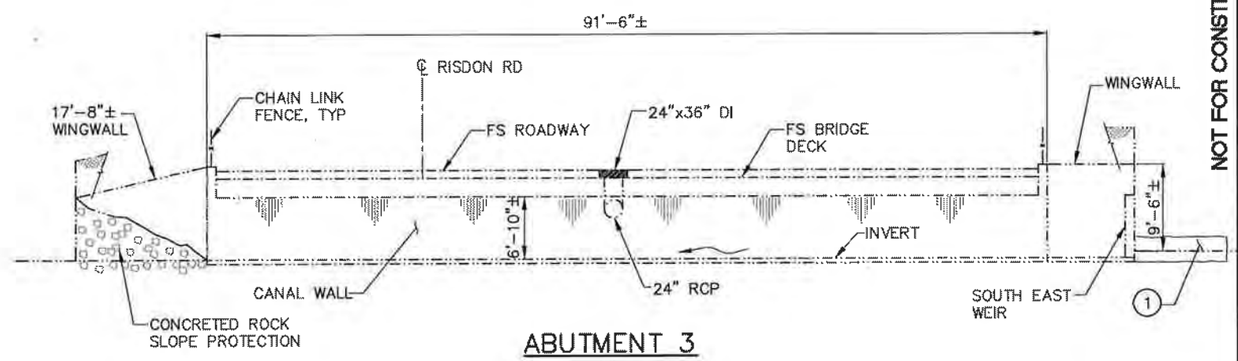
SECTION AT PIER 2

SCALE: ⅛" = 1'-0"



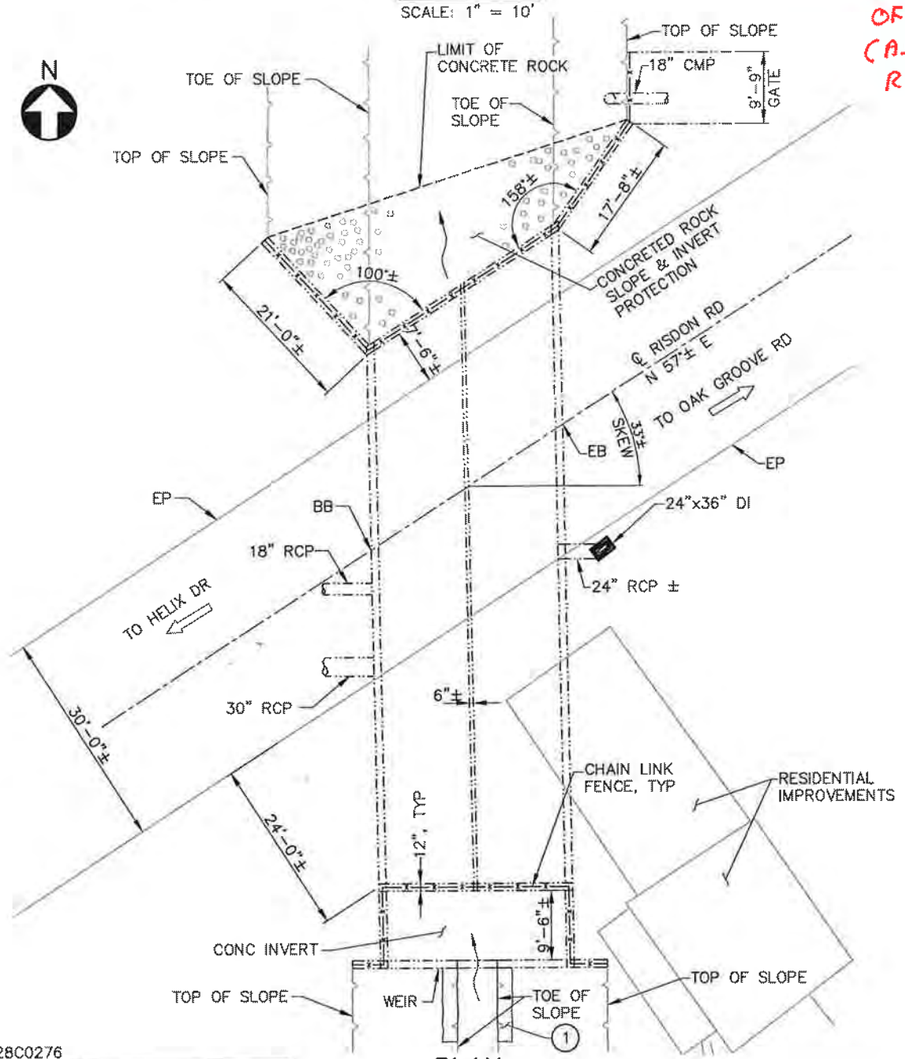
ABUTMENT 1

SCALE: ⅛" = 1'-0"



ABUTMENT 3

SCALE: ⅛" = 1'-0"



PLAN

SCALE: 1" = 10'

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

LEGEND:

FLOW DIRECTION

TRAFFIC DIRECTION

REPAIR LEGEND:

(1) REPAIR CONCRETED RSP (BY OTHERS)

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0276

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

RISDON ROAD BRIDGE OVER SDM CHANNEL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0276-ST01.dwg Time:Jun09,2011-01:11pm
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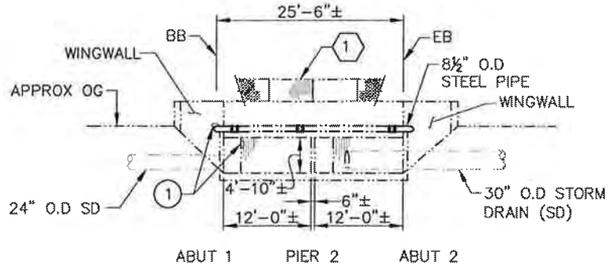
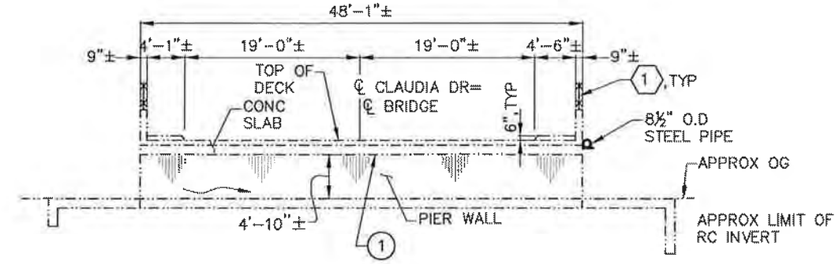


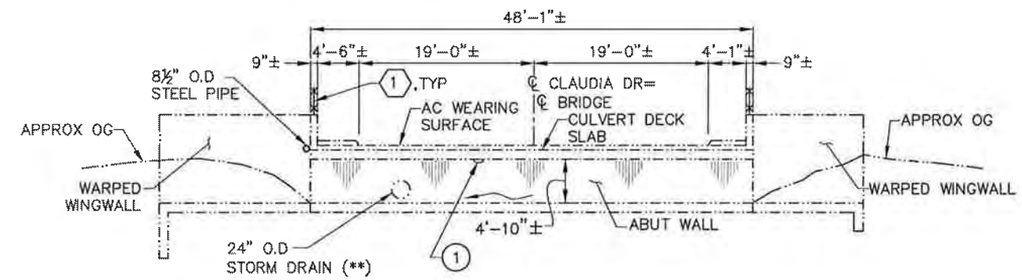
ELEVATION

SCALE: 1" = 10'



SECTION AT PIER 2

SCALE: ⅛" = 1'-0"

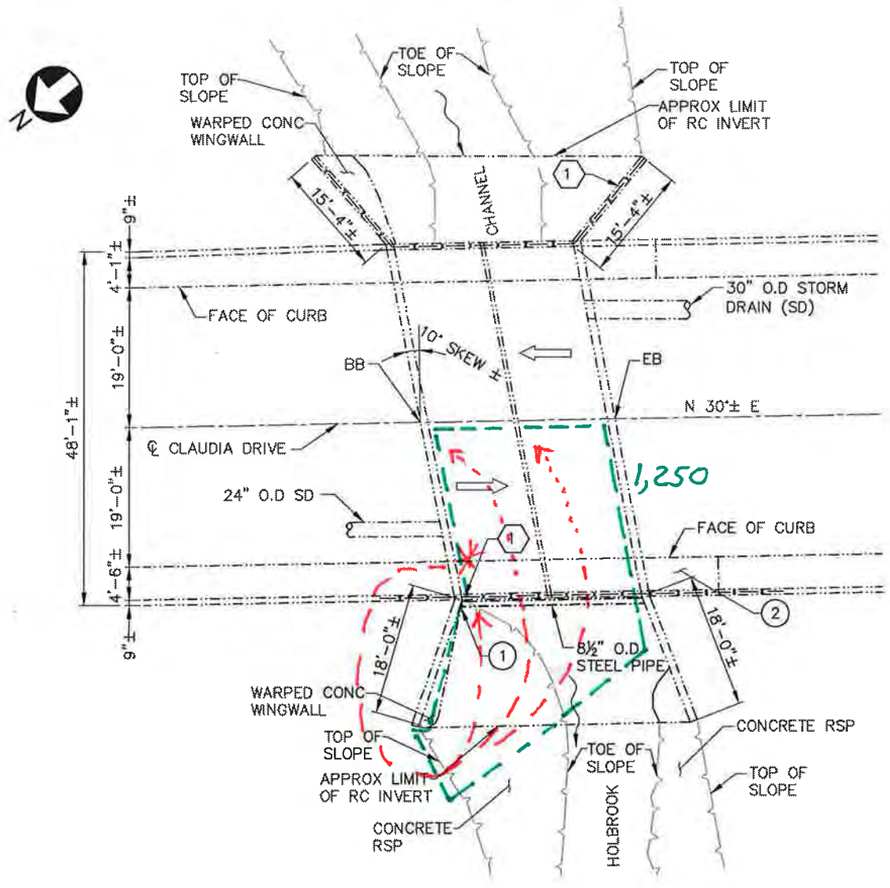


NOTE:
(**) 30" O.D STORM DRAIN AT ABUT 2

(ABUT 1 SHOWN, ABUT 2 SIMILAR AND OPPOSITE)

ABUTMENT 1

SCALE: ⅛" = 1'-0"



PLAN

SCALE: 1" = 10'

REPAIR LEGEND:

(1) SPALL AND ROCK POCKET REPAIRS

(2) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)

LEGEND:

STREAM FLOW DIRECTION

DIRECTION OF TRAFFIC

(1) 3 FT HIGH CHAIN LINK FENCE

1. WORK ON DECK:
   - MINOR SIDEWALK: JOINT REPAIR ONLY
2. WORK BELOW DECK:
   - THIS BRIDGE IS LOCATED IN A RESIDENTIAL AREA WITH A HOME AT EACH CORNER.
   - WORK WILL BE BY HAND USING A LADDER IF REQUIRED

* - CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS, CONES AND OTHER SAFETY MEASURES.

!! • INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO AREA = SIZE OF AREA IN FT²
- ASSUME ACCESS IS FROM ROUTE * SHOWN.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$41.99
TOTAL COST OF BRIDGE REPAIR	=	$51,500

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0278

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CLAUDIA DRIVE BRIDGE OVER HOLBROOK CHANNEL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City of Concord\CADD\Structure\SHEET\28C0278-ST01.dwg Time:Jun09,2011-01:12pm
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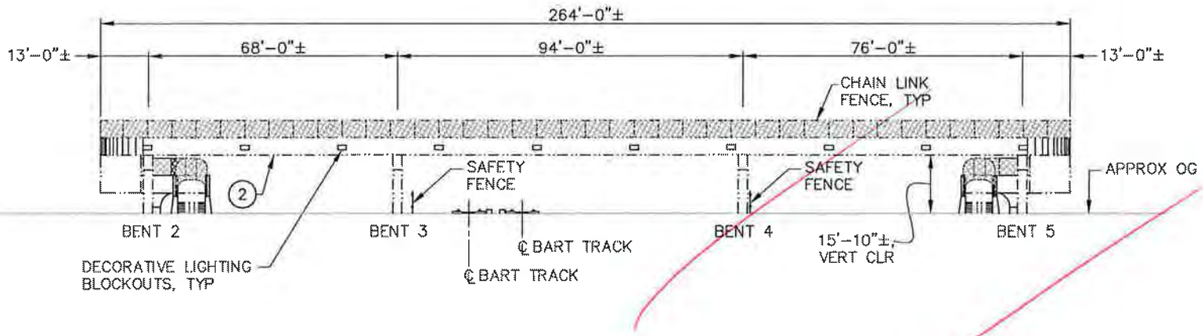
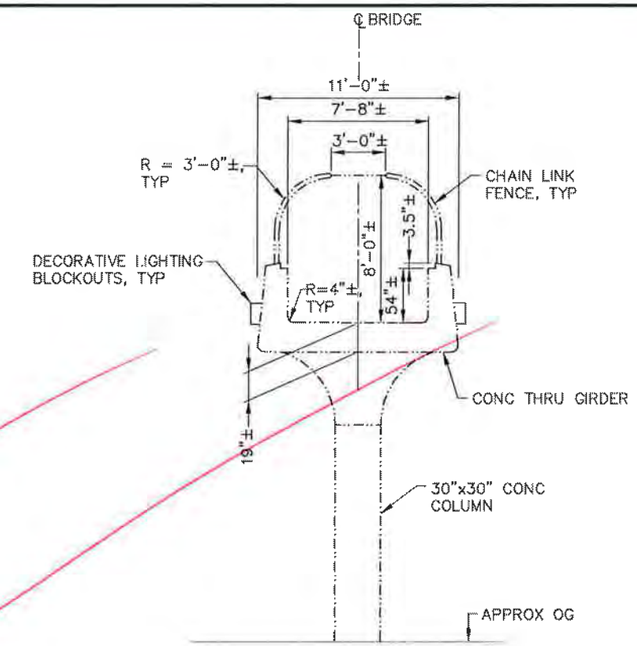
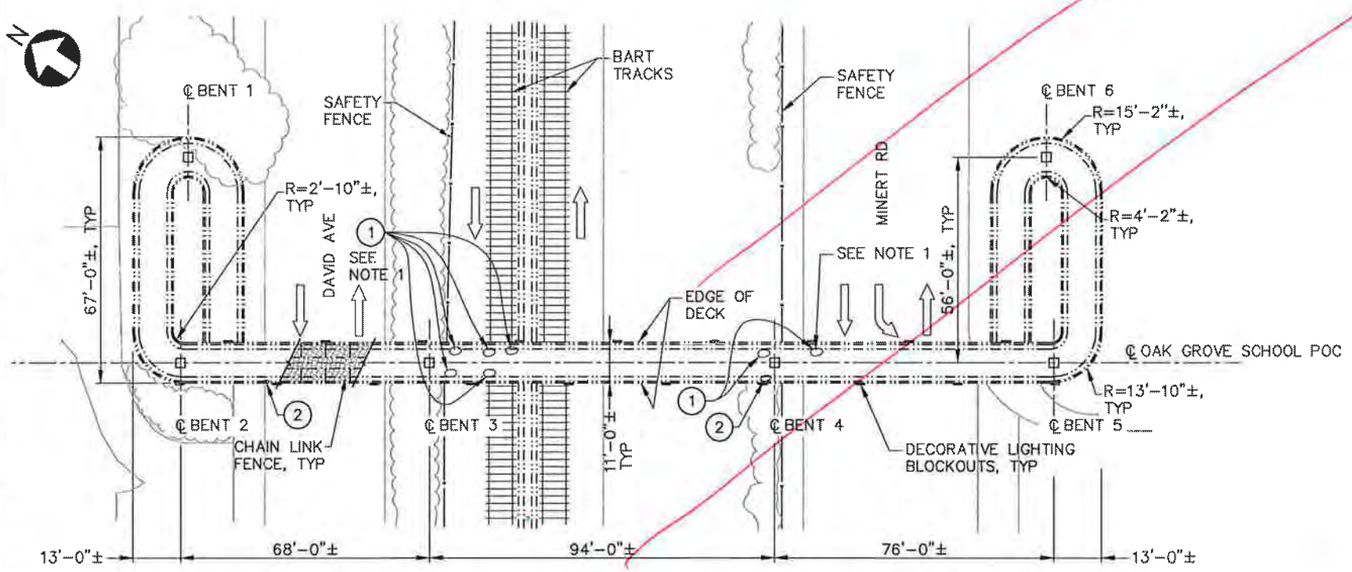


ELEVATION
SCALE: 1" = 20'



TYPICAL SECTION
SCALE: ¼" = 1'-0"



PLAN
SCALE: 1" = 20'

- THIS BRIDGE HAS BEEN REMOVED FROM THE BPMP
- CALTRANS HAS DETERMINED THAT P.O.C.'S DO NOT QUALIFY FOR BPMP FUNDING.

NOT FOR CONSTRUCTION

REPAIR LEGEND:

(1) REPAIR DECK SPALL

(2) SPALL AND ROCK POCKET REPAIRS

LEGEND:

TRAFFIC DIRECTION

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$3.68
TOTAL COST OF BRIDGE REPAIR	=	$10,700

BRIDGE NO: 28C0353

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

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Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

OAK GROVE SCHOOL POC
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City of Concord\CADD\Structure\SHEET\28C0353-ST01.dwg Time:Jun09,2011-01:13pm
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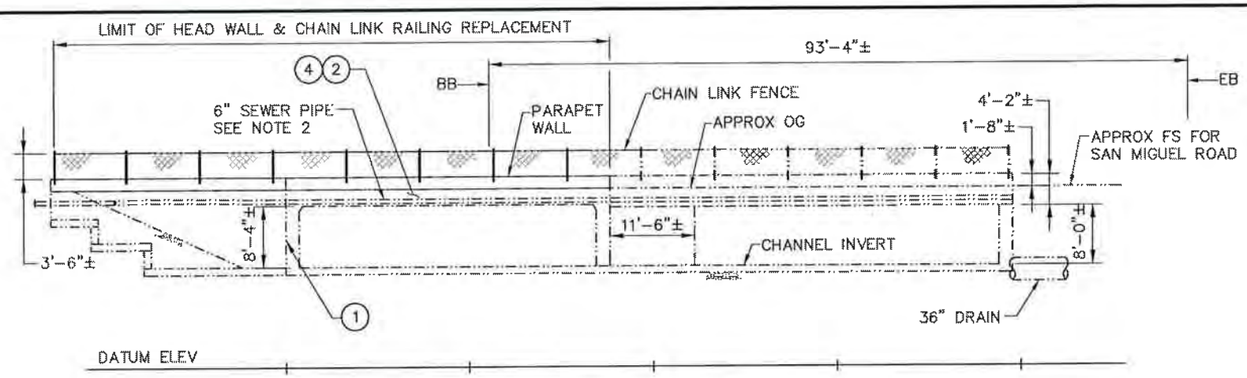


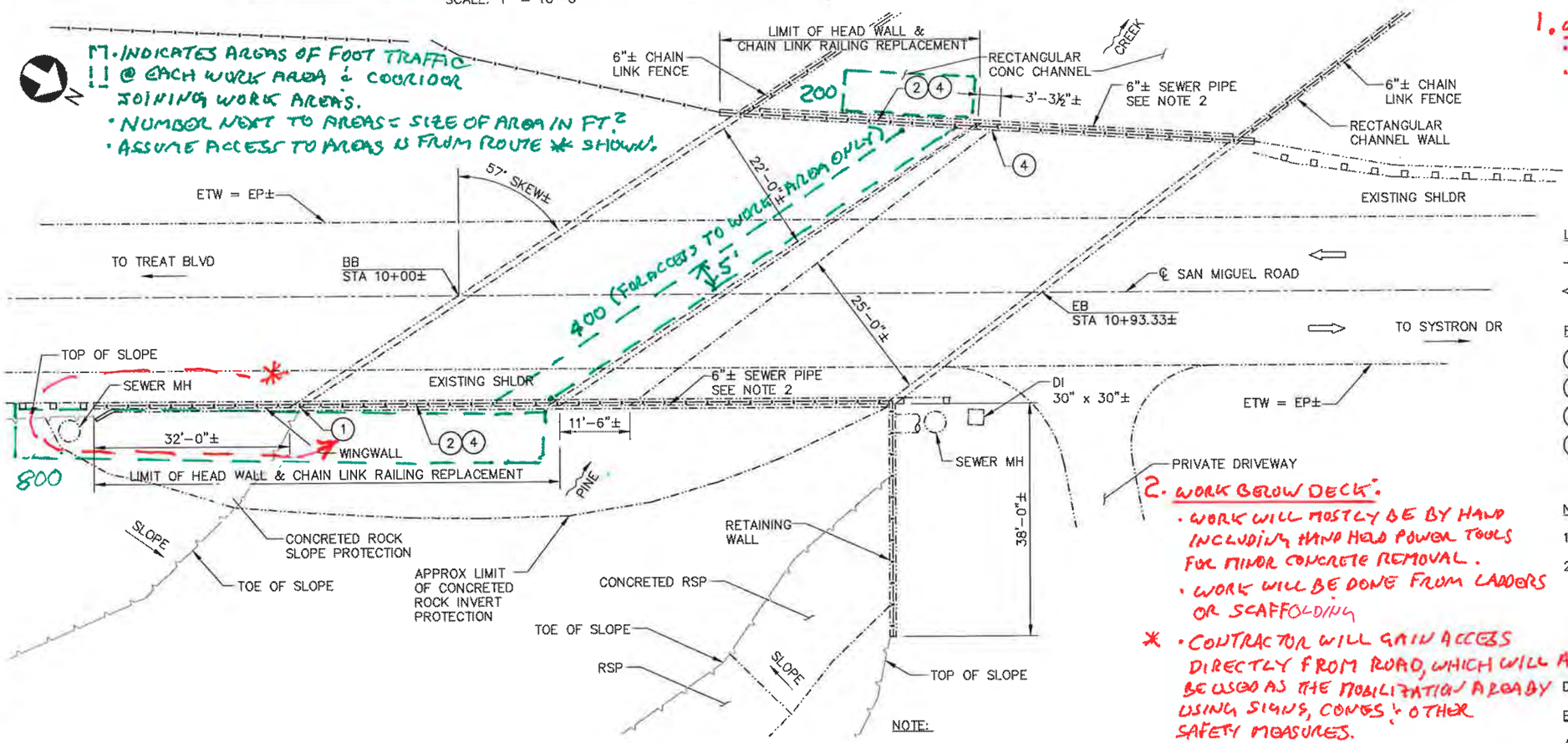
ELEVATION AT UPSTREAM END OF RC CULVERT

SCALE: 1" = 10'-0"'

TYPICAL SECTION

SCALE: 1" = 5'-0"

1. WORK ON DECK (BURIED CULVERT TYPE BRIDGE)
   - CONCRETE BARRICA & FENCE REPAIR ONLY
   - ACCOMPLISHED FROM WIDE/GRAVEL SHOULDERS.



PLAN

SCALE: 1" = 10'-0"'

2. WORK BELOW DECK:
   - WORK WILL MOSTLY BE BY HAND INCLUDING HAND HELD POWER TOOLS FOR MINOR CONCRETE REMOVAL.
   - WORK WILL BE DONE FROM LADDERS OR SCAFFOLDING
   - * CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM ROAD, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS, CONES & OTHER SAFETY MEASURES.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. REPAIR JOINT BETWEEN BOX AND RW
2. REPLACE HEADWALL (PORTION)
3. SPALL AND ROCK POCKET REPAIRS
4. REMOVE AND REPLACE CHAIN LINK FENCE

NOTES:

1. SPALLS AT FENCE POST POCKETS
2. SEWER PIPE PROTECT IN PLACE

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$33.17
TOTAL COST OF BRIDGE REPAIR	=	$145,500

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0357

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	P. ARIGO		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA, 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

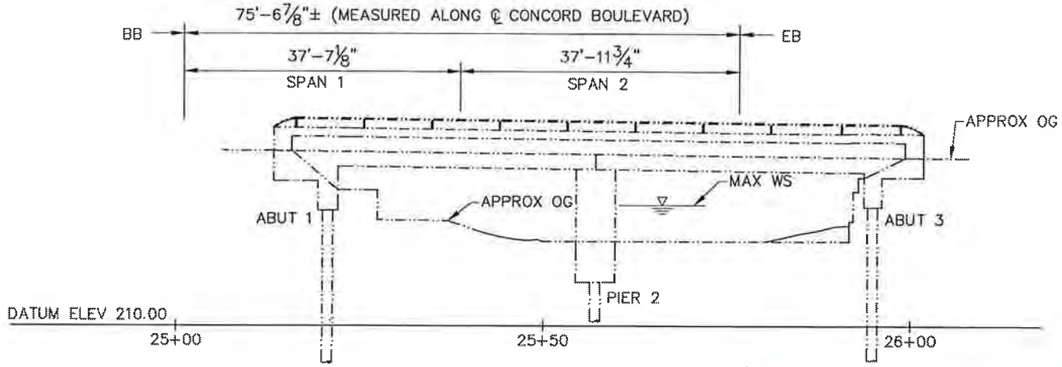
CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

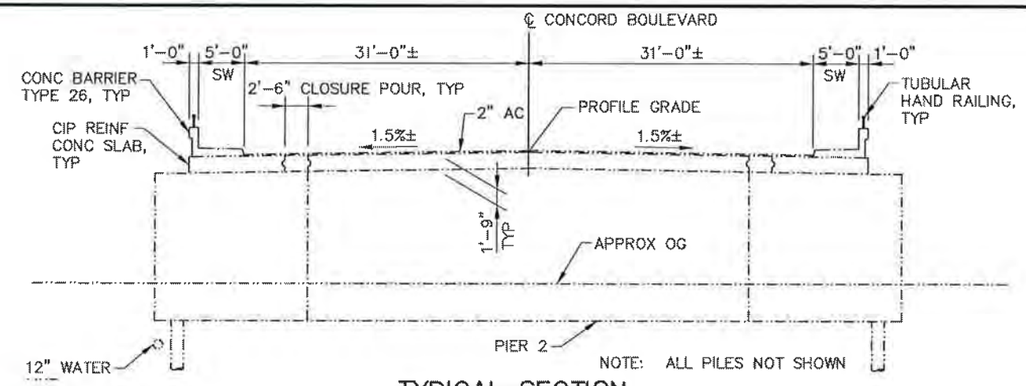
SAN MIGUEL ROAD BRIDGE OVER PINE CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX



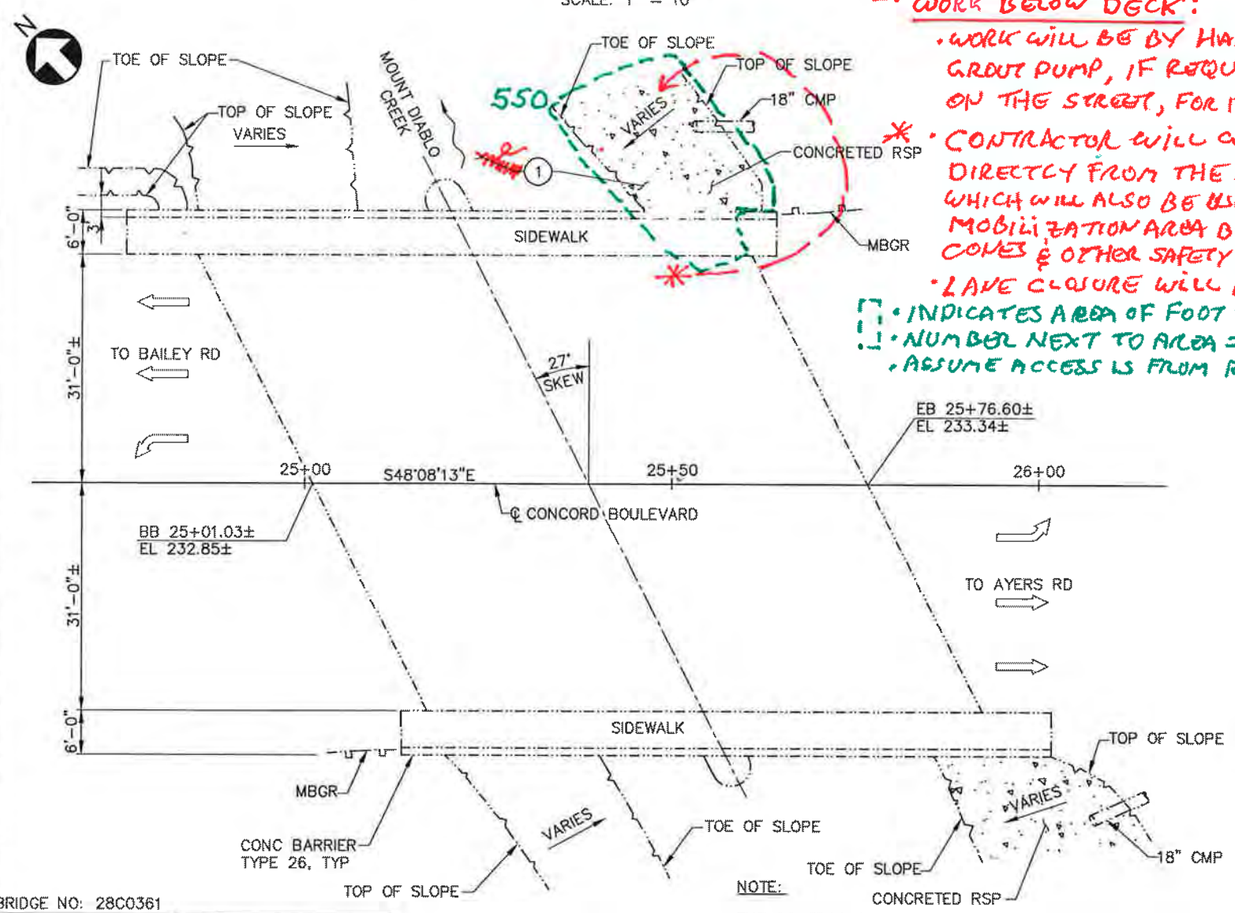
ELEVATION
SCALE: 1" = 10'



TYPICAL SECTION
SCALE: 1/8" = 1'-0"

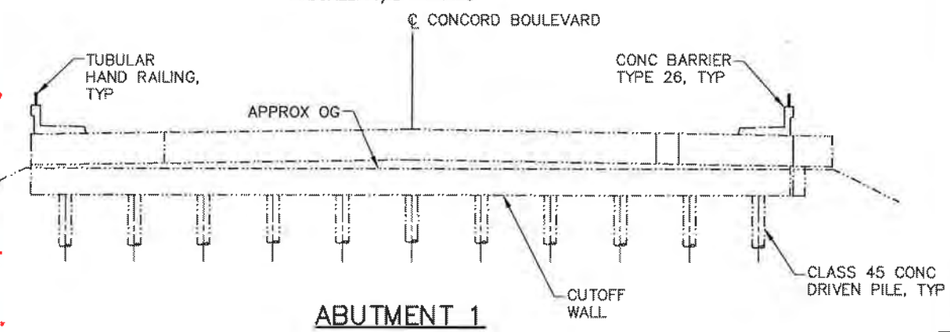
1. WORK ON DECK: NONE IS REQUIRED
2. WORK BELOW DECK:
   - WORK WILL BE BY HAND USING A GROUT PUMP, IF REQUIRED, LOCATED ON THE STREET, FOR ITEM 1
   - * CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS CONES & OTHER SAFETY MEASURES.
   - LANE CLOSURE WILL BE REQUIRED.

[ ] • INDICATES AREA OF FOOT TRAFFIC
• NUMBER NEXT TO AREA = SIZE OF AREA IN FT²
• ASSUME ACCESS IS FROM ROUTE * SHOWN.

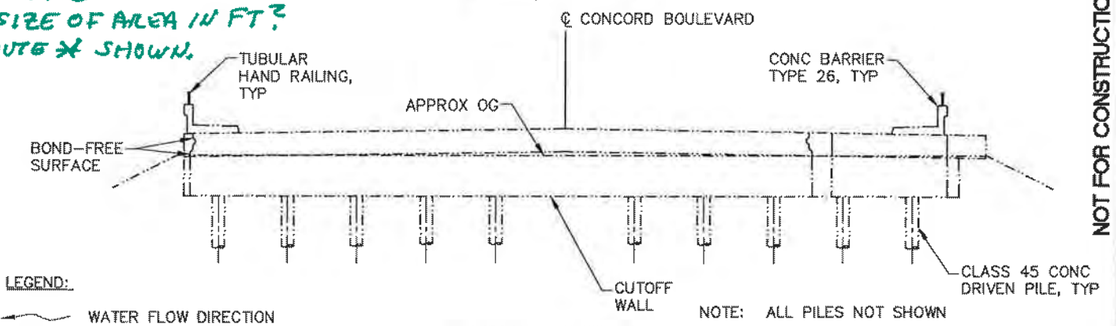


PLAN
SCALE: 1" = 10'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY



ABUTMENT 1
SCALE: 1/8" = 1'-0"



ABUTMENT 3
SCALE: 1/8" = 1'-0"

LEGEND:
- WATER FLOW DIRECTION
- TRAFFIC DIRECTION

REPAIR LEGEND:
1 REPAIR CONCRETED RSP

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$9.88
TOTAL COST OF BRIDGE REPAIR	=	$55,200

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0361

CITY REVIEW BY:
NAME DATE
REGISTERED PROFESSIONAL ENGINEER DANEA S. COMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
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DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

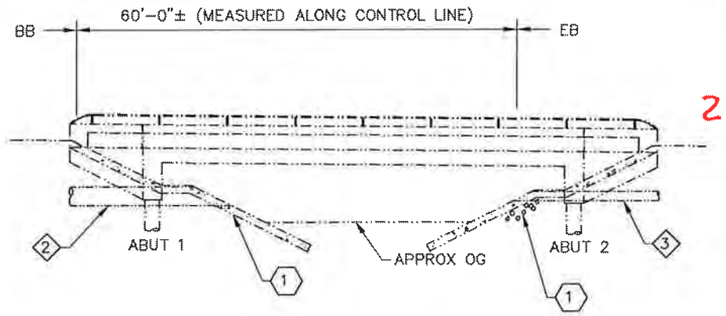
CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM
CONCORD BLVD BRIDGE OVER MOUNT DIABLO CREEK
GENERAL PLAN

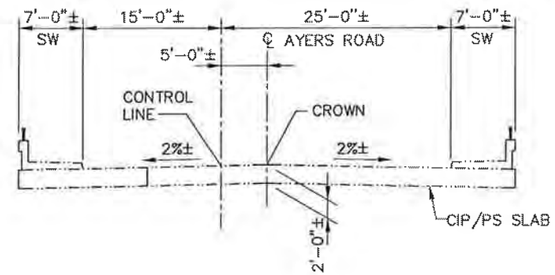
ST-XX
SHEET X OF XX

1. WORK ON DECK:
- ACCOMPLISHED BY LANE CLOSURE (ONE AT A TIME) TO PLACE DECK SEAL
- CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT IN CLOSED LANE.

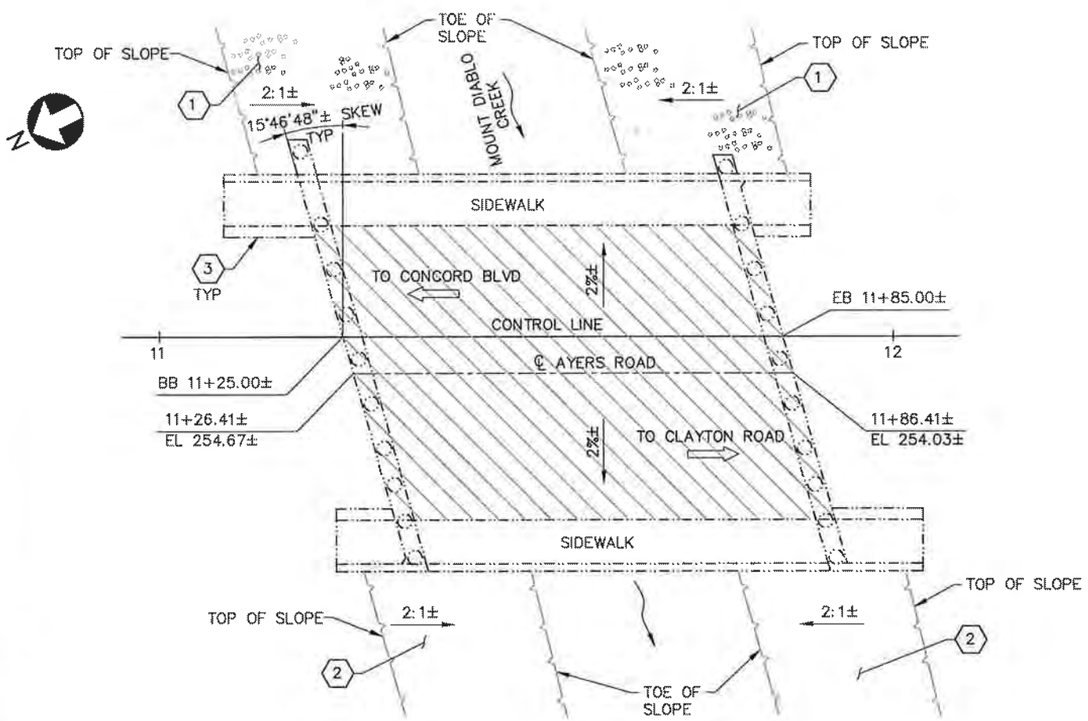
2. WORK BELOW DECK:
- NO WORK IS REQUIRED.



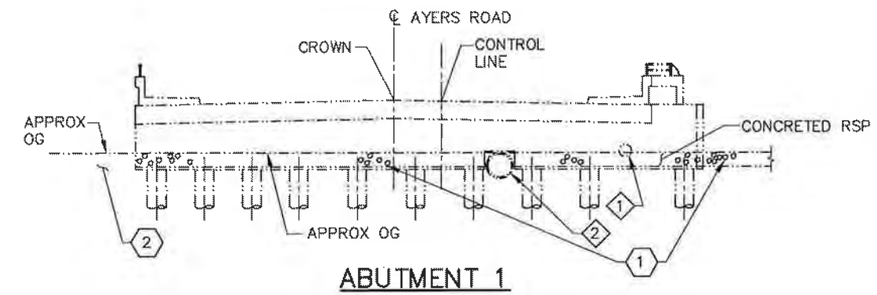
ELEVATION
SCALE: 1" = 10'



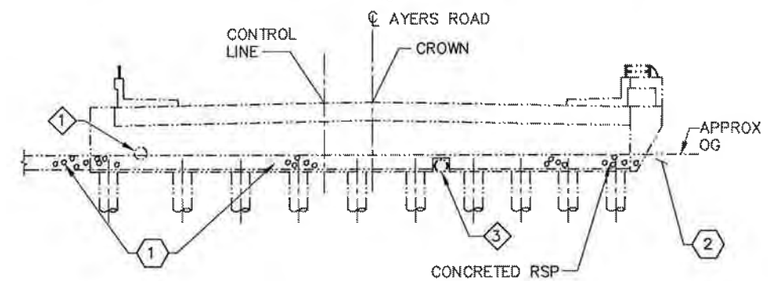
TYPICAL SECTION
SCALE: ⅛" = 1'-0"



PLAN
SCALE: 1" = 10'



ABUTMENT 1
SCALE: ⅛" = 1'-0"



ABUTMENT 2
SCALE: ⅛" = 1'-0"

UTILITY SCHEDULE:

1. 16" ø WATER MAIN
2. 30" ø RCP STORM DRAIN
3. 15" ø RCP STORM DRAIN

REPAIR LEGEND:

METHACRYLATE DECK SEAL

LEGEND:

- DIRECTION OF TRAFFIC
- WATER FLOW DIRECTION
- (1) CONCRETED ROCK SLOPE PROTECTION
- (2) VEGETATED SLOPE
- (3) CONCRETE GUTTER

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$4.41
TOTAL COST OF BRIDGE REPAIR	=	$14,300

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0362

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
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DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. LEE		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

AYERS ROAD BRIDGE OVER MOUNT DIABLO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

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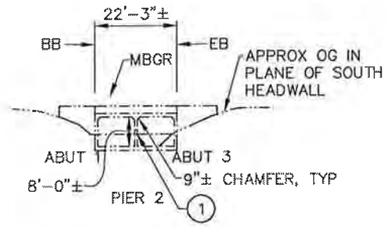
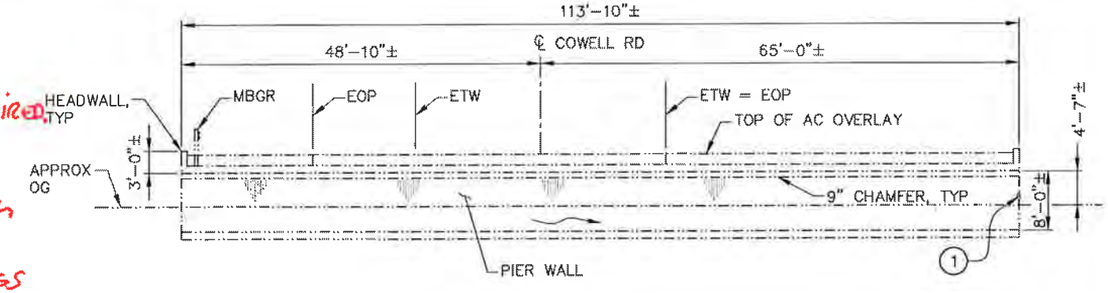


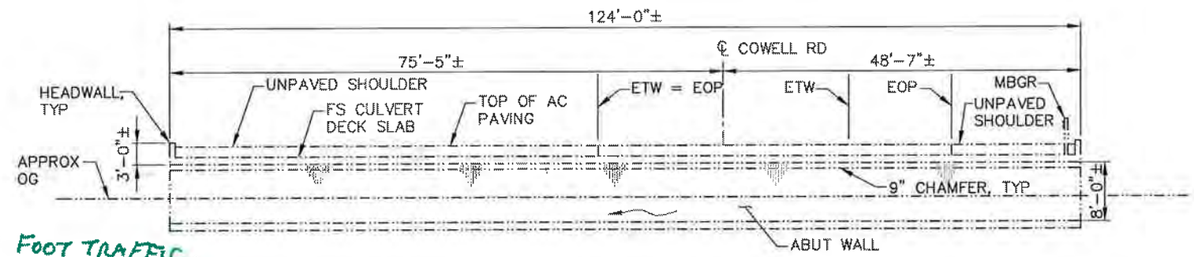
ELEVATION
SCALE: 1" = 20'

1. WORK ON DECK: NONE IS REQUIRED.
2. WORK BELOW DECK:
   - WORK WILL BE BY HAND, USING A LADDER IF REQUIRED.

*: CONTRACTOR WILL GAIN ACCESS THROUGH A DIRT PARKING AREA ADJACENT TO THE STREET, WHICH WILL ALSO SERVE AS THE MOBILIZATION AREA.

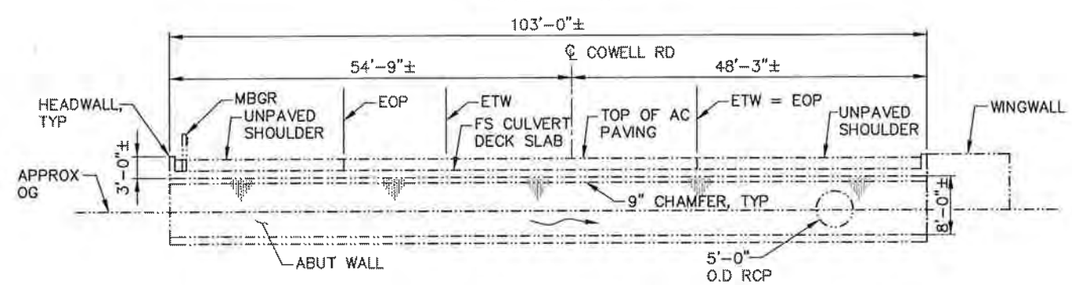


SECTION AT PIER 2
SCALE: 1" = 10'

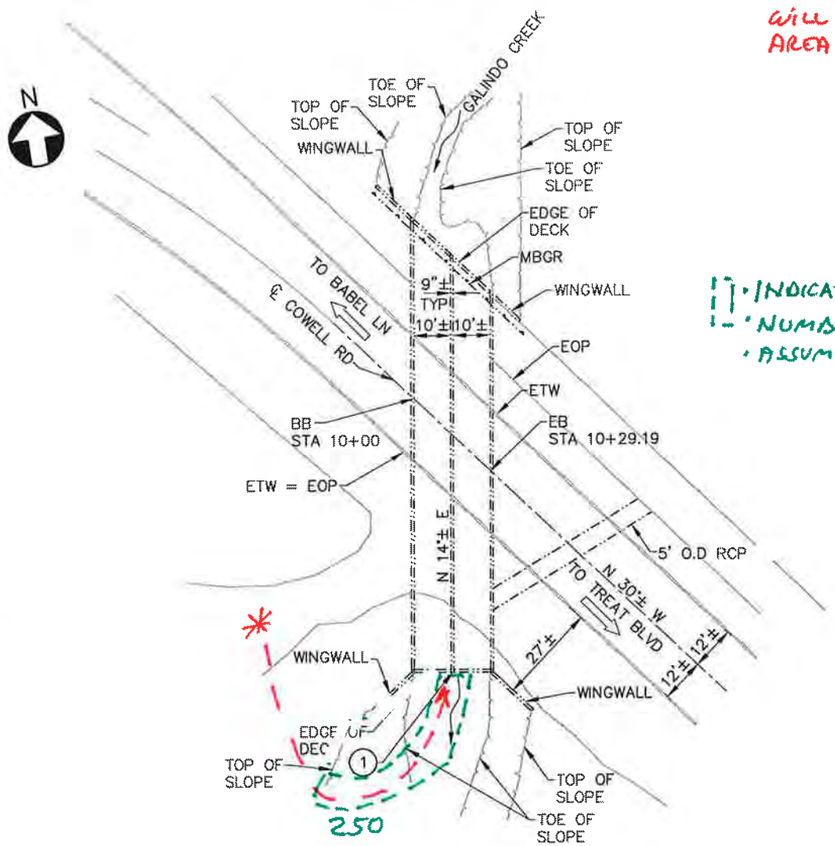


ABUTMENT 1
SCALE: 1" = 10'

- INDICATES AREA OF FOOT TRAFFIC.
- NUMBER NEXT TO AREA = SIZE OF AREA IN FT.^{2}
- ASSUME ACCESS IS FROM ROUTE * SHOWN.



ABUTMENT 3
SCALE: 1" = 10'



PLAN
SCALE: 1" = 20'

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

BRIDGE NO: 28C0427

LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

REPAIR LEGEND:

(1) REPAIR CONCRETE SPALL

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$2.17
TOTAL COST OF BRIDGE REPAIR	=	$5,500

NOT FOR CONSTRUCTION

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMEL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

COWELL ROAD BRIDGE OVER GALINDO CREEK GENERAL PLAN

ST-XX

SHEET X OF XX

P:\:City of Concord\CADD\Structure\SHEET\28C0427-ST01.dwg Time:Jun06,2011-01:17pm
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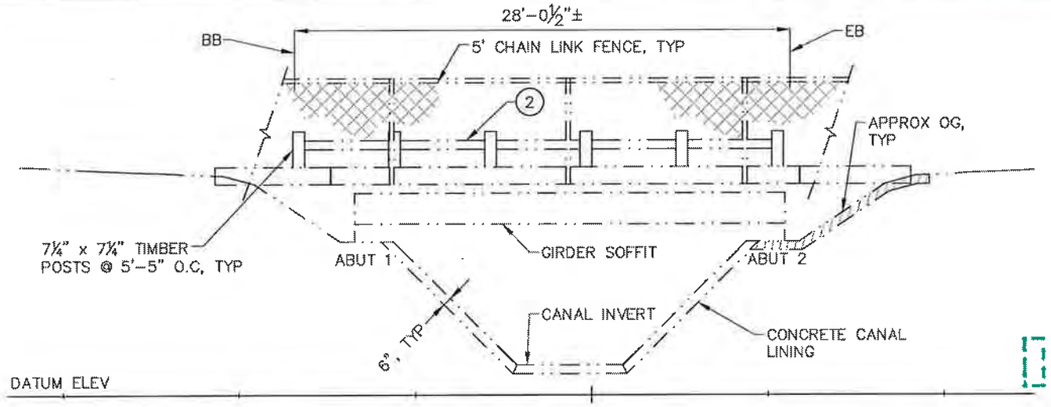
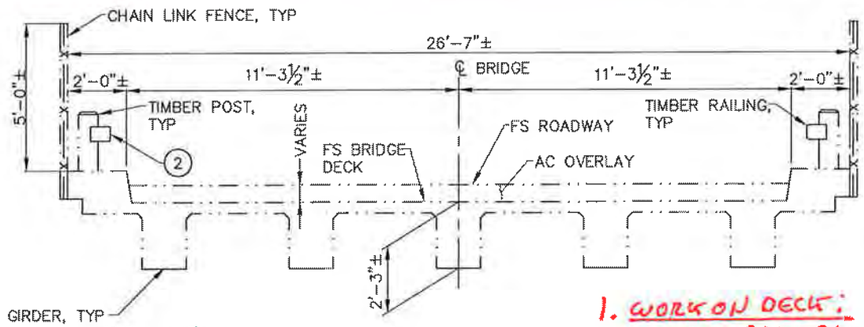


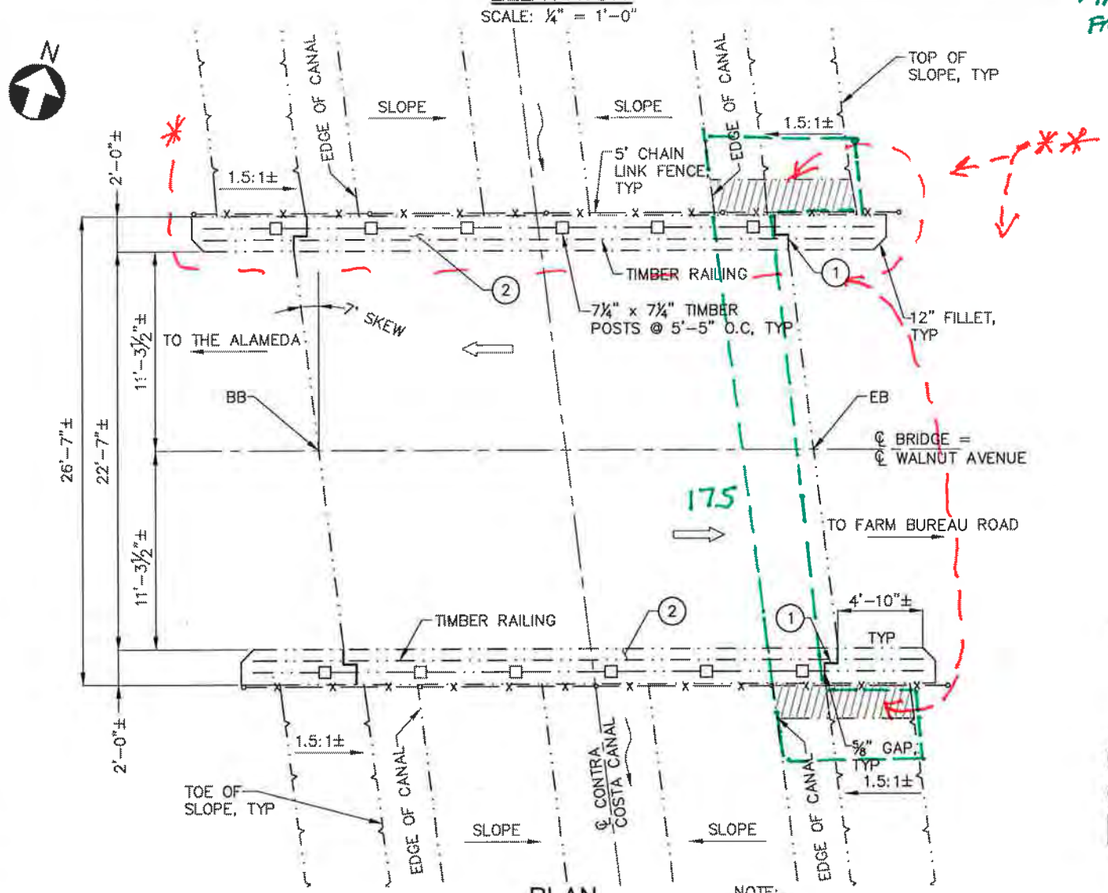
ELEVATION
SCALE: ¼" = 1'-0"



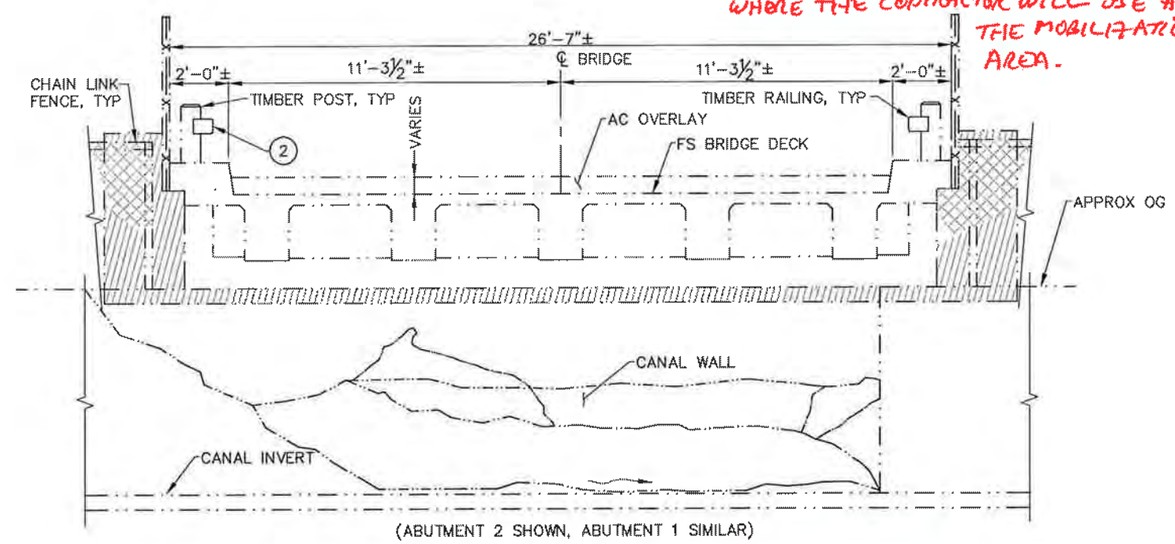
TYPICAL SECTION
SCALE: ⅜" = 1'-0"

- INDICATES AREA OF FOOT TRAFFIC
- NUMBER NEXT TO AREA = SIZE OF AREA IN FT²
- ASSUME ACCESS TO AREA IS FROM ROUTES * OR ** SHOWN.

1. WORK ON DECK:
- TIMBER RAIL PAINTING & JOINT SEAL REPAIR WILL BE ACCOMPLISHED BY HAND CARRYING TOOLS & MATERIALS TO THE BRIDGE FROM THE STREET FORMING THE ADJACENT 'T' INTERSECTION WHERE THE CONTRACTOR WILL USE AS THE MOBILIZATION AREA.



PLAN
SCALE: ¼" = 1'-0"



(ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)

ABUTMENT 2
SCALE: ⅜" = 1'-0"

NOT FOR CONSTRUCTION

LEGEND:

WATER FLOW DIRECTION

TRAFFIC DIRECTION

REPAIR LEGEND:

1 CLEAN AND SEAL JOINT

2 REMOVE AND REPLACE TIMBER RAILING

FULL SLOPE PAVING

2. WORK BELOW DECK:
- SAME AS FOR 1. ABOVE.
* - IN ADDITION, LANE CLOSURE MAY BE REQUIRED FOR GROUT PUMP & CONCRETE TRUCK USING SIGNS, CONES AND OTHER SAFETY MEASURES.
** - MAY OBTAIN AGREEMENT W/OWNER OF WIDE GRAVEL DRIVE FOR TEMP. USE.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$57.73
TOTAL COST OF BRIDGE REPAIR	=	$43,000

NOTE:

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

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

BRIDGE NO: 28C0436

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WALNUT AVENUE OVER CONTRA COSTA CANAL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0436-ST01.dwg Time:Jun09,2011-01:19pm
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Appendix B – CNDDB, USFWS, and CNPS Database Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Antioch North (3812117) or Antioch South (3712187) or Benicia (3812212) or Briones Valley (3712282) or Clayton (3712188) or Diablo (3712178) or Honker Bay (3812118) or Las Trampas Ridge (3712271) or Oakland East (3712272) or Tassajara (3712177) or Vine Hill (3812211) or Walnut Creek (3712281))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Endangered	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2?	S2?	1B.2
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anniella pulchra pulchra silvery legless lizard	ARACC01012	None	None	G3G4T3T4Q	S3	SSC
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G4G5	S2	4.2
Anthicus antiochensis Antioch Dunes anthicid beetle	IICOL49020	None	None	G1	S1	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Apodemia mormo langei Lange's metalmark butterfly	IILEPH7012	Endangered	None	G5T1	S1	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273	None	None	G5T2	S2	1B.2
Arctostaphylos pallida pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1	1B.1
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G2	S2	1B.1
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G1	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S2S3	
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S2	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G2	S2	1B.1
Callophrys mossii bayensis San Bruno elfin butterfly	IILEPE2202	Endangered	None	G4T1	S1	
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Campanula exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T3T4	S2	2B.1
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Clarkia franciscana Presidio clarkia	PDONA050H0	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coelus gracilis San Joaquin dune beetle	IICOL4A020	None	None	G1	S1	
Cordylanthus nidularius Mt. Diablo bird's-beak	PDSCR0J0F0	None	Rare	G1	S1	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Cryptantha hooveri Hoover's cryptantha	PDBOR0A190	None	None	GH	SH	1A
Danaus plexippus monarch butterfly	IILEPP2010	None	None	G5	S3	
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G3G4T1	S1	
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T3Q	S3	WL
Eriastrum ertterae Lime Ridge eriastrum	PDPLM030F0	None	None	G1	S1	1B.1
Eriogonum luteolum var. caninum Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
Eriogonum nudum var. psychicola Antioch Dunes buckwheat	PDPGN0849Q	None	None	G5T1	S1	1B.1
Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0	None	None	G2	S2	1B.1
Erysimum capitatum var. angustatum Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Eucerceris ruficeps redheaded sphecid wasp	IIHYM18010	None	None	G1G3	S1S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S2S3	SSC
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S1	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T2	S2	SSC
Grimmia torenii Toren's grimmia	NBMUS32330	None	None	G2	S2	1B.3
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	FP
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1	
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2	S2	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T2	S2?	1B.1
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Idiostatus middlekauffi Middlekauff's shieldback katydid	IIORT31010	None	None	G1G2	S1	
Isocoma arguta Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
Juglans hindsii Northern California black walnut	PDJUG02040	None	None	G1	S1	1B.1
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S2S3	
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10050	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Madia radiata showy golden madia	PDAST650E0	None	None	G2	S2	1B.1
Malacothamnus hallii Hall's bush-mallow	PDMAL0Q0F0	None	None	G2Q	S2	1B.2
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Meconella oregana Oregon meconella	PDPAP0G030	None	None	G2G3	S1	1B.1
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K	None	None	G5T2	S2	SSC
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2?	SSC
Melospiza melodia samuelis San Pablo song sparrow	ABPBXA301W	None	None	G5T2?	S2?	SSC
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G3	S1S3	
Microcina leei Lee's micro-blind harvestman	ILARA47040	None	None	G1	S1	
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G2G3	S2S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Myrmosula pacifica Antioch multilid wasp	IIHYM15010	None	None	GH	SH	
Navarretia gowenii Lime Ridge navarretia	PDPLM0C120	None	None	G1	S1	1B.1
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Maritime Chaparral Northern Maritime Chaparral	CTT37C10CA	None	None	G1	S1.2	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Perdita scitula antiochensis Antioch andrenid bee	IIHYM01031	None	None	G1T1	S1	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0	None	None	G1	S1	1B.2
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Philanthus nasalis Antioch specid wasp	IIHYM20010	None	None	G1	S1	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plagiobothrys diffusus San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	G2	S2	SSC
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Rallus longirostris obsoletus California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Sanicula saxatilis rock sanicle	PDAPI1Z0H0	None	Rare	G2	S2	1B.2
Scapanus latimanus parvus Alameda Island mole	AMABB02031	None	None	G5T1Q	S1	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3?	S2	2B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G1	S1	1B.1
Sorex ornatus sinuosus Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
Speyeria callippe callippe callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
Sphecodogastra antiochensis Antioch Dunes halcitid bee	IIHYM78010	None	None	G1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Stabilized Interior Dunes Stabilized Interior Dunes	CTT23100CA	None	None	G1	S1.1	
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus hispidus Mt. Diablo jewelflower	PDBRA2G0M0	None	None	G1	S1	1B.3
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S3	2B.2
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant garter snake	ARADB36150	Threatened	Threatened	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G1	S1	1B.2
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G5	S3	2B.3
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 152

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
ANTIOCH SOUTH (464A)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Amsinckia grandiflora
large-flowered fiddleneck (E)

Lasthenia conjugens
Contra Costa goldfields (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.

- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
BENICIA (482C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Syncaris pacifica
California freshwater shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Proposed Species

Plants

Cordylanthus mollis ssp. mollis
Critical habitat, soft bird's-beak (PX)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
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- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
BRIONES VALLEY (465B)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Plants

Arctostaphylos pallida
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Holocarpha macradenia
Santa Cruz tarplant (T)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
CLAYTON (464B)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Amsinckia grandiflora
large-flowered fiddleneck (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
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- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
DIABLO (464C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus

Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Birds

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Vulpes macrotis mutica

San Joaquin kit fox (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
HONKER BAY (481C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Elaphrus viridis
delta green ground beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is

being proposed for it.

- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
LAS TRAMPAS RIDGE (465D)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (T)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
OAKLAND EAST (465C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Arctostaphylos pallida
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Chorizanthe robusta var. robusta
robust spineflower (E)

Clarkia franciscana
Presidio clarkia (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.

- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
TASSAJARA (464D)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Birds

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Vulpes macrotis mutica

San Joaquin kit fox (E)

Plants

Amsinckia grandiflora

large-flowered fiddleneck (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
VINE HILL (482D)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Elaphrus viridis
delta green ground beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Syncaris pacifica
California freshwater shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)

Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.

- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
WALNUT CREEK (465A)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds
Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Plants
Lasthenia conjugens
Contra Costa goldfields (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
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- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

CNPS California Native Plant So Rare and Endangered Plant Inventory

Plant List

26 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37121H7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	1B.1	S1	G1
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergraen shrub	1B.2	S2	G5T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	1B.2	S2	G2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S34	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	1A	SH	GH
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	1B.1	S1	G1
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	4.2	S3	G3
Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	4.2	S3	G5T3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Madia radiata	showy golden madia	Asteraceae	annual herb	1B.1	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	4.3	S4	G4
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	4.2	S3	G4T3

Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	1B.2	S2	G4T2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

Suggested Citation

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Search Criteria

Found in Quad 38121A7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	1B.2	S2	G2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	1A	SH	GH
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2B.2	S2	GU
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	Polygonaceae	perennial herb	1B.1	S1	G5T1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Erysimum capitatum var. angustatum	Contra Costa wallflower	Brassicaceae	perennial herb	1B.1	S1	G5T1
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	1B.1	S1	G1
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
			perennial			

Limosella australis	Delta mudwort	Scrophulariaceae	stoloniferous herb	2B.1	S2	G4G5
Madia radiata	showy golden madia	Asteraceae	annual herb	1B.1	S2	G2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	1B.1	S2	G2
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	1B.1	S1	G5T1
Plagiobothrys hystriculus	bearded popcorn-flower	Boraginaceae	annual herb	1B.1	S2	G2
Senecio hydrophiloides	sweet marsh ragwort	Asteraceae	perennial herb	4.2	S2S3	G4G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2

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Search Criteria

Found in Quad 38122A2

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	3.1	S2	G2Q
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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20 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37122H2

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5? T3T4
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	1B.1	S1	G1
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial herb	1B.2	S3	G3
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss	1B.2	S1	G3?
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Holocarpha macradenia	Santa Cruz terplant	Asteraceae	annual herb	1B.1	S1	G1
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	4.2	S3	G3
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	4.2	S3	G3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	1B.1	S1	G2G3
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	3	S3?	G4T3Q
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Plant List

34 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37121H8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5? T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss	4.2	S2	G4G5
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	4.3	S4	G4
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G5T2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S34	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	1B.2	S2	G2
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	4.3	S4	G4
Cordylanthus nidularius	Mt. Diablo bird's-beak	Orobanchaceae	ennual herb (hemiparasitic)	1B.1	S1	G1
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3T3
Eriastrum ertterae	Lime Ridge eriastrum	Polemoniaceae	annual herb	1B.1	S1	G1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	4.3	S3	G3
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Grimmia torenii	Toren's grimmia	Grimmiaceae	moss	1B.3	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	1B.1	S1	G1

Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	1B.1	S1	G5T1
Phacelia phacelioides	Mt. Diablo phacelia	Boraginaceae	annual herb	1B.2	S1	G1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	1B.2	S2	G2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Streptanthus hispidus	Mt. Diablo jewel-flower	Brassicaceae	annual herb	1B.3	S1	G1
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb	2B.2	S3	G5T5
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2	S1	G1
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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23 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37121G8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5? T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss	4.2	S2	G4G5
Arctostaphylos auriculata	Mt. Diablo manzenita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G5T2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	1B.2	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3T3
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	1B.2	S2	G4T2
Phacelia phacelioides	Mt. Diablo phacelia	Boraginaceae	annual herb	1B.2	S1	G1

Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	1B.2	S2	G2
Streptanthus hispidus	Mt. Diablo jewel-flower	Brassicaceae	annual herb	1B.3	S1	G1
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Search Criteria

Found in Quad 38121A8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	Stata Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Erysimum capitatum var. angustatum	Contra Costa wallflower	Brassicaceae	perennial herb	1B.1	S1	G5T1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	2B.1	S2	G4G5
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	1B.1	S1	G5T1
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2

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13 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37122G1

Scientific Name	Common Name	Family	Lifeform	Rara Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
California macrophylla	round-leaved filaree	Gereniaceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	4.2	S3	G3
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	4.2	S3	G3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	1B.1	S1	G1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Bressicaceae	annual herb	1B.2	S2	G2T2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Plant List

26 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37122G2

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	1B.1	S1	G1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Chorizanthe robusta var. robusta	robust spineflower	Polygonaceae	annual herb	1B.1	S1	G2T1
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	4.3	S3	G5?T3
Clarkia franciscana	Presidio clarkia	Onagraceae	annual herb	1B.1	S1	G1
Dirca occidentalis	western leatherwood	Thymelaeaceaa	perennial deciduous shrub	1B.2	S2S3	G2G3
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	1B.2	S2	G5T2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	1B.1	S2	G2
Horkelia cuneata var. sericea	Kellogg's horkelia	Rosaceae	perennial herb	1B.1	S2?	G4T2
Leptosiphon acicularis	bristly leptosiphon	Polemoniacaaa	annual herb	4.2	S3	G3
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	1B.1	S1	G2G3
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Plagiobothrys diffusus	San Francisco popcorn-flower	Boraginaceae	annual herb	1B.1	S1	G1Q
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	3.1	S2	G2Q

Sanicula maritima	adobe sanicle	Apiaceae	perennial herb	1B.1	S2	G2
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb	2B.2	S3	G5T5
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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10 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37121G7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	1B.1	S1	G1
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G5T2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	3	S3?	G4T3Q
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Plant List

12 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 38122A1

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	4.3	S4	G5
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	2B.1	S2	G4G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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Plant List

14 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37122H1

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	Stata Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Appendix C – Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 2

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 exigua	20%	Yes	OBL
2. Juglans californica hindsii	10%	Yes	FACW
3. Ailanthus altissima	2%	No	FACU
4.			
Total Cover:	32%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Sagittaria sanfordii	5%	No	OBL
2. Mimulus guttatus	1%	No	OBL
3. Cynodon dactylon	70%	Yes	FAC
4. Rumex crispus	1%	No	FACW
5. Brodiaea sp.	5%	No	–
6.			
7.			
8.			
Total Cover:	82%		
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: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 2

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
0-9"	10YR 3/2	90%	5YR 3/4	10%	C	M		Coarse sandy loam
9"								cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ✓	No ___	Depth (inches): 6"
Saturation Present? (includes capillary fringe)	Yes ✓	No ___	Depth (inches): 6"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Edge of line low-flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 2a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: upland datapoint

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans californica lindsii	20%	Yes	FACU
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Malva parviflora	5%	No	UPL
2. Cynodon dactylon	50%	Yes	FAC
3. Elymus glaucus	5%	No	FACU
4. Erodium sp	30%	Yes	UPL
5. Rhaphanus raphanus	2%	No	UPL
6.			
7.			
8.			
Total Cover: 92%			
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 2a

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"	10YR 3/2	100%	—	—	—	—		Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >12"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >12"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/12/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 3

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Sagittaria sanfordii	2%	No	OBL
2. Elymus glaucus	5%	No	FACU
3. Bromus diandrus	20%	Yes	UPL
4. Rumex crispus	1%	No	FACW
5. Nasturtium officinale	10%	Yes	UPL
6. Typha latifolia	1%	No	OBL
7.			
8.			
Total Cover:	39%		
Woody Vine Stratum			
1. Hedera helix	50%	Yes	UPL
2.			
Total Cover:	50%		

% 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% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 3

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"	10YR3/2	100%	—	—	—	—		silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): –

Water Table Present? Yes ___ No ✓ Depth (inches): 7-12"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 7-12"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 5

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 goodingii	60%	Yes	OBL
2. Salix sp.	5%	No	FACW
3. Populus balsamifera	5%	No	FACW
4. Juglans californica hindsii	10%	No	FAC
Total Cover:	80%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Typha latifolia	30%	Yes	OBL
2. Leymus triticoides	5%	No	FAC
3. Rumex crispus	5%	No	FACW
4. Juncus effusus	10%	Yes	OBL
5.			
6.			
7.			
8.			
Total Cover:	50%		
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: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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:
Riparian corridor

SOIL

Sampling Point: 5

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
0-14"	10YR 2/1	95%	5YR 3/4	5%	C	M	mucky clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ✓	No ___	Depth (inches): 14"
Saturation Present? (includes capillary fringe)	Yes ✓	No ___	Depth (inches): 12"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Pit dug above line channel low-flow area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 5a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Upland data point

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Baccharis pilularis	30%	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover: 30%			
Herb Stratum			
1. Bromus diandrus	60%	Yes	UPL
2. Carduus pycnocephalus	10%	No	FACU
3. Lolium multiflorum	10%	No	FAC
4. Silybum marianum	5%	No	UPL
5.			
6.			
7.			
8.			
Total Cover: 85%			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 5a

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
0-7"	10YR 3/2	100%	—	—	—	—	cobbly silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: Partial shoulder fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >7"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >7"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/14/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 8

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Typha latifolia	60%	Yes	OBL
2. Polygonum persicaria	5%	No	FACW
3. Ludwigia peploides	10%	No	OBL
4. Rumex crispus	2%	No	FACW
5. Mentha pulegium	2%	No	OBL
6.			
7.			
8.			
Total Cover: 79%			
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 8

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Deeply insised low-flow channel. Inundated. Not able to collect soil. Walnut Creek is perennial in nature so soils considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 36-60"

Water Table Present? Yes ✓ No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/14/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 8a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Upland data point

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. Elymus glaucus	5%	No	FACU
2. Raphanus raphanus	10%	No	UPL
3. Bromus diandrus	60%	Yes	UPL
4. Avena Sativa	20%	NO	UPL
5. Rumex crispus	10%	NO	FACW
6.			
7.			
8.			
Total Cover: 105%			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 8a

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
0-14"	10YR 2/2	100%	—	—	—	—		Silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: Dark soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): —
Water Table Present?	Yes ___	No ✓	Depth (inches): 7 14"
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): 7 14"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: High water floodplain area of walnut creek. Does not support wetlands. Indicators of high water flows in this area

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 9

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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. Paspalum dilatatum	80%	Yes	FACU
2. Ludwigia peploides	10%	No	OBL
3. Cyperus eragrostis	3%	No	FACW
4. Polygonum sp.	5%	No	FACW
5. Rumex crispus	2%	No	FACW
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 9

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"	10YR 2/1							Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): 6"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 9a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: upland datapoint

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. Cynodon dactylon	60%	Yes	FAC
2. Rhaphanus sp.	5%	no	UPL
3. Avena fatua	10%	no	UPL
4. Verbena sp	5%	no	UPL
5. Paspalum dilatatum	20%	Yes	FAC
6.			
7.			
8.			
Total Cover: 100%			
Woody Vine Stratum			
1. Hedera canariensis	40%	Yes	UPL
2.			
Total Cover: 40%			

% 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ 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: 9a

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
0-9"	10YR 2/2	100%	—	—	—	—		Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): 29"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 29"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 10

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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	70%	Yes	OBL
2. Juncus balticus	20%	Yes	OBL
3. Cyperus eragrostis	10%	No	FACW
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: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 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
0-4"	10YR 3/1	100%	—	-	-	-		loam
4-12"	10Y 2.5/1	100%	—	—	-	—		Gleyed clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): 4"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 4"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 10a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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:

upland data point.

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. Lolium multiflorum	40%	Yes	FAC
2. Avena fatua	40%	Yes	UPL
3. Bromus diandrus	10%	No	UPL
4. Lactuca serriola	5%	No	FAC
5. Medicago sativa	5%	No	UPL
6. Convolvulus arvensis	5%	No	UPL
7.			
8.			
Total Cover: 105%			

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% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	45	x 3 = 135
FACU species		x 4 =
UPL species	60	x 5 = 300
Column Totals:	105 (A)	435 (B)

Prevalence Index = B/A = 4.14

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: 10a

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. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >10"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >10"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 11

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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. Polypogon monspeliensis	5%	No	FACW
2. Ludwigia peploides	10%	No	OBL
3. Typha latifolia	60%	Yes	OBL
4. Cynodon dactylon	20%	Yes	FAC
5.			
6.			
7.			
8.			
Total Cover: 95%			
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 11

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 2/1	100%	—	—	—	—		loam
3-12"	10Y 2.5/1	100%	—	—	—	—		gleyed clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 11a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: upland datapoint

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. Avena fatua	90%	Yes	UPL
2. Convolvulus arvensis	10%	No	UPL
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: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 11a

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"	10YR3/3	100%	—	—	—	—		Clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): 28"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 28"

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D – Agency Coordination

From:	Ryan_Olah@fws.gov
To:	Mike Trueblood
Cc:	Edward Heming
Subject:	RE: Section 7 Technical Assistance Request for the Concord Bridge Repair Project
Date:	Thursday, August 02, 2012 2:11:32 PM

I think your reasoning looks good-will this be a project that will be coming to us through the Corps?

Ryan

"Mike Trueblood" <Mike.Trueblood@lsa-assoc.com>

"Mike Trueblood" <Mike.Trueblood@lsa-assoc.com> 07/30/2012 02:05 PM	To<Ryan_Olah@fws.gov> cc"Edward Heming" <Edward.Heming@lsa-assoc.com> SubjectRE: Section 7 Technical Assistance Request for the Concord Bridge Repair Project

Mr. Olah:

I am following up to verify you received the technical assistance request and supplemental materials for the City of Concord Bridge Preventative Maintenance Project sent July 5, 2012. Have you been able to review the material yet? I know the material I sent is fairly complicated, so feel free to contact me if you have any questions or require further clarification.

Thanks,

Mike Trueblood
Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

From: Mike Trueblood
Sent: Thursday, July 05, 2012 2:01 PM
To: Ryan_Olah@fws.gov
Cc: Edward Heming
Subject: Section 7 Technical Assistance Request for the Concord Bridge Repair Project

Mr. Olah:

Attached please find a formal USFWS technical assistance request letter and supplemental material for the City of Concord Bridge Preventative Maintenance Project.

Please review the attached letter and supplemental material and provide concurrence and/or suggestions for the proposed Section 7 strategy for this project. Feel free to contact me if you have any questions.

Thanks,

Mike Trueblood
Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

From:	Tom Holstein
To:	Mike Trueblood; Edward Heming
Cc:	mario.camorongan@ci.concord.ca.us; "Fish, Bob"
Subject:	5135 (039) Fw: Section 7 Technical Assistance Request for the Concord Bridge Repair Project
Date:	Friday, July 13, 2012 2:08:02 PM

Mike, Edward

Please can you send me a copy of the letter that was sent to FWS and NMFS.

I discussed the project with Joe Heublein of NMFS on Wednesday prior to him sending the email below.

At this stage he will not definitively say whether consultation is necessary on each bridge, nor provide, or provide comments on, an effects determination. However, based on your submittal, I noted the following from our conversation:

Only the 7 bridges you identified in your submittal might possibly require consultation. The remainder could be dealt with by a Caltrans no effect determination. Moreover, of the 7, it may be possible to make further 'no effect' determinations - if the project is constructed in the summer months then the key issue will be riparian vegetation removal rather than whether there is dewatering. His preliminary view was that with appropriate avoidance and minimization measures, those bridges requiring consultation could probably be dealt with through 'informal' rather than 'formal' consultation. If any bridges did require formal consultation we would probably consult on those separately. Otherwise, we could submit one informal consultation request.

He agreed that once you had carried out further analysis that we could have a meeting in Concord to agree the bridges he has concerns over and what avoidance and minimization measures would be appropriate. I suggest waiting to hear back from USFWS to see what they say so that a joint NMFS/USFWS meeting can be held.

Feel free to get in touch with any questions about the above,

Regards

Tom Holstein
Associate Environmental Planner
Caltrans Office of Local Assistance - District 4
111 Grand Ave.
Oakland, CA 94623
Tel: (510) 286-5250
tom_holstein@dot.ca.gov
----- Forwarded by Tom Holstein/D04/Caltrans/CAGov on 07/13/2012 01:44 PM -----

Joe Heublein
<joe.heublein@noaa.gov>
07/11/2012 04:48 PM

To
Tom Holstein
<tom_holstein@dot.ca.gov>
cc

<Mike.Trueblood@lsa-assoc.com>
Subject
Re: Section 7 Technical Assistance Request for the Concord Bridge Repair Project

Tom and Mike,

Thank you for contacting NMFS for technical assistance early on this project. Some background information: none of the bridges are within designated critical habitat for CCC steelhead. The bridge repairs that are proposed to occur below impassable barriers in Walnut Creek or Diablo Creek could affect listed salmonids. The remaining bridge repairs are proposed to occur in waterways not believed to have populations of O. mykiss. Furthermore, if repairs are proposed to occur in the summer months, very little flowing water (or listed fish) will be present at some of these locations.

Please contact me if you would like to schedule a site visit to discuss repairs expected to involve section 7 consultation.

Thanks,

Joe Heublein

(707)575-1251

On Thu, Jul 5, 2012 at 3:13 PM, Joyce Ambrosius <joyce.ambrosius@noaa.gov> wrote:

---------- Forwarded message ----------
From: Mike Trueblood <Mike.Trueblood@lsa-assoc.com>
Date: Thu, Jul 5, 2012 at 2:09 PM
Subject: Section 7 Technical Assistance Request for the Concord Bridge Repair Project
To: joyce.ambrosius@noaa.gov
Cc: Edward Heming <Edward.Heming@lsa-assoc.com>

Ms. Ambrosius:

Attached please find a formal NMFS technical assistance request letter and supplemental material for the City of Concord Bridge Preventative Maintenance Project.

Please review the attached letter and supplemental material and provide concurrence and/or suggestions for the proposed Section 7 strategy for

this project. Feel free to contact me if you have any questions.

Thanks,

Mike Trueblood
Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

--
Joyce Ambrosius
Central Coast Supervisor, Protected Resources Division
NOAA's National Marine Fisheries Service
777 Sonoma Ave., Rm 325
Santa Rosa, CA 95404

707-575-6064
707-738-1478 (cell)
707-578-3435 (fax)

LSA ASSOCIATES, INC.
4200 ROCKLIN ROAD, SUITE 11B
ROCKLIN, CALIFORNIA 95677

916.630.4600 TEL
916.630.4603 FAX

BERKELEY
CARLSBAD
FORT COLLINS
FRESNO
IRVINE
PALM SPRINGS
PT. RICHMOND
RIVERSIDE
SAN LUIS OBISPO
SOUTH SAN FRANCISCO

M E M O R A N D U M

DATE: November 6, 2012

TO: Project Team

FROM: Mike Trueblood

SUBJECT: Concord Bridge Repairs Project - NMFS Section 7 Technical Assistance Field Meeting - September 26, 2012

On September 26, 2012, a field visit to the Concord Bridge Repairs Project was conducted, which focused on potential Section 7 evaluation for federally listed anadromous fish.

Attendees:

Tom Holstein – Caltrans
Mario Camorongan – City of Concord
Joe Heublin – National Marine Fisheries Service
Bob Fish – AECOM
Mike Trueblood – LSA

The purpose of the visit was to verify that the proposed repair work at 7 bridges will have no affect to listed anadromous fish. The results of the field visit confirmed that NMFS would agree to a no affects call provided by Caltrans with one condition provided below.

1. For work to be done on the bridge over Willow Creek, it was observed that a 10 foot high weir/barrier structure was upstream of the proposed work. Therefore, it was agreed that the work on the downstream bridges would be scheduled during the summer months to ensure work is conducted when anadromous fish are not present.

Dayna Winchell

From: Mike Trueblood
Sent: Tuesday, October 28, 2014 10:17 AM
To: Jeff Bray (Jeff.Bray@lsa-assoc.com); Dayna Winchell
Subject: FW: 5135 (039) Concord Bridges BAs
Attachments: 5135 (039) USFWS BA review.pdf

Well, here is the answer regarding the NMFS BA. We don't need one as long as we discuss the below in the NES.

The USFWS BA comments are also attached. They are fairly minor. The biggest comments seem to be related to compensatory mitigation, modification of the Programmatic BO avoidance and minimization measures, and discussion of direct and indirect effects.

Mike Trueblood
Senior Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

From: Holstein, Thomas@DOT [mailto:tom.holstein@dot.ca.gov]
Sent: Tuesday, October 28, 2014 10:00 AM
To: Edward Heming; Fish, Bob; Rogers, Jeff; Mike Trueblood
Cc: Camorongan, Mario
Subject: RE: 5135 (039) Concord Bridges BAs

Jeff, Mike, Edward, Bob

Apologies for the delay - I have now been through the two submitted Biological Assessments (BA) for the 5135 (039) Concord Bridges project.

I have attached comments relating to the USFWS BA. Please note that we will not approve the BA until the NES is also ready for approval. If any issues arise out of the review of the NES then further changes to the BA may be required.

Last week I also spoke to Joe Heublein of NMFS about this project. As you recall, he is familiar with the project following the site visit we undertook with him in 2012. Our conclusion as a result of that conversation is that, as long as you are able to include a commitment to dry season working (ie June to October), Caltrans will be comfortable with a 'No Effect' NMFS determination for all these ten remaining bridges.

Your conclusion was that the project would result in (permanent and temporary) impacts to CCC steelhead at Willow Pass Road over Walnut Creek and (temporary impacts) at Whitman Road over SDM Channel. However, in my discussion with Joe Heublein, we concluded that there is no legitimate chance of Steelhead being present in Walnut Creek or the Whitman Road Channel during the dry season. There is no real risk of steelhead using these creeks because of the drop structure 0.5 miles upstream of Willow Pass Road (refer to the 2005 Leidy Report). Moreover, the work is outside critical habitat, and the level of impact to potential steelhead habitat is small enough that even if the drop structure were to be removed, there would be no detrimental effect on the species.

If you agree with this conclusion then all the information relating to the discussion on fish species should be reported in the NES and there would be no need for a separate BA for NMFS.

Feel free to get in contact if you have any questions about this,

Regards

Tom Holstein
Associate Environmental Planner
Caltrans Office of Local Assistance - District 4
111 Grand Avenue
Oakland, CA 94623
Tel: (510) 286-5250
tom_holstein@dot.ca.gov

From: Edward Heming [mailto:Edward.Heming@lsa-assoc.com]
Sent: Thursday, September 25, 2014 3:44 PM
To: Fish, Bob; Holstein, Thomas@DOT
Cc: Rogers, Jeff; Camorongan, Mario; Mike Trueblood
Subject: RE: 5135 (039) Concord Bridges BAs

Bob,

That is the correct document.

Correct, Mike and Tom had discussed the approach of submitting the BAs prior to the NES first back in 2011 (when we were scoping the project) based on the need for a custom format for these documents due to the project having multiple bridges. We would still like to have feedback from Caltrans on the BAs prior to submitting the NES.

I think that timeline would depend on when we receive comments on the BAs.

Edward Heming, AICP
Senior Environmental Planner
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
916-630-4600

From: Fish, Bob [mailto:Bob.Fish@aecom.com]
Sent: Thursday, September 25, 2014 3:34 PM
To: 'Holstein, Thomas@DOT'
Cc: Rogers, Jeff; Camorongan, Mario; Edward Heming
Subject: RE: 5135 (039) Concord Bridges BAs

Tom,

A copy of the CRLF Programmatic Biological Opinion for Projects Funded or Approved under the FHWA's Federal Aid Program (8-8-10-F-58), May 2011, is attached.

Regarding the NES, LSA had it scheduled to start at the completion (submittal to Caltrans) of the 8A's. They have allotted 8 weeks for its completion and then submittal to you. Therefore, I would expect that they will complete it and submit to you by the end of next month (week of October 20th)

Edward,

Please confirm that I have attached the correct document and my responses regarding the NES submittal are valid.

Regards,

Bob Fish, PE, SE
Sacramento Operations Manager
Transportation
D 916 414-1570 C 916 903-8716
Bob.Fish@AECOM.com

AECOM
2020 L Street, Suite 300
Sacramento, CA 95811
T 916 414-5800 F 916 414-1557
www.AECOM.COM

From: Camorongan, Mario [mailto:Mario.Camorongan@cityofconcord.org]
Sent: Thursday, September 25, 2014 3:09 PM
To: 'Holstein, Thomas@DOT'
Cc: Rogers, Jeff; Fish, Bob
Subject: RE: 5135 (039) Concord Bridges BAs

Hi Tom,

Nice hearing from you. I sent an email to Bob Fish. I will wait for his response. By the way, Jeff Rogers in our office is now the assigned Project Manager for all the bridge projects. I copied him and Bob on this email. Thank you.

Mario C. Camorongon, PE, CFM, QSD
Manager, Capital Impravement Pragram
Dept. of Comm & Econ Dev - Engineering Division
1435 Gasoline Alley, Concord, CA 94520
Phone: (925) 671-3021 Fax: (925) 798-9692
Email: Mario.camorongan@cityofconcord.org

From: Holstein, Thomas@DOT [mailto:tom.holstein@dot.ca.gov]
Sent: Thursday, September 25, 2014 3:06 PM
To: Camorongan, Mario
Subject: FW: 5135 (039) Concord Bridges BAs

Hi Mario,

My email below to Mike Trueblood got bounced back. Is he still at LSA?

Can you forward it to your contact at LSA for a response please

Thanks

Tom Holstein
Caltrans D4 Local Assistance

From: Holstein, Thomas@DOT
Sent: Thursday, September 25, 2014 2:57 PM
To: Mike.Trueblood@isa.assoc.com
Cc: Mario Camorongan (mario.camorongan@ci.concord.ca.us)
Subject: 513S (039) Concord Bridges BAs

Hi Mike

I've received the two BAs for the Concord Bridges project and am starting to review them. To assist me, can you email me a copy of the CRLF Programmatic Biological Opinion for Projects Funded or Approved under the FHWA's Federal Aid Program (B-B-10-F-5B), May 2011. This is referenced in chapter 4.2.1.3 of the USFWS BA

Also, is there an NES coming my way? We normally see the NES before or at the same time as the BA.

Thanks

Tom Holstein
Caltrans D4 Local Assistance

Appendix E – Representative Photos

Looking west at the Concord Avenue Bridge over Walnut Creek (Bridge NO. 28C0091L/R).

Looking at the bridge on Ygnacio Valley Road over Galindo Creek (Bridge NO. 28C0115).

Looking west at the Willow Pass Road bridge at Walnut Creek (Bridge NO. 28C0183).

Looking west at the Court Lane Bridge over Galindo Creek (Bridge NO. 28C0221).

Caltrans

APPENDIX E

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Representative Photos

SOURCE: LSA Associates, Inc. (2014).

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Looking west under the bridge at St. Francis Drive over Galindo Creek (Bridge NO. 28C0222).

Looking upstream at the Whitman Road Bridge over SDM Channel (Bridge NO. 28C0224).

Looking downstream from the Whitman Road Bridge over SDM Channel (Bridge NO. 28C0224).

Looking downstream from the Claudia Drive Bridge over Holbrook Channel (Bridge NO. 28C0278).

Caltrans

APPENDIX E

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Representative Photos

SOURCE: LSA Associates, Inc. (2014).

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Looking upstream from the Claudia Drive Bridge over Holbrook Channel (Bridge NO. 28C0278).

Looking downstream from the San Miguel Road Bridge over Pine Creek (Bridge NO 28C0357).

Looking upstream from the San Miguel Road Bridge over Pine Creek (Bridge NO. 28C0357).

Looking downstream from the Concord Boulevard Bridge over Mount Diablo Creek (Bridge NO. 28C0231).

Caltrans

APPENDIX E

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Representative Photos

SOURCE: LSA Associates, Inc. (2014).

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Biological Assessment
(USFWS)

Concord Bridge Repairs

Bridge No. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221, 28C0222, 28C0224, 28C0278, 28C0357, 28C0361.

City of Concord, Contra Costa County, California

BPMP-5135 (039)

March 2015

Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

Biological Assessment

Concord Bridge Repairs

Bridge No. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221, 28C0222, 28C0224, 28C0278, 28C0357, 28C0361.

City of Concord, Contra Costa County, California

Federal Project No. BPMP-5135 (039)

March 2015

STATE OF CALIFORNIA
Department of Transportation
City of Concord Public Works Department

Prepared By: _____ Date: 3-31-2015

Dayna Winchell, Biologist
Mike Trueblood, Senior Biologist
(916) 630-4600
LSA Associates, Inc.

Approval By: _____ Date: 4/7/15

Jeff Rogers, Project Engineer
City of Concord Public Works Department
1950 Parkside Drive MS/40
Concord, California, 94620
(925) 671-3108

Concurred By: _____ Date: 28 Apr 2015

Acting ~~Boris Deunert~~, Environmental Branch Chief
California Department of Transportation, District 4
111 Grand Avenue
Oakland, CA 94623
(510) 286-6371

Summary of Findings, Conclusions and Determinations

The City of Concord (City), in conjunction with the California Department of Transportation (Caltrans), proposes to repair various bridge deficiencies at 10 bridges in the City.

These 10 bridges are part of a larger project that includes a total of 17 bridges. An environmental documentation strategy was developed to expedite environmental clearance for the first seven bridges since the repairs would result in little to no environmental impacts and would not require Section 7 consultation with the United States Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS). Due to the minimal impacts, a Natural Environment Study (Minimal Impacts) (NES [MI]) was prepared and approved for the first seven bridges on November 15, 2012. The remaining 10 bridges would require Section 7 consultation with USFWS and are the subject of this Biological Assessment (BA). Additionally a Natural Environmental Study (NES) has been prepared.

Proposed bridge repairs vary greatly at each location and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping.

The Biological Study Area (BSA) at each bridge includes the project footprint, all access and staging areas, and lands beyond the footprint to the edge of the road right-of-way that could potentially be affected by project construction and/or were determined necessary to inventory in order to perform an adequate analysis of project impacts. The majority of the BSA at each bridge is either developed or consists of ruderal grasslands and disturbed, sparsely vegetated areas. The only natural communities within the BSA are associated with the channels below some of the bridge crossings and include annual brome grassland, black willow riparian, Valley oak riparian, and cattail marsh.

The project would not affect any federally threatened or endangered plants, or plants proposed for federal listing.

The project may affect, and is likely to adversely affect, California red-legged frog (*Rana draytonii*) (CRLF), a species listed as threatened under the Federal Endangered Species Act (FESA). The project is not located within critical habitat for CRLF; the closest critical habitat located 6 miles southwest. The project is likely to adversely affect CRLF as a result of direct and indirect effects to CRLF aquatic and upland habitat during construction of the bridge, placement of rock slope protection and falsework, and temporary disturbance. Temporary effects will occur to a total of 0.60 acre (ac) to aquatic habitat and 0.14 ac to upland CRLF habitat. Permanent effects will occur to a total of 0.20 ac of aquatic and 0.06 ac of upland CRLF habitat.

To minimize effects to CRLF, measures which have been developed from the provisions of the CRLF "Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program (8-8-10-F-58)" dated May 4, 2011 and issued by USFWS Ventura Office.

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List of Abbreviated Terms

ACOE	Army Corps of Engineers
ac	acre(s)
BA	Biological Assessment
BMP	Best Management Practices
BSA	Biological Study Area
BPMP	Bridge Preventative Maintenance Program
CDFW	California Department of Fish and Wildlife
City	City of Concord
Caltrans	California Department of Transportation
CEEA	Cumulative Effects Evaluation Area
CEQA	California Environmental Quality Act
CNPS	California Native Plant Society
CNDDB	California Natural Diversity Database
CRLF	California red-legged frog
CWA	Clean Water Act
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NES(MI)	Natural Environment Study (Minimal Impacts)
NMFS	National Marine Fisheries Service
RSP	rock slope protection
RWQCB	Regional Water Quality Control Board
USFWS	United States Fish and Wildlife Service

Chapter 1. Introduction

The City of Concord (City), in conjunction with the California Department of Transportation (Caltrans), proposes to repair various bridges deficiencies at 10 bridges in the City.

Although these 10 bridges are part of a larger project that includes 17 bridges, an environmental documentation strategy has been developed to south the bridge repairs into two categories based on the proposed work at each bridge and whether or not consultation under Section 7 of the Federal Endangered Species Act (FESA) would be required. Those bridges not requiring Section 7 consultation were documented in a Natural Environment Study (Minimal Impacts) (NES [MI]) while the remaining bridges will be documented in this Biological Assessment (BA) and Natural Environment Study (NES).

The purpose of this biological assessment is to provide technical information and to review the proposed project in sufficient detail to determine to what extent the proposed project may affect threatened, endangered, or proposed species under jurisdiction of the United States Fish and Wildlife Service (USFWS). The biological assessment is prepared in accordance with legal requirements found in Section 7 (a)(2) of the Endangered Species Act (16 U.S. C 1536(c)) and with Federal Highway Administration (FHWA) and Caltrans regulation, policy and guidance. The document presents technical information upon which later decisions regarding project impacts are developed.

The City will serve as a lead agency for the California Environmental Quality Act (CEQA) review. Under National Environmental Policy Act (NEPA) assignment from FHWS, Caltrans is the lead agency for NEPA review.

1.1. Project History

The project proposes miscellaneous repairs to 10 bridges within the City. These bridges have been determined to require repairs under the Bridge Preventive Maintenance Program (BPMP).

Proposed bridge repairs vary greatly at each location and include the following: repair of spalled concrete of the bridge abutments, piers, and deck as needed; replace sidewalk approaches; replacement of chain link fencing, sealing of bridge decks and

general bridge deck, and railing repair; replacement of joint seals; seal utility openings, and minor resloping.

1.2. Project Location

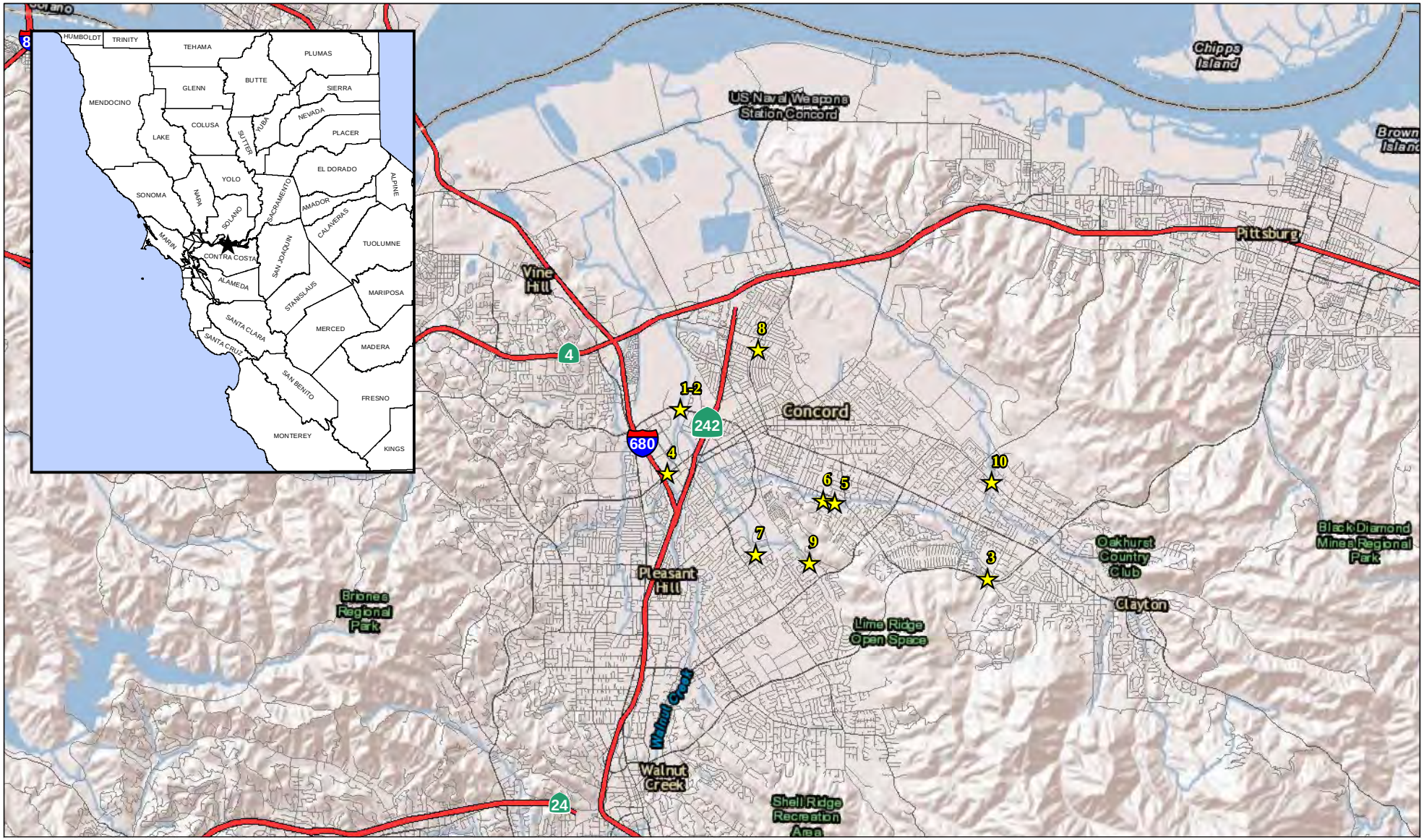
The 10 bridges are located in the City of Concord in Contra Costa County. All of the bridges are located in urban locations throughout the City (Figures 1, and 2).

1.3. Project Description

The project consists of a single build alternative which includes repairs which vary and include the following: repair of spalled concrete on the bridge abutments, piers, and deck as needed; replacement of sidewalk approaches; repair or installation of rock slope protection; repair of I-beam damage of the deck; construction of shotcrete lagging and wing walls; replacement of chain link fencing; sealing of bridge decks and general bridge deck and railing repair; replacement of joint seals; seal bridge deck with methacrylate; seal utility openings; and minor resloping.

This document will address proposed repairs and potential impacts to biological resources for the 10 bridges that will require Section 7 consultation. These 10 bridges are described below:

1. **28C0091L** – *Concord Avenue over Walnut Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include, injecting epoxy into cracks in the bridge deck, removal and reconstruction of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Repairs below deck consist of repairs to spalls on the abutments and piers. Work under the bridge will be accomplished with hand tools and ladders. Staging will occur on adjacent private parking lots and access will be from trails/roadway on both ends of the bridge. Work is expected to take 25 working days to complete.
2. **28C0091R** – *Concord Avenue over Walnut Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, removal and reconstruction of portions of sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include replacement of rock slope protection (RSP) at piers,



LEGEND

★ **Bridge Locations**

1-2. Concord Ave at Walnut Creek

3. Ygnasio Valley Rd at Galindo Creek

4. Willow Pass Rd at Walnut Creek

5. Court Lane at Galindo Creek

6. Saint Francis Dr at Galindo Creek

7. Whitman Rd at SDM Channel

8 Claudia Ave at Holbrook Channel

9. San Miguel Bridge at Pine Creek

10. Concord Blvd at Mount Diablo Creek

0 1 2
MILES

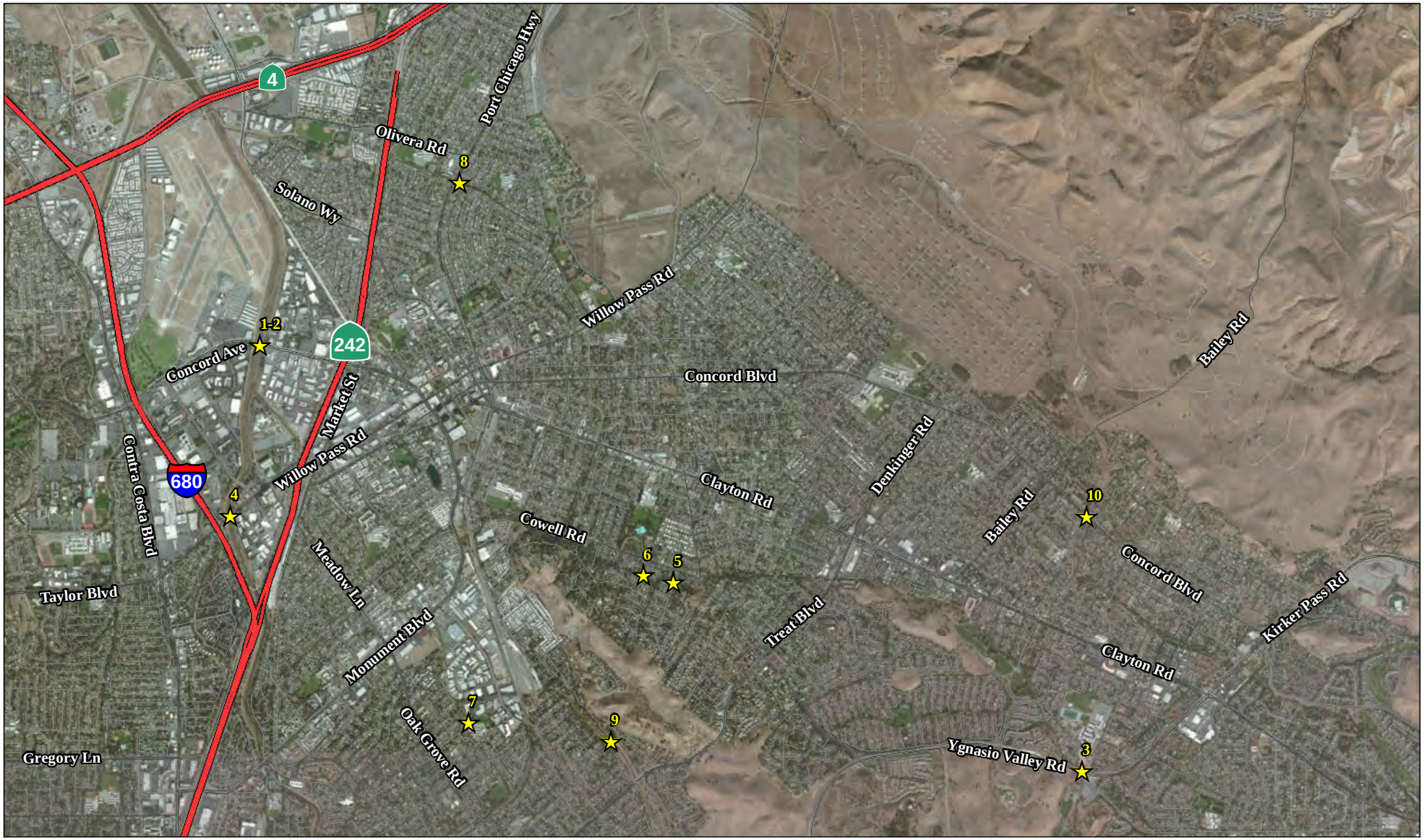
SOURCE: ESRI Imagery (4/2008)

I:\Aem1101\GIS\Nes-fig1_reg_loc.mxd (10/29/2014)

FIGURE 1

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Project Location Map



LEGEND

Bridge Locations

1-2. Concord Ave at Walnut Creek

3. Ygnasio Valley Rd at Galindo Creek

4. Willow Pass Rd at Walnut Creek

5. Court Lane at Galindo Creek

6. Saint Francis Dr at Galindo Creek

7. Whitman Rd at SDM Channel

8 Claudia Ave at Holbrook Channel

9. San Miguel Bridge at Pine Creek

10. Concord Blvd at Mount Diablo Creek

0 2000 4000
FEET

SOURCE: ESRI Aerial Imagery (5/2010)

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FIGURE 2

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Project Vicinity Map

replacement/repair of retaining walls, repairs of concrete spalls at pier walls and abutments, and repair I-beam damage. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on adjacent private parking lots and access will be from trails/roadway on both ends of the bridge. Work is expected to take 35 working days to complete.

3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include construction of overside drain to reroute roadway surface drainage and repair of AC dike. Below deck repairs include RSP placement at upstream and downstream ends of the culvert, and coring through downstream retaining walls and tieback placement as well as repair of spalled concrete surfaces. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on the north side of the culvert and access will be from roadways on both ends of the bridge. Work is expected to take 16 working days to complete.
4. **28C0183** – *Willow Pass Road over Walnut Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include injecting epoxy into cracks in the bridge deck, repair of metal bridge railing, removal and reconstruction of portions of the sidewalk approaches, and treatment of the bridge deck with methacrylate sealant. Below deck repairs include RSP for erosion control, repair of spalled concrete surfaces, and rehabilitation of joints between abutment 1 and pier 4. Work under the bridge will be accomplished with a loader/excavator and hand tools and will require water diversion. Staging will occur on adjacent private parking lots and access will be from Iron Horse bike trail on the west side of the bridge and private parking areas on the east side of the bridge. Work is expected to take 34 working days to complete.
5. **28C0221** – *Court Lane over Galindo Creek* – Repairs are planned above and below the bridge deck. Above deck repairs is limited to tree removal. Below deck repairs include RSP for erosion control and repair of concreted rock below headwall. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take 12 working days to complete.
6. **28C0222** – *St. Francis Drive over Galindo Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of portions of sidewalk approaches, and treatment of the bridge

deck with methacrylate sealant. Below deck repairs include RSP for erosion control, construction of shotcrete lagging and wing walls, and removal of concrete. Work under the bridge will be accomplished with a loader/excavator, concrete truck (parked on the bridge) with hose, and hand tools. Staging will occur on the street and access will be from the street. Work is expected to take 18 working days to complete.

7. **28C0224** – *Whitman Road over SDM Channel* – Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of chain link fence posts. Below deck repairs include removal of unsound concrete at spall locations and cleaning/patching areas where reinforcement is exposed. Work under the bridge will be accomplished with hand tools but will require water diversion. Work is expected to take a total of 8 working days to complete.
8. **28C0278** – *Claudia Drive over Holbrook Channel* – Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of portions of sidewalks that have been damaged by settlement. Below deck repairs include removal and replacement of unsound concrete on soffit and pier walls and around the utility opening. Work under the bridge will be accomplished with hand tools but will require water diversion. Work is expected to take a total of 8 working days to complete.
9. **28C0357** – *San Miguel Road over Pine Creek* – Repairs are planned above and below the bridge deck. Above deck repairs include removal and replacement of chain link fencing. Below deck repairs include removal and replacement of the East and West parapet wall of the culvert, removal and replacement of unsound concrete on the culvert and retaining wall, and replacement of a joint on the east side of the structure. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take a total of 16 working days to complete.
10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – Repairs are planned below the bridge deck. Repairs include rock slope protection rehabilitation and placement. Work under the bridge will be accomplished with a loader/excavator and hand tools. Work is expected to take a total of 8 working days to complete.

Project design plans for each bridge are included in Appendix A.

1.4. Summary of Consultation to Date

The project consists of 10 bridges that are part of a larger project that includes a total of 17 bridges. A strategy was developed to expedite environmental clearance of the first seven bridge repair locations that had little to no environmental impacts (i.e., no Section 7 consultation). Technical assistance was requested with the USFWS and NMFS on July 5, 2012; both agencies concurred with the documentation strategy and the determination of which projects would and would not require Section 7 consultation (Appendix B).

1.5. Document Preparation History

This document was prepared by LSA Associates, Inc. in March 2015.

Chapter 2. Study Methods

2.1. Listed and Proposed Species Potentially in the Biological Study Area

Prior to conducting any field studies, the limits of the Biological Study Area (BSA) were established for each of the 10 bridges. The sizes of the BSAs vary from 0.16 acre (ac) to 4.64 ac, and total approximately 11.22 ac (Figures 3a-c). Each BSA consists of the project footprint, access and staging areas, and lands beyond the footprint to the edge of the road right-of-way that could potentially be affected by project construction and/or were determined necessary to inventory in order to perform an adequate analysis of project impacts.

A list of sensitive wildlife and plant species potentially occurring within the project area was compiled to evaluate potential impacts resulting from project construction. Sources used to compile the list include the California Natural Diversity Data Base (CNDDB), the California Native Plant Society (CNPS) Online Edition (2014), and the USFWS online list. Twelve 7.5-minute quadrangles were referenced to compile the species lists: Antioch North, Antioch South, Benicia, Briones Valley, Clayton, Diablo, Honker Bay, Las Trampas Ridge, Oakland East, Tassajara, Vine Hill, and Walnut Creek. These quads were selected to obtain a sufficient representative sampling of special status species that could occur in the area. The individual lists are included in Appendix C.

The special status species lists obtained from the CNDDB, CNPS and USFWS, were reviewed to determine which species could potentially occur within the vicinity of the BSA. The cumulative list (shown in Table 1) includes numerous species representing a variety of habitats. The list includes each species' protection status, habitat information, status in the BSA, and supporting comments as necessary.

The determination of whether a species could potentially occur within the BSA was based on the availability of suitable habitat within and adjacent to the BSA, as well as documented occurrences of the species in or adjacent to the BSA. Species requiring specific habitat not present in the vicinity of the project (e.g., vernal pools) were eliminated as potentially occurring and are not discussed further. Those species that could potentially occur in the BSA based on habitat suitability or on known occurrences in or within the vicinity of the BSA are discussed in Section 4.

LEGEND

Biological Study Area

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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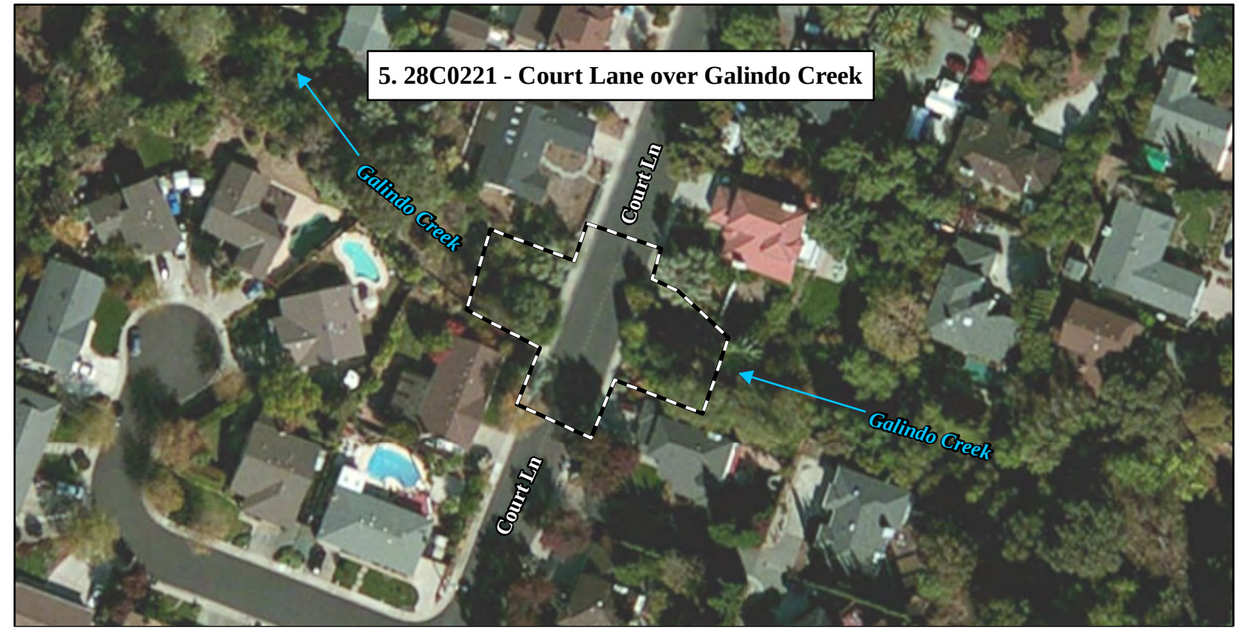
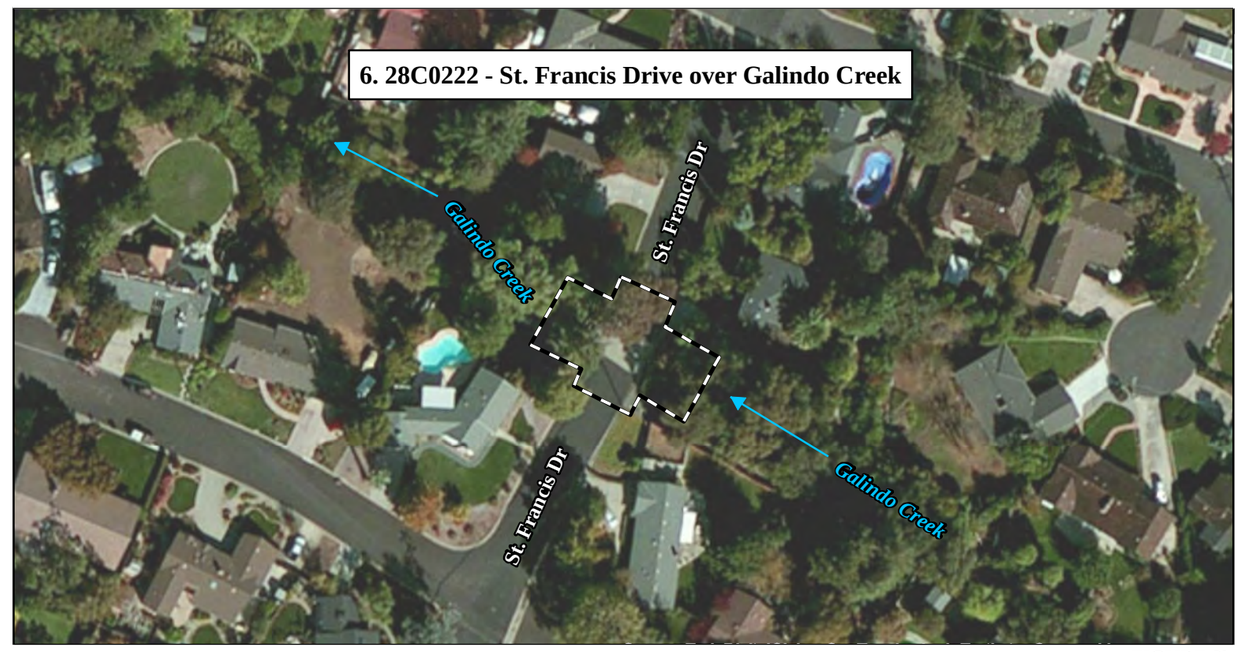
FIGURE 3a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Biological Study Area





LEGEND

Biological Study Area

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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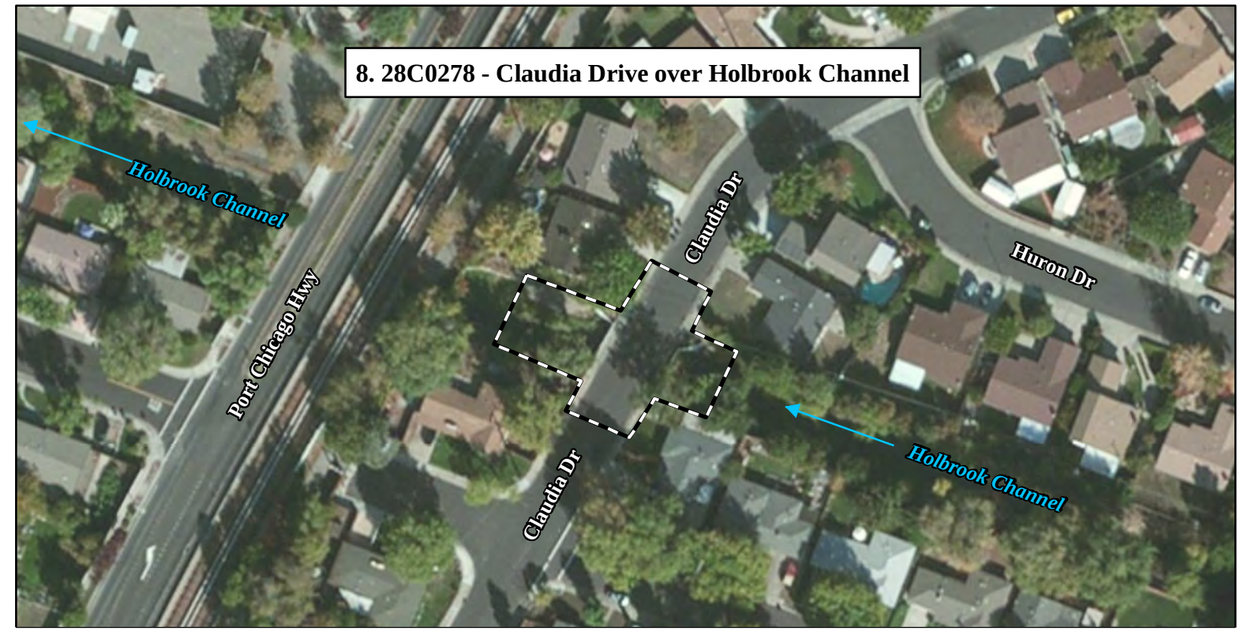
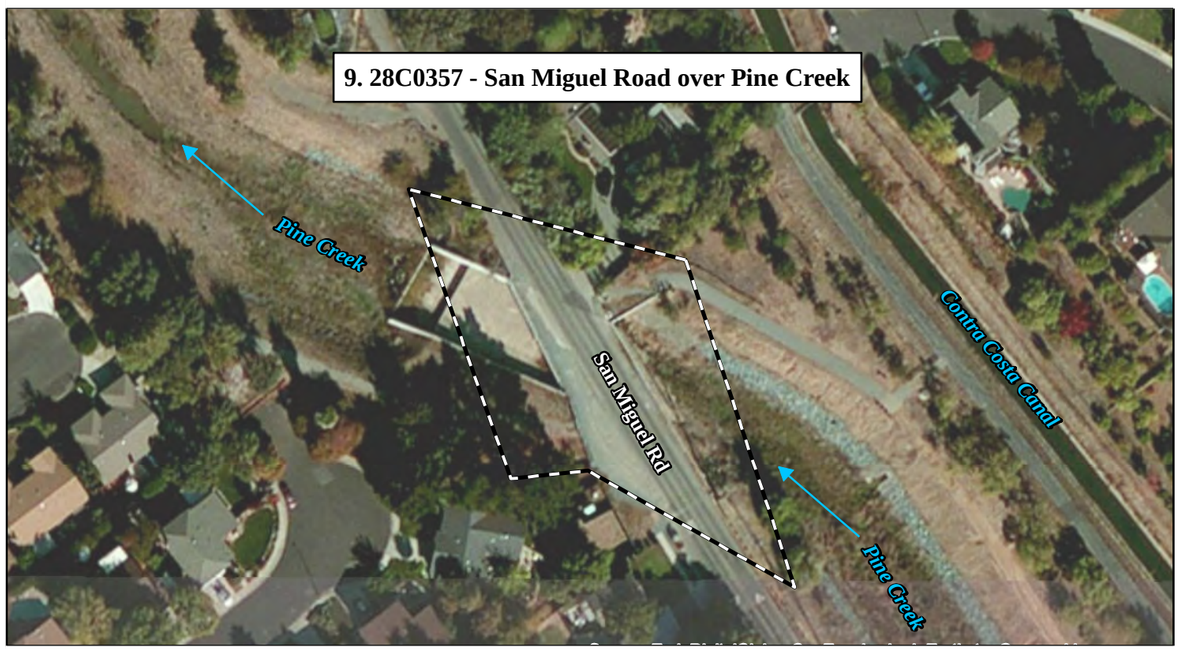
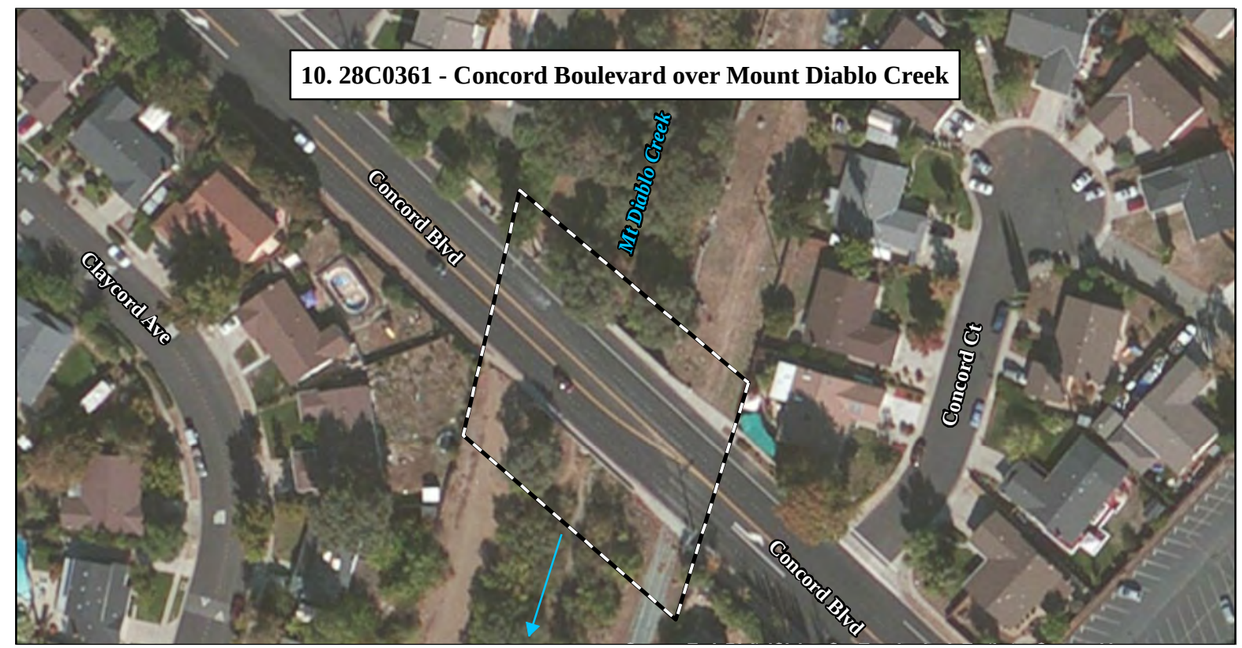
FIGURE 3b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Biological Study Area







Caltrans

LEGEND

Biological Study Area

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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FIGURE 3c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Biological Study Area

Table 1: Federally Listed or Proposed Species Known to Occur or Potentially Occurring in the BSA[1]

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Rationale
Mammals					
Reithrodontomus raviventris	Salt marsh harvest mouse	FE	Found in the marshes of Corte Madera, Richmond, and South San Francisco bay. Pickleweed (*Salicornia virginica*) is primary habitat, used for food and cover. This species is restricted to saline or brackish marsh habitats.	A	There is no suitable habitat for this species; pickleweed was not observed in the BSA.
Vulpes macrotis mutica	San Joaquin kit fox	FE	Annual grasslands or grassy open stages with scattered vegetation; need loose-textured soils for burrowing, and a suitable prey base.	A	Suitable habitat is not present; there are no large, open grasslands within the BSA.
Birds					
Charadrius alexandrines nivosus	Western snowy plover	FT	Sandy beaches, salt pond levees, and shores of alkali lakes. Breeds on coastal beaches from Washington to Baja.	A	Suitable habitat is not present in the BSA; there are no sandy beaches, pond levees or alkali flats.
Pelecanus occidentalis californicus	California brown pelican	FE	Nests in colonies on offshore areas that is free from predators and human disturbance. This species uses breakwaters, jetties, sand spits and sand bars extensively as daytime loafing and nocturnal roost areas.	A	Suitable habitat is not present in the BSA; there is no ocean or coastal habitat present.
Rallus longirostris obsoletus	California clapper rail	FE	Found in a range of salt and brackish water marshes, typically dominated by pickleweed and Pacific cordgrass. Uses a small network of small tidal slough for foraging with nests constructed near foraging sites.	A	Suitable habitat is not present; no marshes are present in the BSA. Furthermore, no pickleweed or Pacific cordgrass were observed in the BSA.
Sternula antillarum browni	California least tern	FE; SE (nesting colony)	Nests in areas relatively free of human or predatory disturbance. Nests on barren to sparsely vegetated sites near water, usually on a sandy or gravelly substrate. Requires unpolluted, shallow-water feeding areas in lagoons and estuaries, year-round.	A	Suitable habitat is not present; the BSA is located in a highly urbanized area.

[1] Table 1 does not include species under the jurisdiction of the NMFS.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Rationale
Reptiles					
Masticophis lateralis euryxanthus	Alameda whipsnake	FT	This species inhabits a variety of chaparral, coastal sage scrub and coastal scrub. This species forages on rocky outcrops and utilizes rodent burrows, rocks and crevices for protection.	A	Suitable habitat is not present in the BSA; there is no rocky outcrop, coastal or sage scrub present.
Thamnophis gigas	Giant garter snake	FT	Streams and sloughs, usually with mud bottom. One of the most aquatic of garter snakes; usually in areas of freshwater marsh and low-gradient streams with emergent vegetation, also drainage canals and irrigation ditches and ponds and small lakes.	A	The BSA is out of range for this species.
Amphibians					
Ambystoma californiense	California tiger salamander	FT; ST	Most commonly found in annual grassland habitat, but also occurs in grassy understory of valley-foothill hardwood habitats, and uncommonly along stream courses in valley-foothill riparian habitats. Requires vernal pools or other seasonal water bodies for breeding. Needs underground refuges, especially ground squirrel burrows.	A	Although the BSA is located within the range of the species, no suitable aquatic or upland habitat is present in the BSA.
Rana draytonii	California red-legged frog	FT, CSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation.	HP	This species has been highly documented within the search area. Suitable habitat for this species is present at all 10 bridges. See discussion in Section 4.2.
Invertebrates					
Apodemia mormo langei	Lange's metalmark butterfly	FE	This species is endemic to the Antioch Dunes. The Lange's metalmark butterfly lays its eggs on a subspecies of naked buckwheat (*Erogiomun nudum var. auriculatum*).	A	The BSA is not within the Antioch Dunes and naked buckwheat was not observed in the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Rationale
Branchinecta conservatio	Conservancy Fairy shrimp	FE	Endemic to California and is known to occur in several disjunct populations ranging from Tehama to Ventura counties. The conservancy fairy shrimp occurs in vernal pools found on several different landforms, geologic formations and soil types. They have been observed in vernal pools ranging in size from 323 to 3,834,675 square ft. Observations suggest this species is often found in pools that are relatively large and turbid.	A	Suitable habitat is not present, no vernal pools were observed in the BSA.
Branchinecta longiantenna	Longhorn fairy shrimp	FE	Endemic to California vernal pool habitat within the Central Valley. This species is dependent on seasonally inundated vernal pools.	A	Suitable habitat is not present, no vernal pools were observed in the BSA.
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*). Prefers branches greater than 1 inch in diameter.	A	Suitable habitat is not present, no blue elderberry was observed in the BSA.
Elaphrus viridis	Delta green ground beetle	FT	Slopes, ridges, chaparral, broad-leafed upland forest, coastal scrub and woodlands.	A	Suitable habitat is not present, no slopes or ridges are within the BSA.
Lepidurus packardi	Vernal pool tadpole shrimp	FE	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. Within the Sacramento Valley.	A	Suitable habitat is not present, no vernal pools were observed within the BSA.
Speyeria callippe callippe	Callippe silverspot butterfly	FE	Found in native grassland and adjacent habitat. This species lays their eggs on dry remains of the Johnny-jump-up (*Viola pedunculata*) or surrounding debris.	A	Suitable habitat is not present, the Johnny-jump-up plant was not observed within the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Rationale
Syncaris pacifica	California freshwater shrimp	FE	Found in a variety of natural, and artificial, seasonally ponded habitat types including: vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. Within the Sacramento Valley.	A	Suitable habitat is not present, no vernal pools were observed within the BSA.
Plants					
Amsinckia grandiflora	Large flowered fiddleneck	FE	Valley grassland and foothill woodland, grassy slopes (0 – 980 ft). Blooms April – May.	A	This species is presumed extinct in Contra Costa county.
Arctostaphylos pallida	Pallid manzanita	FT	Slopes, ridges, chaparral, broad-leafed upland forest, coastal scrub and woodlands (650 – 1,600 ft.). Blooms January – March.	A	Suitable habitat is not present within the BSA.
Chorizanthe robusta var. robusta	Robust spineflower	FE	Sand or gravelly in dunes, openings and coastal regions (0 – 980 ft.). Blooms May – September.	A	No sand or gravelly dunes were observed within the BSA, suitable habitat is not present.
Clarkia franciscana	Presidio clarkia	FE	Serpentine soils in coastal scrub and valley grasslands (80 – 1110 ft.). Blooms May – June.	A	Suitable habitat is not present, no serpentine soils were observed within the BSA.
Cordylanthus mollis ssp. mollis	Soft bird's beak	FE	Coastal salt marshes (0 – 32 ft.). Blooms July – November.	A	Suitable habitat is not present; there are no coastal marshes within the BSA.
Erysimum capitatum ssp. capitatum	Contra Costa wallflower	FE	Open areas, alpine, deserts, woodlands and sandy areas (0 – 10,700 ft.) Blooms March – September.	A	No sandy area, deserts or open areas are present within the BSA.
Holocarpha macradenia	Santa Cruz tarplant	FT	Grassy areas, clay soils (0 – 650 ft.). Blooms June – November.	A	Suitable habitat is present however this species was not observed during focused survey. This species is presumed to be absent from the BSA.
Lasthenia conjugens	Contra Costa goldfields	FE	Vernal pool, wet meadows (0 – 590 ft.). Blooms March – June.	A	Suitable habitat is not present in the BSA.
Neostapfia colusana	Colusa grass	FT	Vernal pools (0 – 328 ft.) Blooms May – August.	A	No vernal pools are present within the BSA.

Scientific Name	Common Name	Status	Habitat Requirements	Habitat Present/ Absent	Rationale
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	FE	Sandy bluffs and dunes (0 – 30 ft.) Blooms March – September.	A	Suitable habitat is not present; there are no sandy bluffs or dunes within the BSA.
Sidalcea keckii	Keck's checker-mallow	FE	Grassland, serpentine, clay (520 – 2,230 ft.) Blooms April – June.	A	The BSA, located below 400 ft. elevation, is out of range for this species.

Federal
FE: Federally listed; Endangered
FT: Federally listed, Threatened
FPE: Federally Proposed for Listing as Endangered
FPT: Federally Proposed for Listing as Threatened
FC: Federal Candidate
NMFS SC: National Marine Fisheries Service Species of Concern

2.2. Studies Required

The studies required to fully document the environmental conditions of the BSA included vegetation delineation mapping and jurisdictional waters delineation.

2.2.1. Field Surveys

2.2.1.1. Vegetation Mapping

Vegetation was classified according to A Manual of California Vegetation (Sawyer, Keeler-Wolf, and Evans 2008), as appropriate. The names of the plant species are consistent with The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin, B.G., et. al., editors 2012).

2.2.1.2. Potential Jurisdictional Waters Determination and Delineation

Potential waters of the U.S. in the BSA were delineated in accordance with the Army Corps of Engineers (ACOE) Wetland Delineation Manual (1987 Manual), the September 2008 Regional Supplement – Arid Region West, and the ACOE Regulatory Guidance Letter 08-02 regarding Preliminary Jurisdictional Delineations (June 2008).

The field investigation was conducted in accordance with the ACOE Routine Approach for small areas (i.e., equal to or less than 5 ac), as described in the 1987 Manual. At each point, data was collected for soils, hydrology, and vegetation where necessary to determine the extent of potential waters of the United States. Data sheets are included in Appendix D. The limits of California Department of Fish and Wildlife (CDFW) jurisdiction were also delineated.

2.3. Personnel and Survey Dates

The field surveys were conducted by LSA biologist, Mike Trueblood, on April 13-14 and July 17, 2011.

2.4. Limitations That May Influence Results

No problems or limitations were encountered during the research, fieldwork, or document preparation that influences the results presented herein.

Chapter 3. Results: Environmental Setting

The BSA is located at 10 different bridge locations in the City of Concord, in northern Contra Costa County. Lands directly adjacent to the bridges are generally developed urban residential and commercial settings. Undeveloped lands in the vicinity are limited to vacant lots, road shoulders, annual brome grasslands, and narrow riparian corridors associated with some of the bridges.

3.1. Description of Existing Biological and Physical Conditions

3.1.1. Biological Study Area

The BSA is comprised of 10 distinct study areas, one at each of the 10 bridge locations. Below is a brief description of the environmental condition at each bridge. Representative photos are shown in Figures 4a-4c.

1. **28C0091L** – *Concord Avenue over Walnut Creek* – The BSA at this bridge is located within the central portion of the City in an urbanized area. Surrounding lands consist of urbanized commercial and industrial areas, including the Buchanan Field Airport. Developed areas in within this BSA consist of the Concord Avenue Bridge and bridge approaches. The only natural communities that occur in this BSA is annual brome grassland and open water.
2. **28C0091R** – *Concord Avenue over Walnut Creek* – The BSA at this bridge is incorporated into the BSA for bridge 28C0091L above, as these two bridges constitute both directions of traffic along Diamond Boulevard over Walnut Creek.
3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – The BSA at this bridge is located in the far eastern part of the City in a developed area. The area surrounding the project site consists of urban residential and commercial development, with the exception of a vacant lot southeast of the bridge. Natural communities that occur within the BSA are limited to the annual brome grassland and black willow thicket associated with Galindo Creek.

Looking west at the Concord Avenue Bridge over Walnut Creek (Bridge NO. 28C0091L/R).

Looking at the bridge on Ygnacio Valley Road over Galindo Creek (Bridge NO. 28C0115).

Looking west at the Willow Pass Road bridge at Walnut Creek (Bridge NO. 28C0183).

Looking west at the Court Lane Bridge over Galindo Creek (Bridge NO. 28C0221).

Caltrans

FIGURE 4a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Representative Photos

SOURCE: LSA Associates, Inc. (2014).

I:\Aem1101\AI\USFWS-NMFS BA\Figure 4a.ai (10/29/2014)

Looking west under the bridge at St. Francis Drive over Galindo Creek (Bridge NO. 28C0222).

Looking upstream at the Whitman Road Bridge over SDM Channel (Bridge NO. 28C0224).

Looking downstream from the Whitman Road Bridge over SDM Channel (Bridge NO. 28C0224).

Looking downstream from the Claudia Drive Bridge over Holbrook Channel (Bridge NO. 28C0278).

Caltrans

FIGURE 4b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Representative Photos

SOURCE: LSA Associates, Inc. (2014).

I:\Aem1101\AI\USFWS-NMFS BA\Figure 4b.ai (10/29/2014)

Looking upstream from the Claudia Drive Bridge over Holbrook Channel (Bridge NO. 28C0278).

Looking downstream from the San Miguel Road Bridge over Pine Creek (Bridge NO 28C0357).

Looking upstream from the San Miguel Road Bridge over Pine Creek (Bridge NO. 28C0357).

Looking downstream from the Concord Boulevard Bridge over Mount Diablo Creek (Bridge NO. 28C0231).

Caltrans

FIGURE 4c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Representative Photos

SOURCE: LSA Associates, Inc. (2014).

I:\Aem1101\AI\USFWS-NMFS BA\Figure 4c.ai (10/29/2014)

4. **28C0183** – *Willow Pass Road over Walnut Creek* - The BSA at this bridge is located in the central part of the City in an urbanized commercial area. Surrounding areas consist of commercial development and a freeway. Natural communities within the BSA are annual brome grassland, cattail marsh and open water.
5. **28C0221** – *Court Lane over Galindo Creek* - The BSA at this bridge is located in the eastern part of the City in a developed residential area. There is no natural vegetation community within this BSA; landscaped vegetation and ruderal/ruderal grassland are the only vegetation communities in the BSA.
6. **28C0222** – *St. Francis Drive over Galindo Creek* – The BSA at this bridge is located in the eastern part of the City in a developed residential area. The only vegetation communities that occur within the BSA are landscape vegetation and ruderal/ruderal grassland.
7. **28C0224** – *Whitman Road over SDM Channel* – The BSA at this bridge is located in the southern part of the City in an urban residential area. The natural communities that occur within the BSA consist of cattail marsh, ruderal/ruderal grassland, and open water.
8. **28C0278** – *Claudia Drive over Holbrook Channel* – The BSA at this bridge is located in the northern part of the City in an urban residential area. Vegetation communities that occur within this area include ruderal/ruderal grassland and landscaped vegetation from the neighboring residences.
9. **28C0357** – *San Miguel Road over Pine Creek* – The BSA at this bridge is located in the southern part of the City in a developed residential area. Developed features within the BSA include the San Miguel Bridge, bridge approaches and the Contra Costa Canal Trail. The vegetation within BSA includes landscaped vegetation and cattail marsh.
10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – The BSA at this bridge is located in the far eastern part of the City in an urban residential area. Vegetation communities that occur within the BSA include Valley oak riparian associated with Mount Diablo Creek and ruderal/ruderal grasslands.

3.2. Vegetation Communities/Land Uses

Vegetation in the BSA was characterized in accordance with A Manual of California Vegetation, Second Edition (Sawyer, Keeler-Wolf, and Evans 2008), as appropriate. The descriptions of vegetation communities are modified to be consistent with the

plant species composition observed in the BSA. The names of the plant species are consistent with The Jepson Manual: Vascular Plants of California, Second Edition (Baldwin, B. G., et. al., editors 2012). Vegetation communities and land uses occurring in the BSA, as described below, include annual brome grassland, black willow thicket, valley oak woodland, cattail marsh, landscaped vegetation, ruderal/ruderal grassland, open water and developed (Figures 5a-5c).

3.2.1. Annual Brome Grassland

The annual brome grassland community is located at three different bridge crossings (Concord Avenue over Walnut Creek, Ygnacio Valley Road over Galindo Creek and Willow Pass Road over Walnut Creek). This community is dominated by annual grasses including ripgut grass (*Bromus diandrus*), and wild oats (*Avena fatua*), wild radish (*Raphanus sativus*), and Johnson grass (*Sorghum halepense*) are also representative. The annual brome grassland community comprises approximately 1.50 ac in the BSA.

3.2.2. Black Willow Thicket

The black willow riparian community is a natural community dominated by black willow (*Salix nigra*); other associated species include balsam poplar (*Populus balsamifera*) and California black walnut (*Juglans californica hindsii*), Fremont's cottonwood and California black walnut. This community is only located at the Ygnacio Valley Road over Galindo Creek bridge. The black willow thicket community comprises approximately 0.26 ac in the BSA.

3.2.3. Valley Oak Woodland

The Valley oak riparian community is a natural community with a homogeneous canopy dominated by Valley oak (*Quercus lobata*); understory vegetation consists of annual brome grasses, Himalayan blackberry (*Rubus armeniacus*), and ivy (*Hedera canariensis*). This community is located along Mount Diablo Creek at the Concord Boulevard crossing. The Valley oak riparian community comprises approximately 0.19 ac in the BSA.

3.2.4. Cattail Marsh Community

The cattail marsh community is a natural community that is dominated by broadleaf cattail (*Typha latifolia*). Other species that are present within this community include Baltic rush (*Juncus balticus*) and Italian ryegrass (*Lolium multiflorum*). This community is located at three bridge locations (Willow Pass Road over Walnut Creek, Whitman Road over the SDM Channel, and San Miguel Road over Pine Creek). This community comprises 0.18 ac of the BSA.

Caltrans

LEGEND

Biological Study Area

Natural Communities / Land Uses - (7.95 ac)

- Annual Brome Grassland - (1.50 ac)
- Valley Oak Woodland - (0.19 ac)
- Black Willow Thicket - (0.26 ac)
- Cattail Marsh - (0.18 ac)
- Open Water - (0.18 ac)
- Ruderal/Ruderal Grassland - (0.48 ac)
- Landscape Vegetation - (0.30 ac)
- Developed - (4.86 ac)

N

0 50 100
FEET

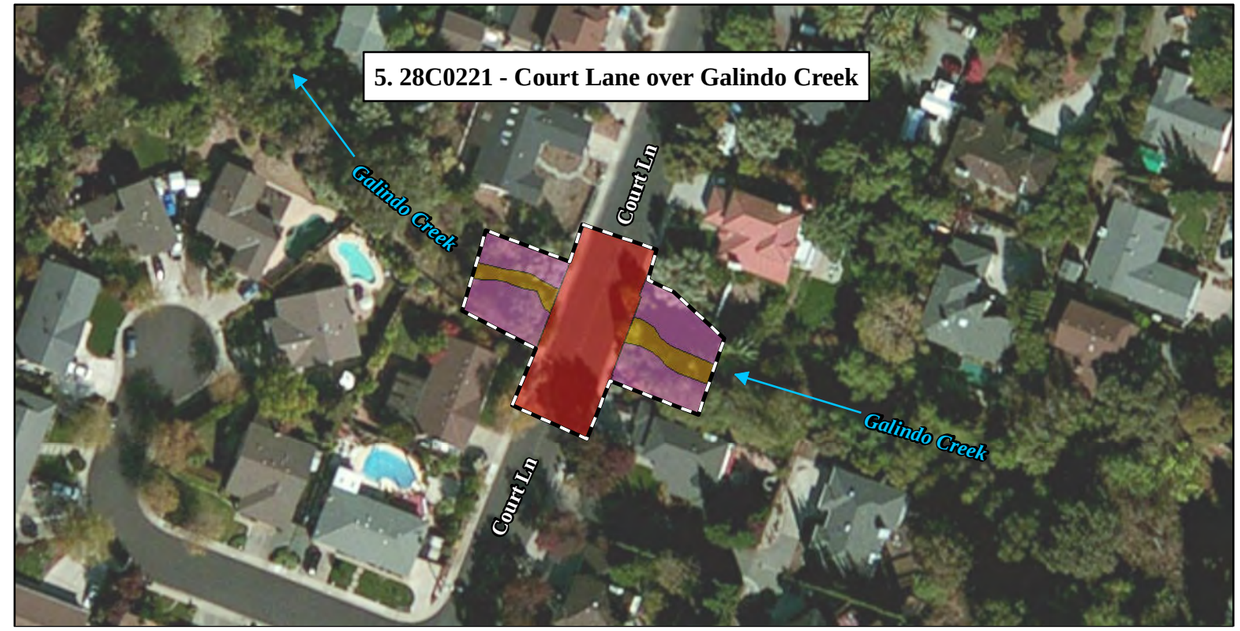
SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

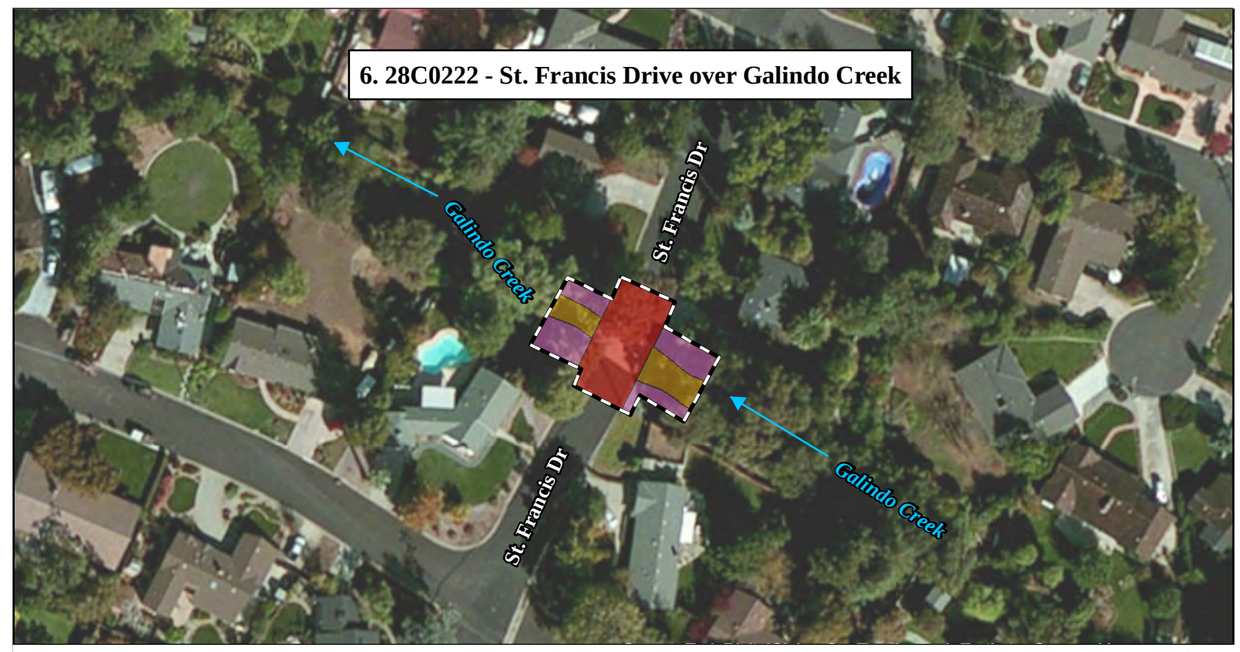
I:\Aem1101\GIS\Nes-fig5a_plnt_comm.mxd (10/29/2014)

FIGURE 5a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Natural Communities / Land Uses





Caltrans

LEGEND

Biological Study Area

Natural Communities / Land Uses - (7.95 ac)

- Annual Brome Grassland - (1.50 ac)
- Valley Oak Woodland - (0.19 ac)
- Black Willow Thicket - (0.26 ac)
- Cattail Marsh - (0.18 ac)
- Open Water - (0.18 ac)
- Ruderal/Ruderal Grassland - (0.48 ac)
- Landscape Vegetation - (0.30 ac)
- Developed - (4.86 ac)

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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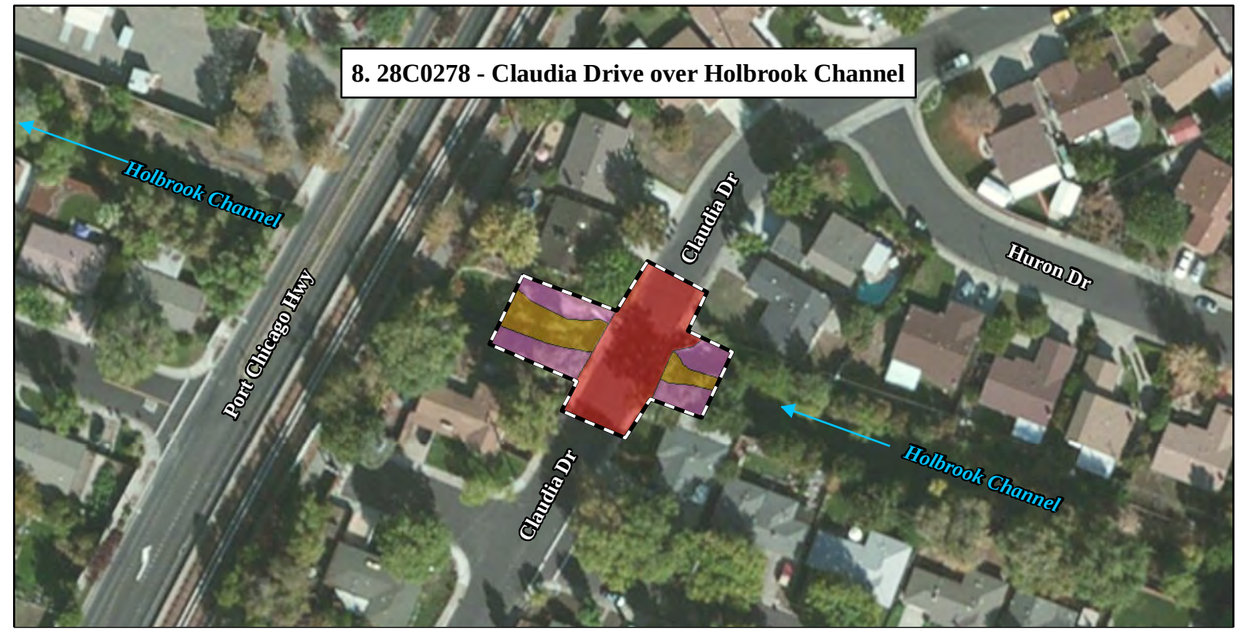
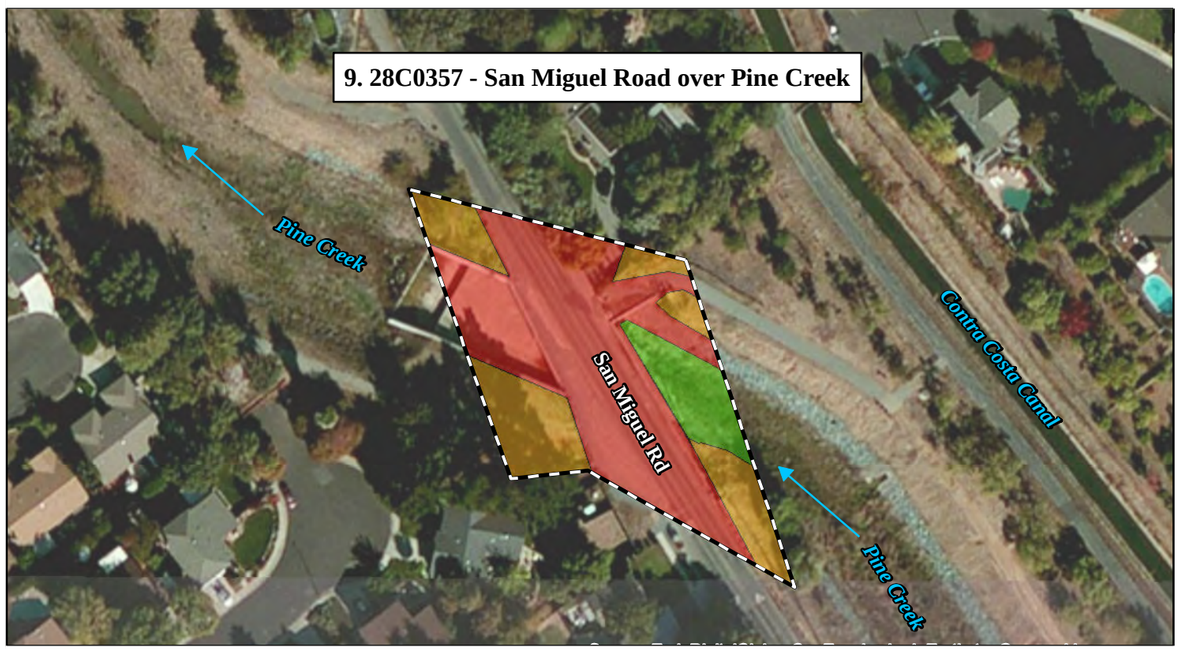
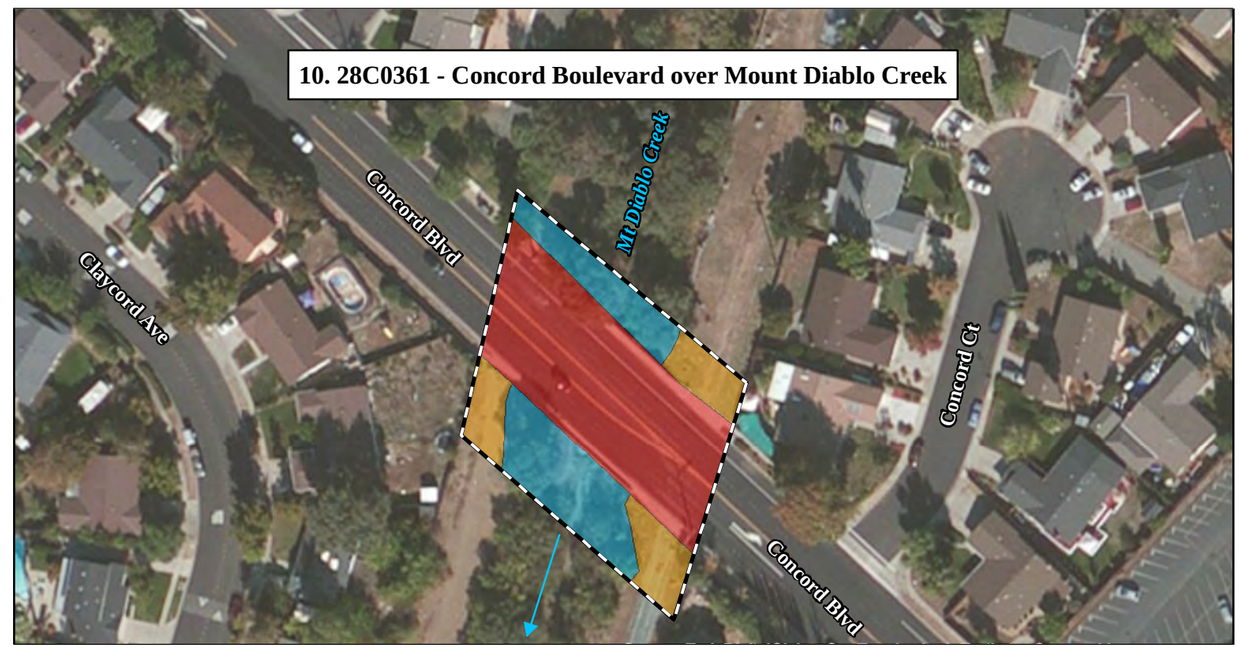
FIGURE 5b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Natural Communities / Land Uses







LEGEND

- Biological Study Area

Natural Communities / Land Uses - (7.95 ac)

- Annual Brome Grassland - (1.50 ac)
- Valley Oak Woodland - (0.19 ac)
- Black Willow Thicket - (0.26 ac)
- Cattail Marsh - (0.18 ac)
- Open Water - (0.18 ac)
- Ruderal/Ruderal Grassland - (0.48 ac)
- Landscape Vegetation - (0.30 ac)
- Developed - (4.86 ac)

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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FIGURE 5c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Natural Communities / Land Uses

3.2.5. Ruderal/Ruderal Grassland

Ruderal areas are lands that have been altered by human actions such that the natural communities no longer exist. The disturbed ruderal community in the BSA is composed of grasses and some vegetation in a small-developed area. Vegetation growing in this community include wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), and cheeseweed mallow (*Malva parviflora*). This community is common within the BSA and is located at five bridges (Court Lane over Galindo Creek, St. Francis Drive over Galindo Creek, Whitman Road over SDM Channel, Claudia Drive over Holbrook Channel, and Concord Boulevard over Mt. Diablo Creek. This community comprises 0.48 ac of the BSA.

3.2.6. Landscaped Vegetation

This community is dominated by landscape plants from the neighboring residences that are present within the BSA. Landscaped plants present include Sanford's arrowhead (*Sagittaria sanfordii*), palm species (*Arecaceae* sp.), iris species (*Iris* sp.) and ivy species (*Hedera* sp.). This community is not considered natural and is located at four bridges within the BSA (Court Lane over Galindo Creek, St. Francis Drive over Galindo Creek, Claudia Drive over Holbrook Channel, and San Miguel Road over Pine Creek). This community comprises 0.30 ac in the BSA.

3.2.7. Open Water

Open water habitat is defined as unvegetated aquatic habitat along a natural bottomed bed and bank, and is considered a natural community. Within the BSA, this community is found only at two bridge locations, Willow Pass Road over Walnut Creek and Whitman Road over SDM Channel. The open water community comprises approximately 0.18 ac in the BSA.

3.2.8. Developed

Developed areas include the bridge, bridge approaches, and roadways. There is no vegetation within the developed community. Every bridge with the BSA has developed areas. The developed areas comprise approximately 4.86 ac in the BSA.

3.3. Aquatic Resources

Aquatic Resources within the BSA include the SDM Channel, Walnut Creek, Mount Diablo Creek, Pine Creek, Holbrook Creek, and Galindo Creek.

Jurisdictional waters include wetlands and other waters that fall under the jurisdiction of the ACOE pursuant to Section 404 of the Clean Water Act (CWA), the Regional

Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA or the Porter-Cologne Water Quality Control Act, or the CDFW pursuant to Sections 1600-1616 of the CDFW Code.

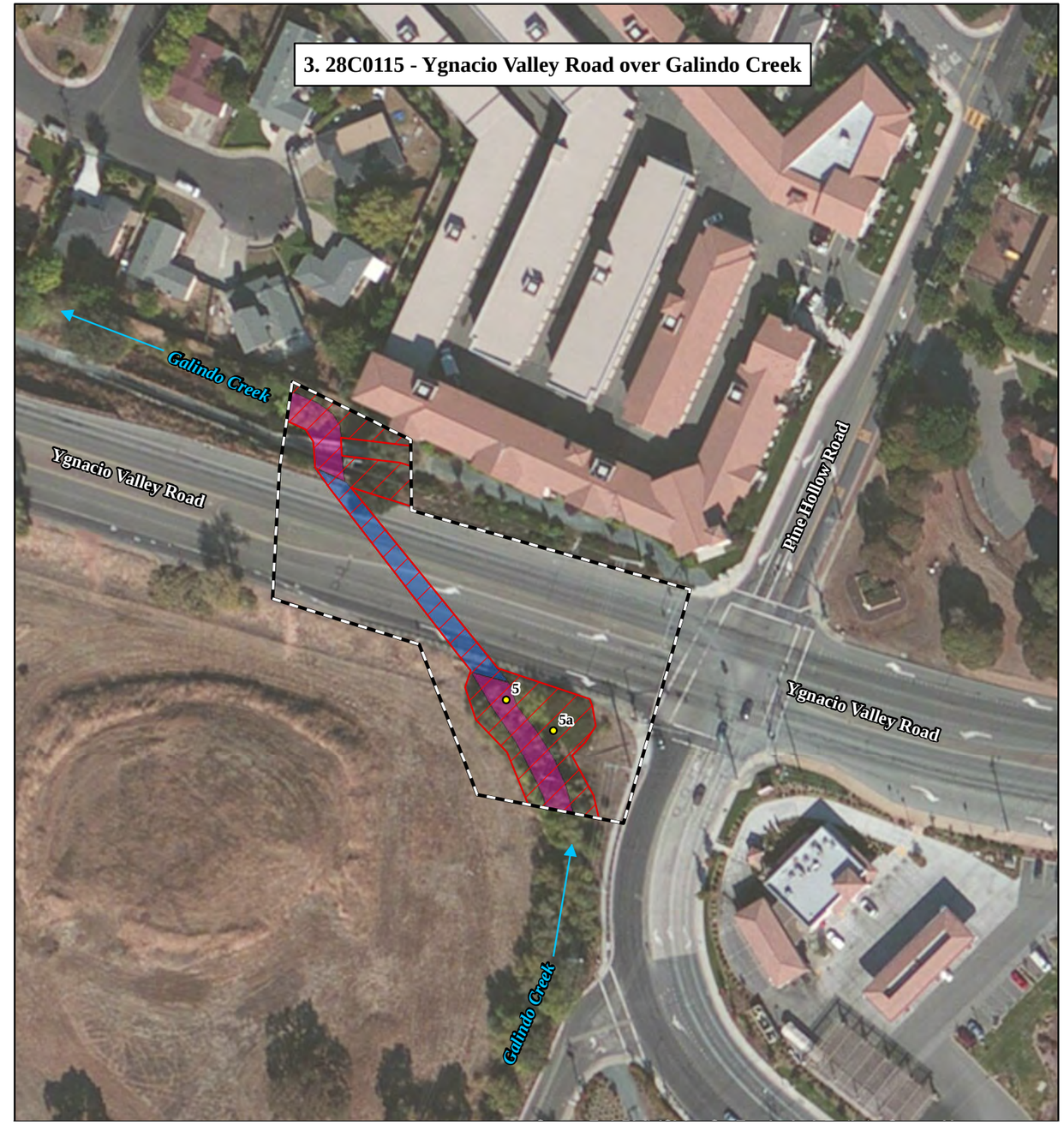
Potential jurisdictional waters within the BSA are limited to the reach of Galindo Creek, Mount Diablo Creek, Walnut Creek, Holbrook Creek, SDM Channel, and Pine Creek and their associated riparian habitats.

Waters of the U.S. for all 10 bridges total 3.30 ac. Wetlands, totaling 0.40 ac are limited to the low-flow banks of Holbrook Channel at Claudia Avenue, Galindo Creek at Ygnasio Valley Road and Court Lane, Walnut Creek at Willow Pass Road, and Whitman Road at SDM Channel crossing. Non-wetland waters, totaling 2.90 ac, consist of all other waters below the ordinary high water mark that were determined not to support wetlands.

As noted in Section 2, data collection occurred on April 13-14, 2011 and July 27, 2011; wetland data sheets are included in Appendix D. Figures 6a-6c show the potential jurisdictional waters in the BSA, which are also summarized in Table 2.

Table 2: Potential Jurisdictional Waters in the BSA (acres)

Bridge No.	Potential Waters of the U.S.			CDFW Waters
	Wetlands	Non-Wetland Waters	Total	
28C0091L 28C0091R	0.01	1.03	***1.04***	1.04
28C0115	0.09	0.07	***0.16***	0.32
28C0183	0.08	1.16	***1.24***	1.24
28C0221	0.02	0.07	***0.09***	0.09
28C0222	0.00	0.05	***0.05***	0.05
28C0224	0.07	0.08	***0.15***	0.15
28C0278	0.03	0.04	***0.07***	0.07
28C0357	0.06	0.23	***0.29***	0.29
28C0361	0.00	0.16	***0.16***	0.28
Total	**0.36**	**2.89**	**3.25**	**3.53**



Caltrans

LEGEND

- Biological Study Area
- Data Points
- CDFW Waters - (3.54 ac)

Potential Jurisdictional Waters of the U.S. - (3.30 ac)

- Wetlands - (0.40 ac)
- Non-wetland Waters - (2.90 ac)

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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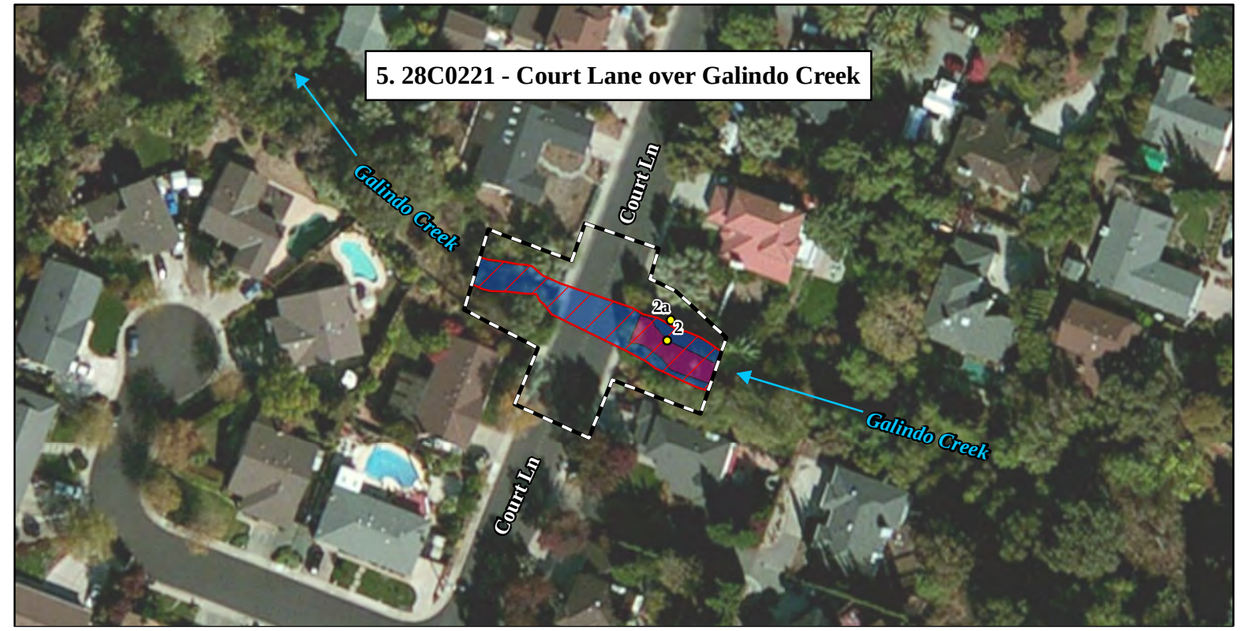
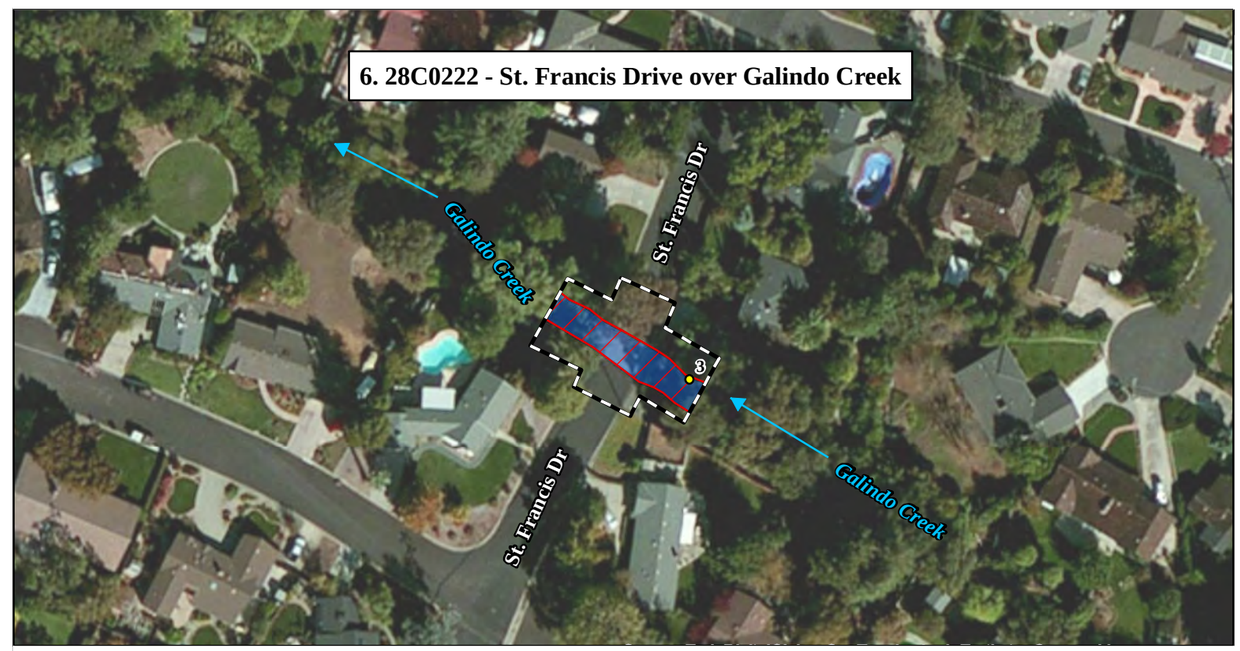
FIGURE 6a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Potential Jurisdictional Waters





Caltrans

LEGEND

- Biological Study Area
- Data Points
- CDFW Waters - (3.54 ac)

Potential Jurisdictional Waters of the U.S. - (3.30 ac)

- Wetlands - (0.40 ac)
- Non-wetland Waters - (2.90 ac)

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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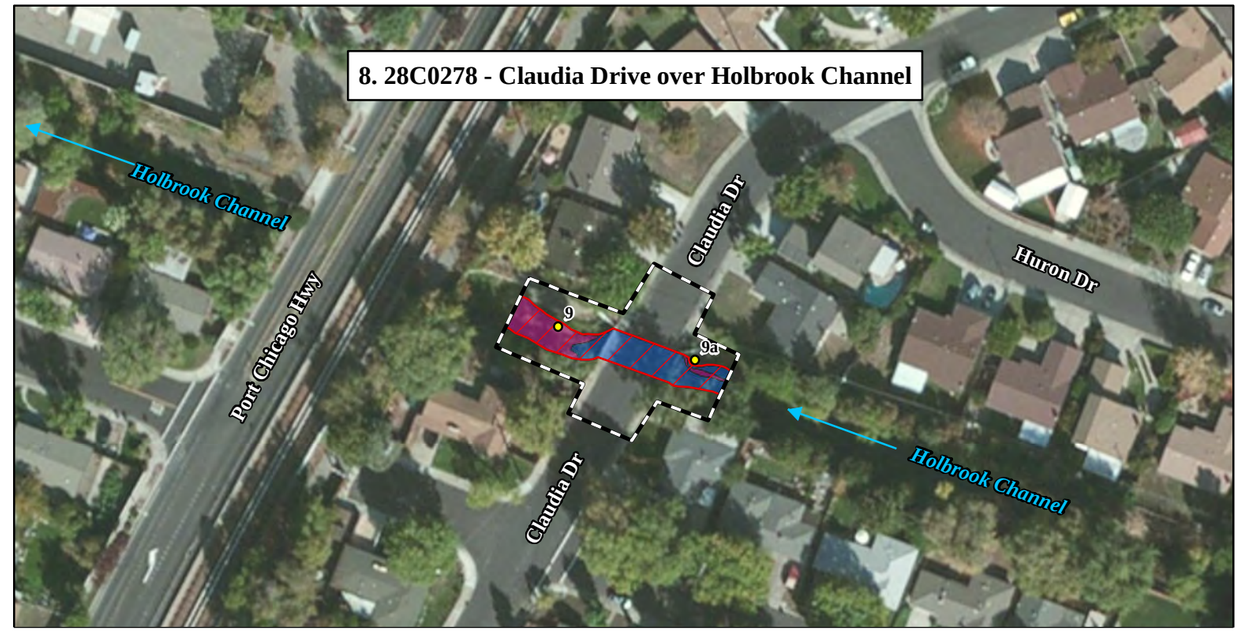
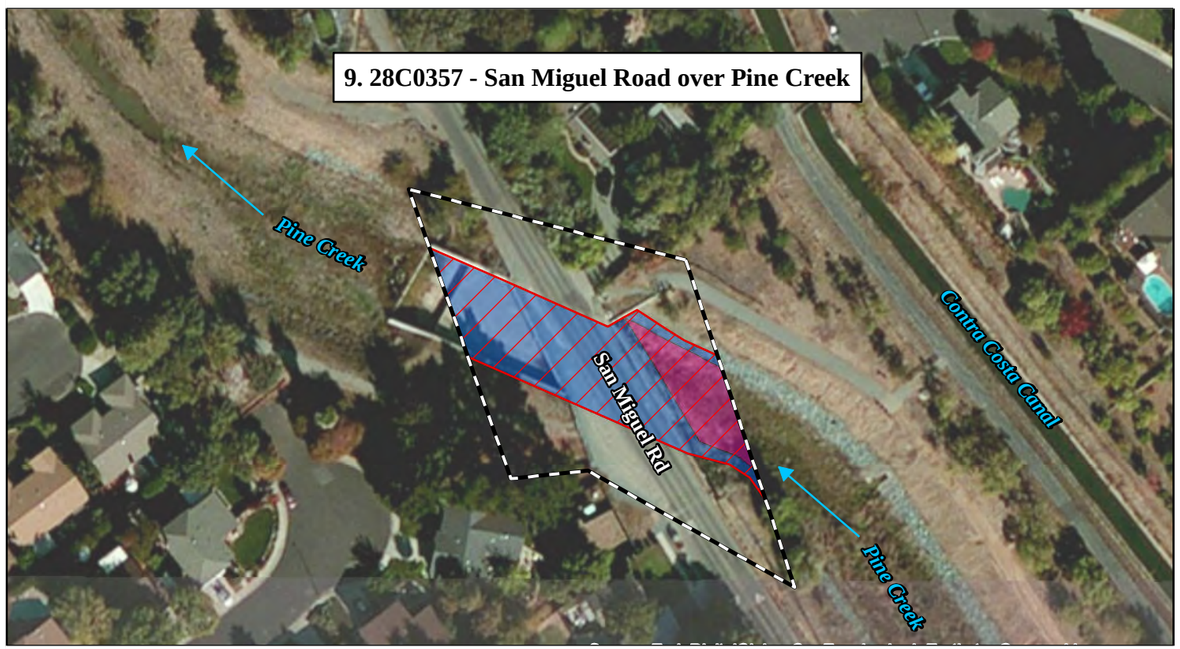
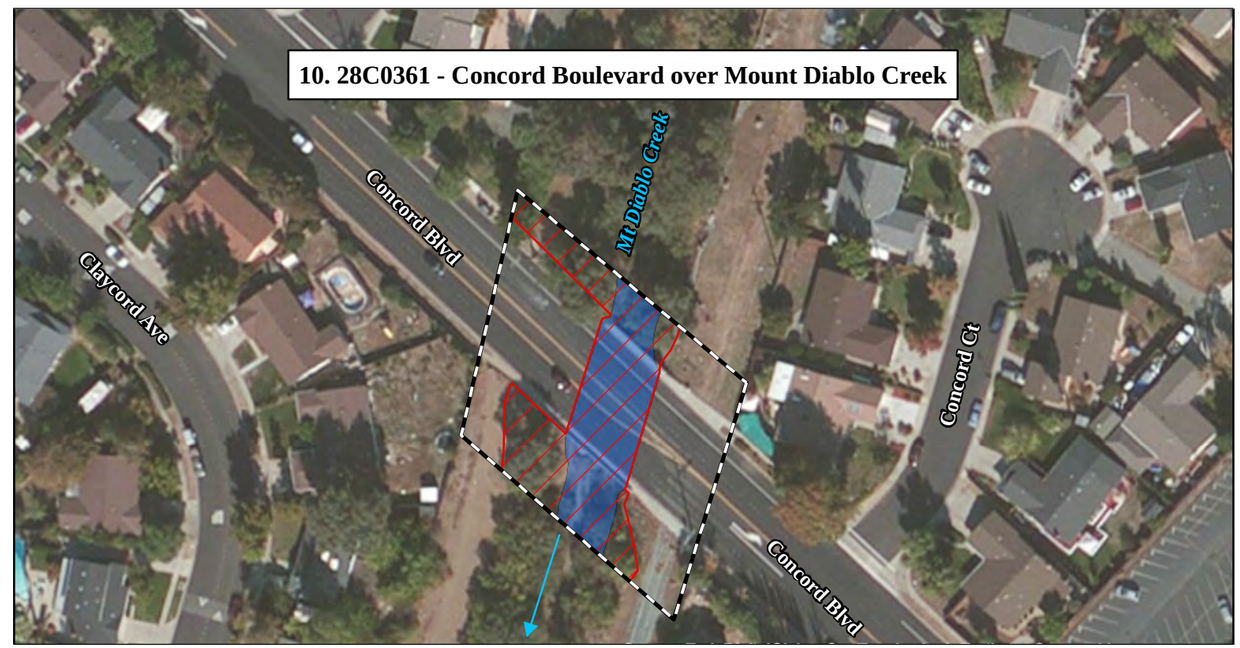
FIGURE 6b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Potential Jurisdictional Waters







LEGEND

- Biological Study Area
- Data Points
- CDFW Waters - (3.54 ac)

Potential Jurisdictional Waters of the U.S. - (3.30 ac)

- Wetlands - (0.40 ac)
- Non-wetland Waters - (2.90 ac)

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

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FIGURE 6c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Potential Jurisdictional Waters

3.4. General Wildlife Usage/Movement Corridors

Wildlife usage in the various habitats within the BSA is focused around the creeks and channels. The vegetation and riparian corridors around the streams provide suitable migration habitat for a variety of wildlife species. Species that may occur in the BSA include, but are not limited to, raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), bullfrog (*Lithobates catesbeiana*), western fence lizard (*Sceloporus occidentalis*), western terrestrial garter snake (*Thamnophis elegan elegans*), western scrub jay (*Aphelocoma coerulescens*), rock dove (*Columba livia*), American crow (*Corvus brachyrhynchos*), Brewer's blackird (*Euphagus cyanocephalus*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), black phoebe (*Sayornis nigricans*), European starling (*Sturnus vulgaris*), and American robin (*Turdus migratorius*).

Although the developed areas and ruderal vegetation do not provide high quality habitat for wildlife species, the creeks within the BSA do provide an important ecological link between Mount Diablo State Park, to the southwest, and Suisun Bay, to the north. Common wildlife species may utilize the riparian and creek corridors for migration purposes. In addition, trees associated with adjacent residences and/or businesses may provide nesting habitat for several bird species.

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

The following species were determined to have a real potential to occur within the BSA based on specific habitat requirements. If a species is known to occur in the BSA, or could potentially occur but presence/absence surveys were not conducted, an in depth discussion is provided below. If, after further investigation, it was determined that a species is not likely to occur in the BSA or presence/absence surveys produced negative results, this information is documented in Table 1 and no further discussion is provided.

4.1. Federally Listed/Proposed Plant Species

No federally listed or proposed plant species occur in the BSA, and therefore none would be affected by the proposed project.

4.2. Federally Listed/Proposed Wildlife Species

4.2.1. California Red-Legged Frog

The California red-legged frog (*Rana draytonii*) (CRLF) is federally listed as threatened. The CRLF inhabits lowlands and foothills in or near permanent sources of water. This frog prefers ponds, creeks, or marshes with extensive shoreline vegetation. Intermittent streams provide suitable habitat if some surface water remains through the summer. Breeding generally occurs in ponds or stream pools that contain water through late summer and support dense, shrubby, or emergent vegetation such as overhanging willows intermixed with cattails. However, breeding habitat can be varied and may include sag ponds, lagoons, stock ponds, and backwaters within streams and creeks.

CRLF use upland areas and riparian vegetation for resting, feeding, dispersal, and estivation. Riparian areas can meet all of these needs; the scope of upland habitat use is not well understood. CRLF may spend considerable time in suitable upland areas during the summer dry period. They may use a variety of places for estivation, including small mammal burrows, cracks at the bottom of a dry pond, spaces under boulders, rocks, and downed trees, and agricultural features such as drains, watering troughs, and abandoned sheds. Dispersal may occur across varying topography and vegetation type, and during winter rain events CRLF may travel up to 2 miles between water sources. Use of upland

and riparian areas is most likely dependent on a number of factors, such as climatic conditions, habitat suitability, and life stage.

4.2.1.1. Survey Results

The BSA is located within the current range of the CRLF and all 10 bridges provide suitable aquatic non-breeding habitat and upland estivation habitat for this species. The stream flow at nine of the bridges is too swift to provide breeding habitat for CRLF. Walnut Creek at the Concord Avenue Bridge flows slow enough to provide suitable breeding habitat; however, this reach is not suitable breeding habitat due to the lack of vegetative cover. Walnut Creek at the Concord Avenue Bridge lacks the dense vegetation required for maintaining suitable shelter or water temperatures for breeding.

CRLF is well documented within the search area, with 113 documented occurrences. The two closest CNDDB records to the BSA occur approximately 1.3 miles northeast of the Concord Boulevard over Mount Diablo Creek. The occurrences, dated 2005 and 2008, were observed on the Concord Naval Weapons Station.

The survey results for CRLF at the 10 bridges are described below:

1. **28C0091L** – *Concord Avenue over Walnut Creek* – Walnut Creek is a perennial stream which, unless in severe drought, always holds water. Although there is suitable upland and aquatic non-breeding habitat within the BSA, it is unlikely that CRLF will be present in the BSA. The BSA is located just above the tidal influence and, during high tide; some brackish water may enter the BSA, rendering it unsuitable for CRLF. In addition, there are no documented records or observations of CRLF in Walnut Creek.

2. **28C0091R** – *Concord Avenue over Walnut Creek* – the CRLF habitat at this bridge is incorporated into the BSA for bridge 28C0091L above, as these two bridges constitute both directions of traffic along Concord Avenue over Walnut Creek.

3. **28C0115** – *Ygnacio Valley Road over Galindo Creek* – Galindo Creek is an intermittent creek that provides suitable habitat for CRLF. Galindo Creek flows from Mount Diablo State Park, located southeast of the BSA. CRLF is well documented in and around Mount Diablo State Park and it is likely that CRLF may migrate into the BSA. Galindo Creek provides suitable aquatic non-breeding habitat; the black willow thicket and annual brome grassland provides suitable upland habitat for CRLF.

4. **28C0183** – *Willow Pass Road over Walnut Creek* –With the exception of developed areas, the majority of the BSA provides suitable aquatic non-breeding habitat for CRLF. However, as stated above, there is no history of CRLF occurring in Walnut Creek and the BSA is in a highly developed area, decreasing the likelihood that the species would occur in the BSA.

5. **28C0221** – *Court Lane over Galindo Creek* – As stated above, Galindo Creek provides suitable habitat for CRLF and flows from Mount Diablo, which has a high population of CRLF. The ruderal/ruderal grassland habitats provide suitable aquatic non-breeding habitat; the landscaped vegetation provides suitable upland habitat. CRLF may occur in the BSA.

6. **28C0222** – *St. Francis Drive over Galindo Creek* – As stated above, Galindo Creek provides suitable habitat for CRLF. The ruderal/ruderal grassland habitat provides suitable aquatic non-breeding habitat; the landscaped vegetation provides suitable upland habitat. CRLF could occur in the BSA.

7. **28C0224** – *Whitman Road over SDM Channel* –There are no known occurrences of CRLF in the SDM Channel and the BSA is located in a highly urban area. The BSA provides suitable aquatic non-breeding habitat for CRLF in the open water and cattail marsh; the annual brome grasslands provides suitable upland habitat. It is unlikely that CRLF would occur in the BSA.

8. **28C0278** – *Claudia Drive over Holbrook Channel* –There are no known occurrences or history of CRLF in the Holbrook Channel and the BSA is located in a highly urban area. The BSA provides suitable aquatic non-breeding habitat for CRLF in the ruderal/ruderal grassland habitats. The landscaped vegetation provides suitable upland habitat. It is unlikely that CRLF would occur in the BSA.

9. **28C0357** – *San Miguel Road over Pine Creek* – Pine Creek originates in Mount Diablo State Park; CLRF are known to occur in the State Park and Pine Creek. The BSA provides suitable aquatic non-breeding habitat in the cattail marsh; the annual brome grassland provides suitable upland habitat for CRLF. CRLF may occur in the BSA.

10. **28C0361** – *Concord Boulevard over Mount Diablo Creek* – Mount Diablo Creek flows from Mount Diablo State Park through the Concord Naval Weapons Station and into Suisun Bay. CRLF are well documented upstream, at Mount Diablo State Park, and downstream, at the Concord Naval Weapons Station, of the BSA. The

open water in the BSA provides suitable aquatic non-breeding habitat for CRLF; the ruderal/ruderal grasslands provide suitable upland habitat. CRLF may occur in the BSA.

4.2.1.2. Critical Habitat

The BSA is not located within critical habitat for CRLF. The closest critical is Unit CCS-1, approximately 6 miles southwest.

4.2.1.3. Avoidance and Minimization Efforts

Minimization measures have been developed from the provisions of the CRLF "Programmatic Biological Opinion for Projects Funded or Approved under the Federal Highway Administration's Federal Aid Program (8-8-10-F-58)" dated May 4, 2011, listed below.

At a minimum, the following measures will be taken to reduce adverse effects to CRLF and their habitat:

1. Only USFWS-approved biologists will participate in activities associated with the capture, handling, and monitoring of CRLF.
2. Ground disturbance will not begin until written approval is received from the USFWS that the biologist is qualified to conduct the work.
3. A USFWS-approved biologist will survey the project site 48 hours before the onset of work activities. If any life stage of the CRLF is found and these individuals likely to be or injured by work activities, the approved biologist will be allowed sufficient time to move them from the site before work activities begin. The USFWS-approved biologist will relocate the CRLF the shortest distance possible to a location that contains suitable habitat and will not be affected by activities associated with the proposed project. The relocation site should be in the same drainage to the extent practicable. The Biologist will coordinate with the USFWS on the relocation site prior to the capture of any CRLF. The USFWS-approved biologist will maintain detailed records of any individuals that are moved (e.g., size, coloration, any distinguishing features, photographs [digital preferred]) to assist him or her in determining whether translocated animals are returning to the original point of capture.
4. Before any activities begin on a project, a USFWS-approved biologist will conduct a training session for all construction personnel. At a minimum, the training will include a description of the CRLF and its habitat, the specific measures that are being implemented to conserve the CRLF for the current project, and the

boundaries within which the project may be accomplished. Brochures, books and briefings may be used in the training session, provided that a qualified person is on hand to answer any questions.

5. A USFWS-approved biologist will be present at the work site until all CRLF have been relocated out of harm's way, workers have been instructed, and disturbance of habitat has been completed. After this time, the biologist will designate a person to monitor on-site compliance with all minimization measures. The USFWS-approved biologist will ensure that this monitor receives the training outlined in measure 4 and in the identification of CRLF. If the monitor or the USFWS-approved biologist recommends that work be stopped because CRLF would be affected in a manner not anticipated by the City and the USFWS during review of the proposed action, they will notify the resident engineer (the engineer that is directly overseeing and in command of construction activities) immediately. The resident engineer will either resolve the situation by eliminating the effect immediately or require that all actions, which are causing these effects, be halted. If work is stopped, the USFWS will be notified as soon as is reasonably possible.
6. During project activities, all trash that may attract predators will be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.
7. All refueling, maintenance, and staging of equipment and vehicles will occur at least 60 ft from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat (e.g., on a slope that drains away from the water). The monitor will ensure contamination of habitat does not occur during such operations. Prior to the onset of work, the Contractor shall provide the City with a plan for prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.
8. Habitat contours will be returned to their original configuration at the end of project activities. This measure will be implemented in all areas temporarily disturbed by activities associated with the project, unless the USFWS and the City determine that it is not feasible or modification of original contours would benefit the CRLF.
9. The number of access routes, size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the project goal. Environmentally sensitive areas (ESAs) will be delineated to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to CRLF habitat; this goal includes locating access routes

and construction areas outside of wetlands and riparian areas to the maximum extent practicable.

10. Work will occur during the dry period in the creeks and be limited to June 15 to October 15.
11. To control sedimentation during and after project implementation, The City will implement best management practices (BMPs) outlined in any authorizations or permits, issued under the authorities of the Clean Water Act (CWA) that it receives for the specific project. If BMPs are ineffective, the City will attempt to remedy the situation immediately, in consultation with the USFWS.
12. If a work site is to be temporarily dewatered by pumping, intakes will be completely screened with wire mesh not larger than 0.2 inches to prevent CRLF from entering the pump system. Water will be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any diversions or barriers to flow will be removed in a manner that would allow flow to resume with the least disturbance to the substrate. Alteration of the streambed will be minimized to the maximum extent possible; any imported material will be removed from the streambed upon completion of the project.
13. Unless approved by the USFWS, water will not be impounded in a manner that may attract CRLF.
14. A USFWS-approved biologist will permanently remove any individuals of exotic species such as bullfrogs, signal and red swamp crayfish (*Pacifasticus leniusculus; Procambarus clarkii*), and centrarchid fishes from the project area, to the maximum extent possible. The USFWS-approved biologist will be responsible for ensuring his or her activities are in compliance with the California Fish and Wildlife Code.
15. To ensure that diseases are not conveyed between work sites by the USFWS-approved biologists, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.
16. Project sites will be re-vegetated with an assemblage of native riparian, wetland, and upland vegetation suitable for the area (Table 3). Locally collected plant materials will be used to the extent practicable. Invasive, exotic plants will be controlled to the maximum extent practicable. This measure will be implemented in all areas disturbed by activities associated with the project, unless the USFWS and Caltrans determine that it is not feasible or practical.

Table 3: Native Seed Mix

Scientific Name	Common Name	Rate (Lbs./Acre)	Minimum Percent Germination
Artemisia douglasiana	Mugwort	2.0	50
Baccharis pilularis	Coyote brush	1.0	40
Elymus X triticum	Regreen	10.0	80
Eschscholzia californica	California poppy	2.0	70
Lupinus bicolor	Bicolored lupine	4.0	80

17. The City will not use herbicides as the primary method used to control invasive, exotic plants. However, if the City determines the use of herbicides is the only feasible method for controlling invasive plants at a specific project site, it will implement the following additional protective measures for the CRLF:
    a. The City will not use herbicides during the breeding season for the CRLF.
    b. The City will conduct surveys for the CRLF immediately prior to the start of any herbicide use. If found, CRLF will be relocated to suitable habitat far enough from the project area that no direct contact with herbicides would occur.
    c. Giant reed and other invasive plants will be cut and hauled out by hand and the painted with glyphosate or glyphosate-based products, such as Aquamaster® or Rodeo®.
    d. Licensed and experienced City staff or a licensed and experienced contractor will use a hand-held sprayer for foliar application of Aquamaster® or Rodeo® where large monoculture stands occur at an individual project site.
    e. All precautions will be taken to ensure that no herbicide is applied to native vegetation.
    f. Herbicides will not be applied on or near open water surfaces (no closer than 60 ft from open water).
    g. Foliar applications of herbicide will not occur when wind speeds are in excess of 3 mi per hour.
    h. No herbicides will be applied within 24 hours of forecasted rain.

i. Application of all herbicides will be done by a qualified City staff or contractors to ensure that overspray is minimized, that all application is made in accordance with label recommendations, and with implementation of all required and reasonable safety measures. A safe dye will be added to the mixture to visually denote treated sites. Application of herbicides will be consistent with the U.S. Environmental Protection Agency's Office of Pesticide Programs, Endangered Species Protection Program county bulletins.

j. All herbicides, fuels, lubricants, and equipment will be stored, poured, or refilled at least 60 ft from riparian habitat or water bodies in a location where a spill would not drain directly toward aquatic habitat. The City will ensure that contamination of habitat does not occur during such operations. Prior to the onset of work, the City will ensure that a plan is in place for a prompt and effective response to accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Additional minimization measures include:

18. During placement of RSP, native topsoil from the channel will be incorporated within the RSP to provide a seeding and planting medium. Areas of RSP above the ordinary high water mark will be revegetated with the seed mix specified in Table 3.

4.2.1.4. Project Effects

The proposed project will result in permanent impacts in 0.20 ac of aquatic non-breeding habitat for CRLF and 0.06 ac of upland habitat. The project will result in 0.60 ac of temporary impacts to aquatic non-breeding habitat for CRLF and 0.14 ac of upland habitat. Permanent impacts are a result of install, repairing, or rehabilitating RSP; temporary impacts to CRLF habitat are a result of project staging, access, and other temporary construction disturbances. Table 4 shows the permanent and temporary impacts to CRLF habitat at each bridge in the BSA. Impacts to CRLF habitat are shown in Figures 7a-7c.

The project will not result in substantive indirect effects to CRLF upland and aquatic habitat.

Table 4: Impacts to CRLF Habitat (acres)

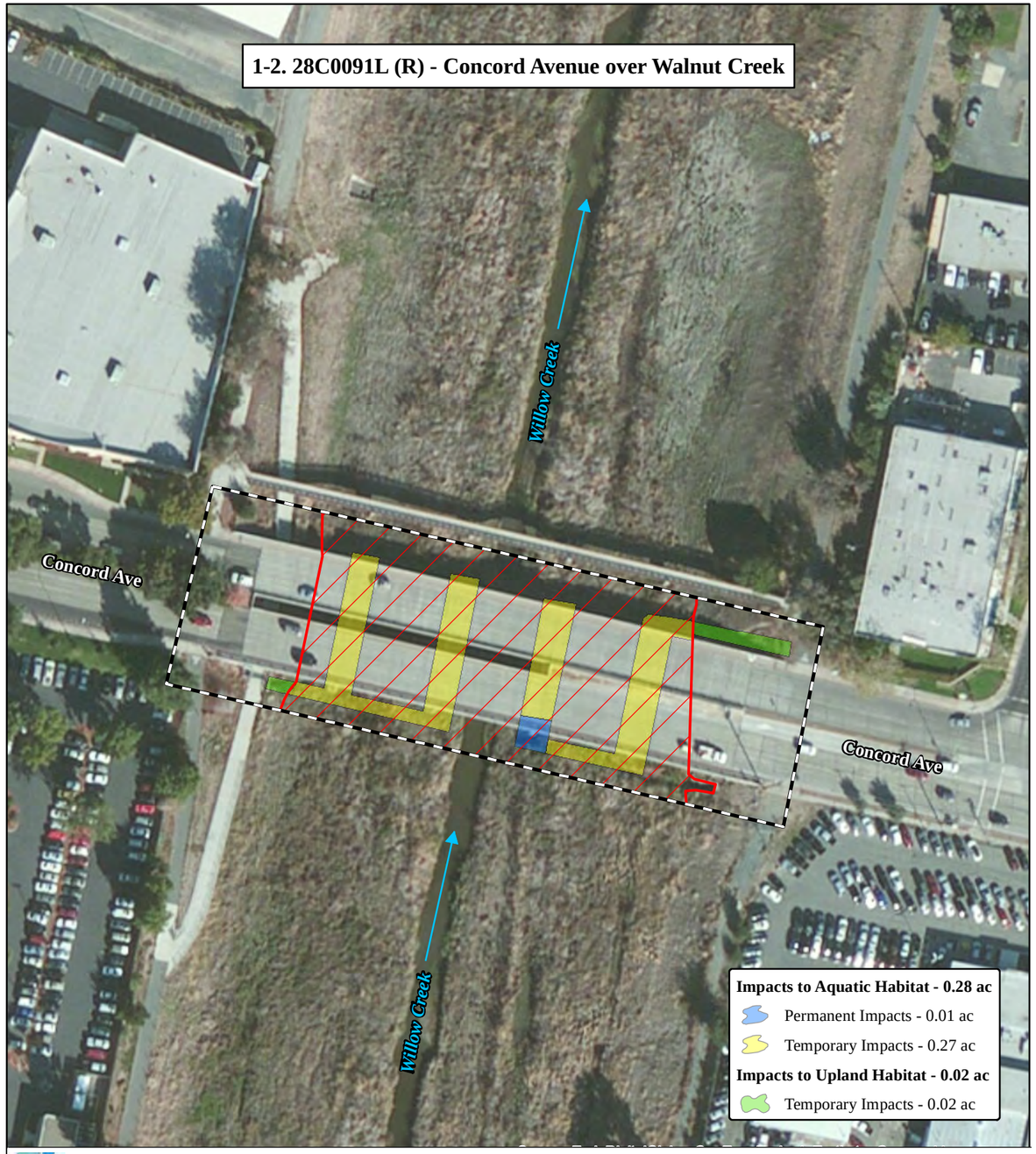
Bridge No.	Aquatic Non-Breeding Habitat		Upland Habitat	
	Permanent	Temporary	Permanent	Temporary
28C0091L 28C0091R	0.01	0.27	0.00	0.02
28C0115	0.00	0.00	0.03	0.03
28C0183	0.19	0.23	0.00	0.04
28C0221	0.01	0.00	0.02	0.00
28C0222	0.00	0.04	0.00	0.01
28C0224	0.00	0.02	0.00	0.01
28C0278	0.00	0.02	0.00	0.02
28C0357	0.00	0.02	0.00	0.01
28C0361	0.00	0.00	0.01	0.00
Total	**0.21**	**0.60**	**0.06**	**0.14**

4.2.1.5. Modifications to the Project to Mitigate Effects

Permanent impacts to CRLF habitat shall be compensated for at a 3:1 ratio and temporary impacts to CRLF habitat shall be compensated for at a 1.1:1 ratio. Mitigation shall be accomplished by purchasing credits at the Mountain House Conservation Bank or other service approved bank or by other methods contingent upon approval by USFWS.

4.2.1.6. Cumulative Effects (FESA)

The Cumulative Effects Evaluation Area (CEEA) was developed based on the relative footprint of the project. The CEEA generally encompasses a 5 mi radius around the BSA. Reasonably foreseeable non-federal actions in the region that could potentially affect CRLF include land development projects and other public works projects. The project is not expected to contribute to cumulative effects for this species.



LEGEND

Biological Study Area

California Red-Legged Frog Aquatic Habitat

0 50 100
FEET

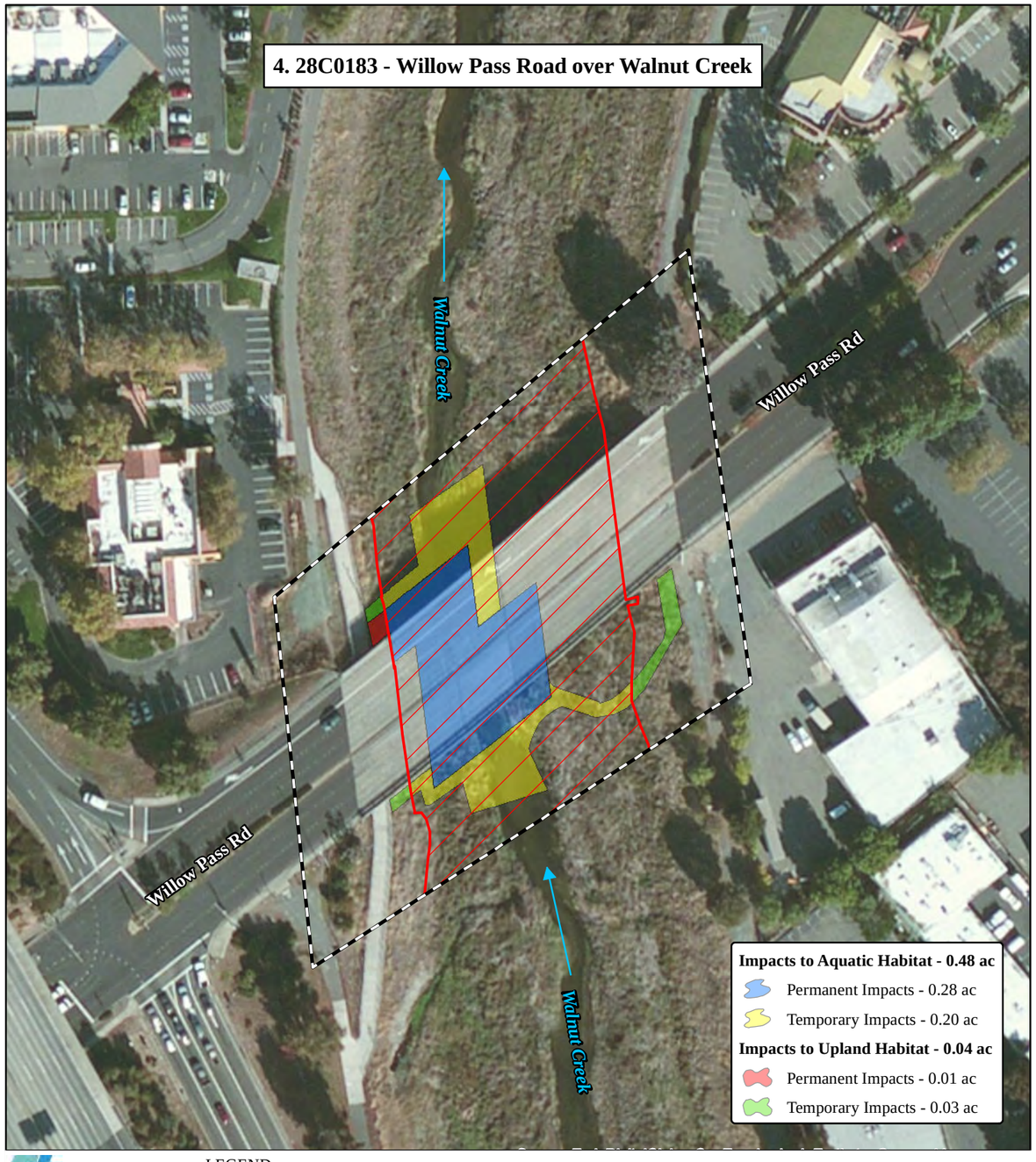
SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

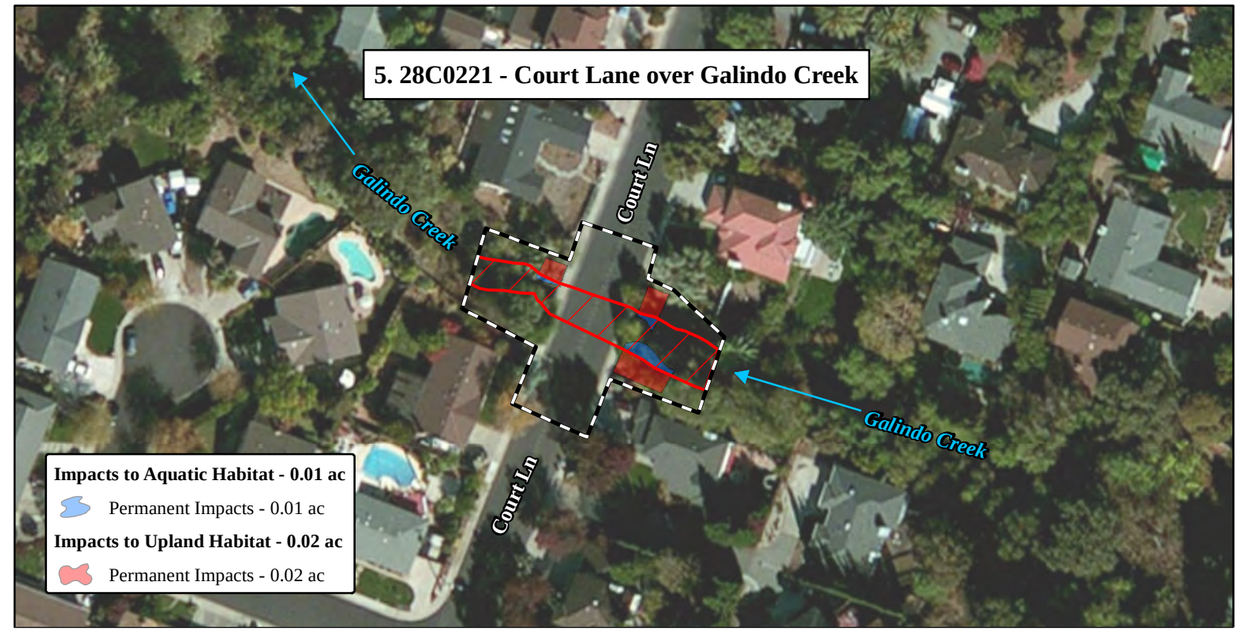
I:\Aem1101\GIS\Nes-fig7a_crlf_imps.mxd (10/29/2014)

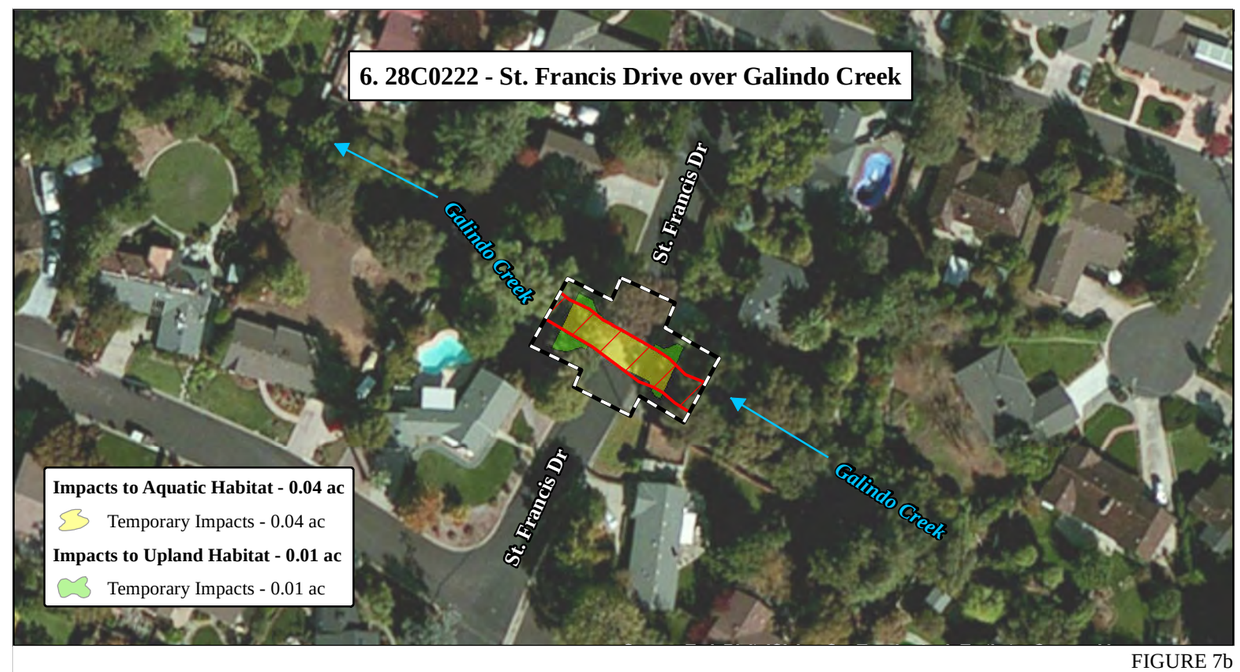
FIGURE 7a

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Impacts to California Red-Legged Frog Habitat







Caltrans

LEGEND

Biological Study Area

California Red-Legged Frog Aquatic Habitat

N

0 50 100
FEET

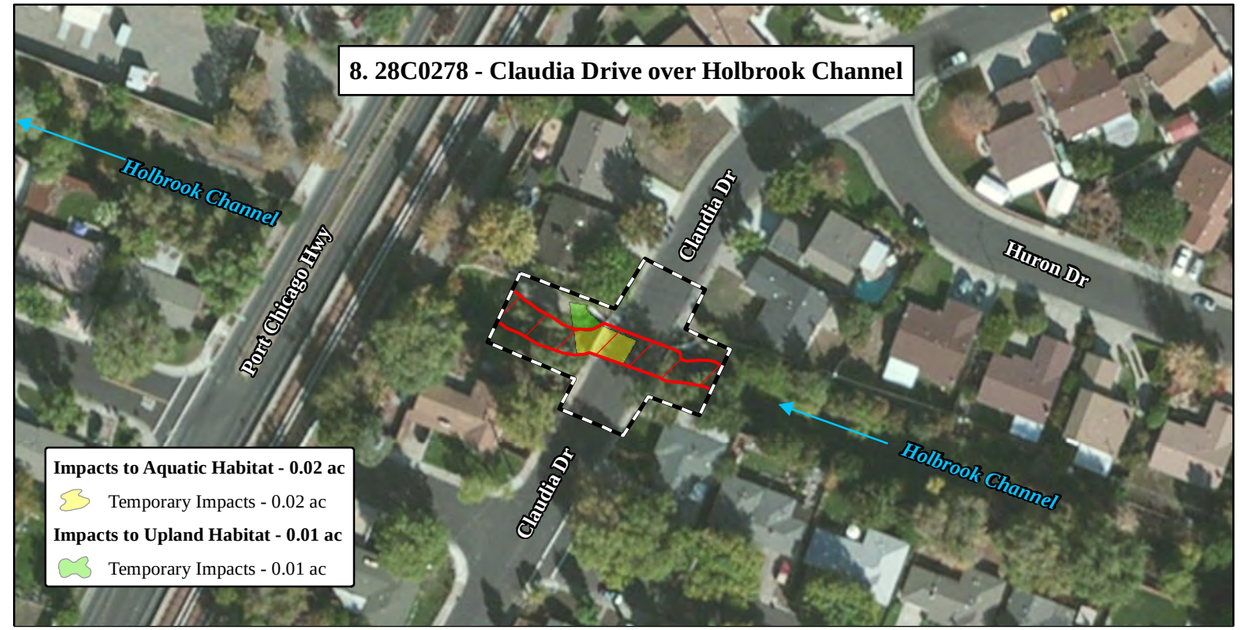
SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

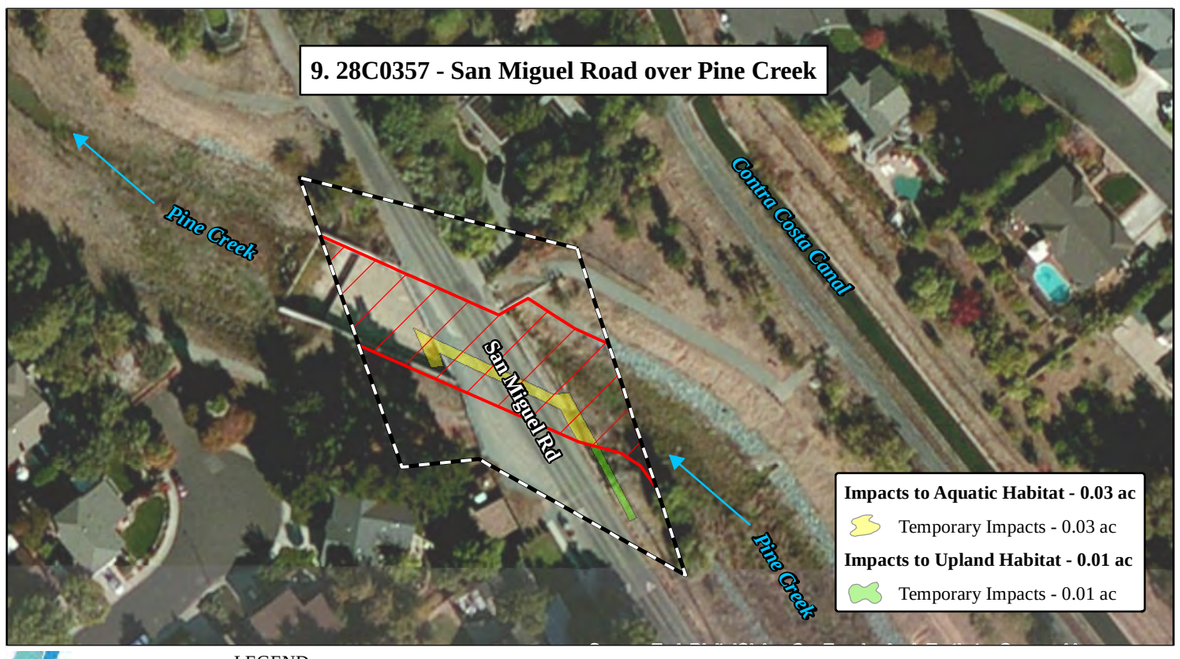
I:\Aem1101\GIS\Nes-fig7b_crlf_imps.mxd (10/29/2014)

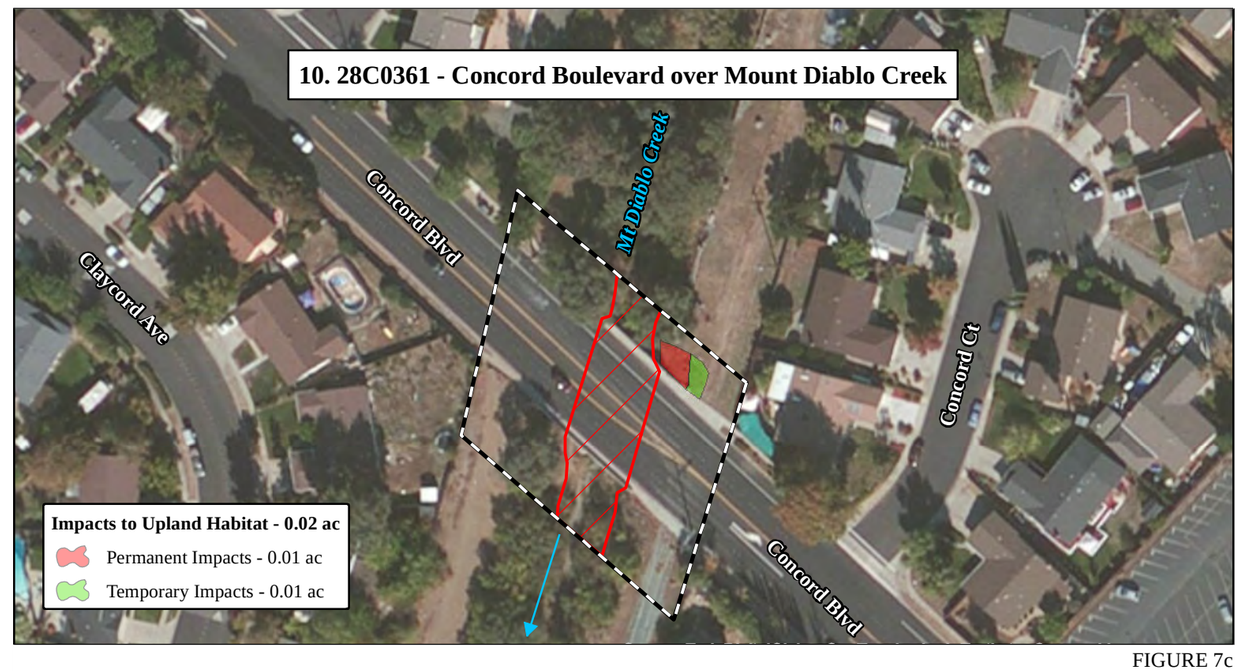
FIGURE 7b

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Impacts to California Red-Legged Frog Habitat







Caltrans

LEGEND

Biological Study Area

California Red-Legged Frog Aquatic Habitat

N

0 50 100
FEET

SOURCE: Basemap - ESRI Aerial Imagery (2011),Mapping - LSA Associates, Inc. (2014)

I:\Aem1101\GIS\Nes-fig7c_crlf_imps.mxd (10/29/2014)

FIGURE 7c

Concord Bridge Repairs
Bridge no. 28C0091L, 28C0091R, 28C0115, 28C0183, 28C0221
28C0222, 28C0224, 28C0278, 28C0357, and 28C0261
City of Concord, Contra Costa County, CA
Federal Project No. BPMP-5135 (039)

Impacts to California Red-Legged Frog Habitat

Chapter 5. Conclusions and Determination

5.1. Conclusions

5.1.1. California Red-legged Frog

The proposed project will result in permanent effects to CRLF aquatic non-breeding habitat, totaling 0.21 ac, and upland habitat totaling, 0.06 ac. The project will also result in temporary impacts to aquatic non-breeding and upland habitat totaling 0.60 ac and 0.14 ac, respectively.

5.2. Determination

5.2.1. California Red-legged Frog

The project may affect, and is likely to adversely, affect CRLF during the project construction. Implementations of the avoidance and minimization measures in Section 4.2.1.3 would minimize effects to CRLF. Since the project will result in permanent and temporary effects to aquatic and upland habitat for CRLF, formal consultation with USFWS under Section 7 of FESA is required.

Chapter 6. References

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_____. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Portland, Oregon.173pp.

Appendix A Design Plans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	LOC		1	23

CITY OF CONCORD
DEPARTMENT OF PUBLIC WORK & ENGINEERING

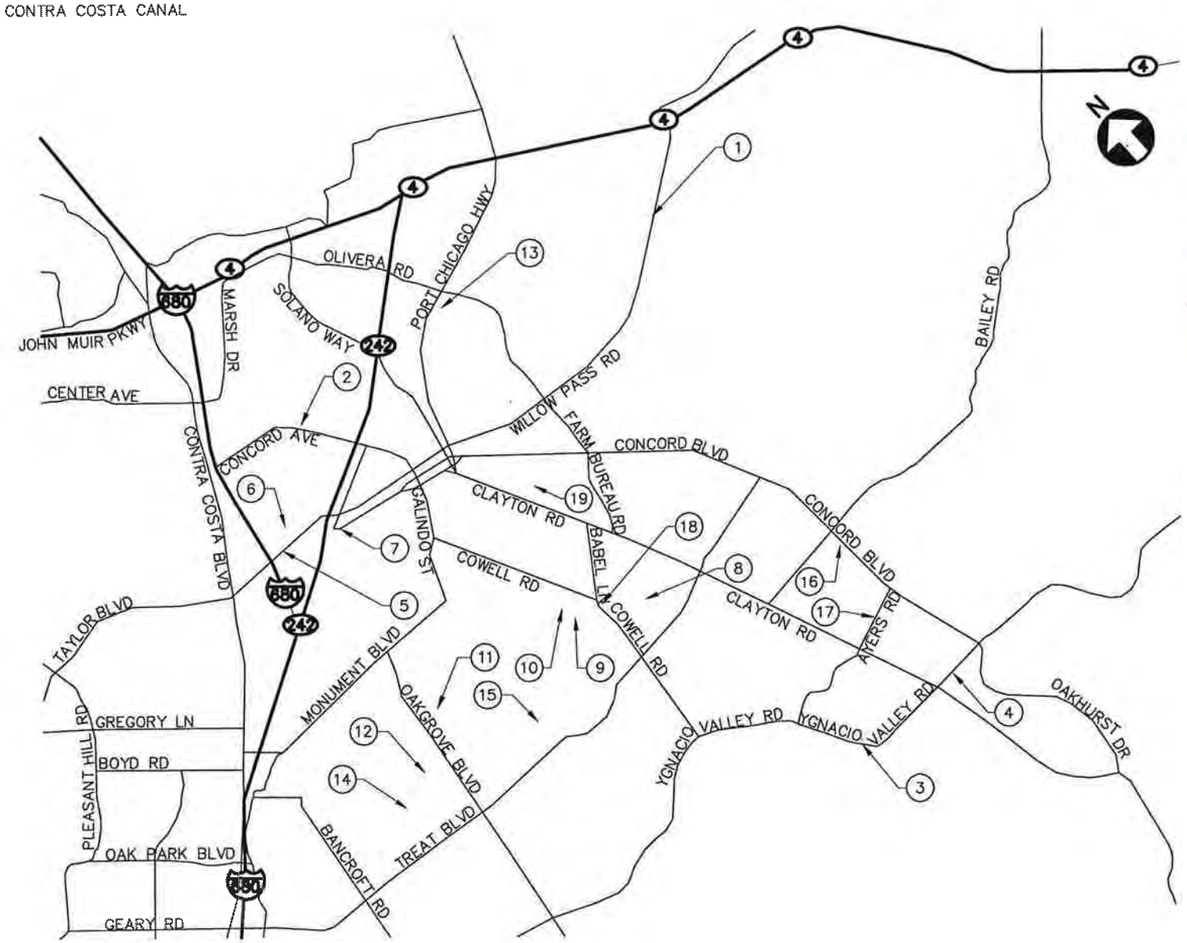
CITYWIDE BRIDGE REPAIR PROGRAM

INDEX OF SHEETS

SHEET NO.	BRIDGE NO.	SHEET TITLE
1		TITLE SHEET
2	28C0034	WILLOW PASS RD BRIDGE OVER MOUNT DIABLO CREEK
3	28C0091L	CONCORD AVE BRIDGE OVER WALNUT CREEK–LEFT
4	28C0091R	CONCORD AVE BRIDGE OVER WALNUT CREEK–RIGHT
5	28C0115	YGNACIO VALLEY RD BRIDGE OVER GALINDO CREEK
6	28C0116	KIRKER PASS RD BRIDGE OVER MOUNT DIABLO CREEK
7	28C0183	WILLOW PASS RD BRIDGE OVER WALNUT CREEK
8	28C0183	WILLOW PASS RD BRIDGE OVER WALNUT CREEK--SCOUR
9	28C0189L	DIAMOND BLVD BRIDGE OVER WALNUT CREEK–LEFT
10	28C0189R	DIAMOND BLVD BRIDGE OVER WALNUT CREEK–RIGHT
11	28C0198	CLAYTON RD BRIDGE OVER PINE CREEK
12	28C0220	CAPE COD WAY BRIDGE OVER GALINDO CREEK
13	28C0221	COURT LANE BRIDGE OVER GALINDO CREEK
14	28C0222	ST FRANCIS DR BRIDGE OVER GALINDO CREEK
15	28C0224	WHITMAN RD BRIDGE OVER SDM CHANNEL
16	28C0276	RISDON ST BRIDGE OVER SDM CHANNEL
17	28C0278	CLAUDIA DRIVE BRIDGE OVER HOLBROOK CHANNEL
18	28C0353	OAK GROVE SCHOOL POC
19	28C0357	SAN MIGUEL RD BRIDGE OVER PINE CREEK
20	28C0361	CONCORD BLVD BRIDGE OVER MOUNT DIABLO CREEK
21	28C0362	AYERS RD BRIDGE OVER MOUNT DIABLO CREEK
22	28C0427	COWELL RD BRIDGE OVER GALINDO CREEK
23	28C0436	WALNUT AVE BRIDGE OVER CONTRA COSTA CANAL

STRUCTURE LIST

ID NO.	BRIDGE NO.
1	28C0034
2	28C0091L/R
3	28C0115
4	28C0116
5	28C0183/SCOUR
6	28C0189L/R
7	28C0198
8	28C0220
9	28C0221
10	28C0222
11	28C0224
12	28C0276
13	28C0278
14	28C0353
15	28C0357
16	28C0361
17	28C0362
18	28C0427
19	28C0436



VICINITY MAP
NO SCALE

LOCATION MAP

SUMMARY
THIS SET OF PLANS CONTAINS BRIEF DESCRIPTIONS OF HOW WORK IS EXPECTED TO BE ACCOMPLISHED FOR BOTH WORK ON DECK AND BELOW DECK, INCLUDING MOBILIZATION & LAYDOWN AREAS, ACCESS POINTS AND ROUTES TRAVELED FOR WORK BELOW BRIDGE

BOB FISH, PE, SE (AECOM PROJECT MANAGER)
12-02-11

NOT FOR CONSTRUCTION

PROJECT ENGINEER — DATE 05/20/11
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — ROBERT C. FISH — No. C39540 — Exp. 12/31/2011 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

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

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

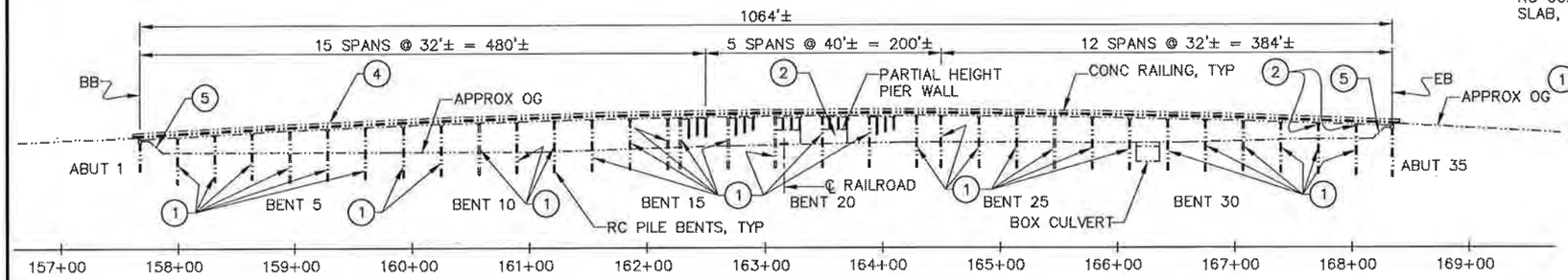
CONTRACT NO. 2060

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

DATE SIGNED	LICENSE EXP DATE	REGISTRATION NO.	CITY REVIEW BY	CONSULTANT DESIGN ENGINEER
	12/31/2011	C54151	DANEA S. GEMMELL	ROBERT C. FISH

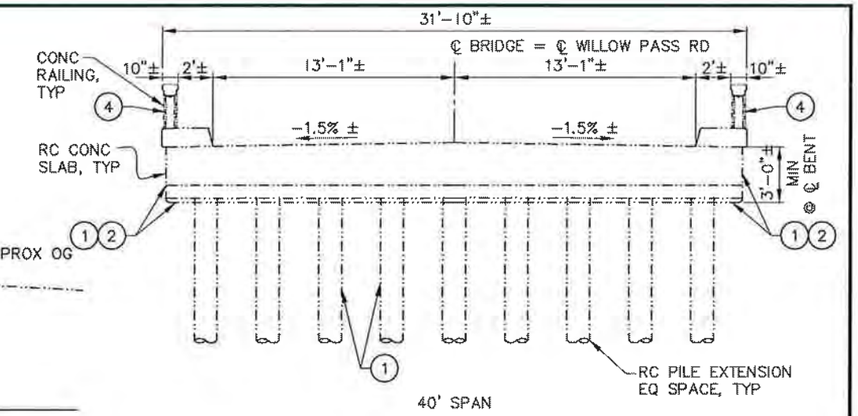
THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

LAST REVISION 00-00-00 — DATE PLOTTED => Jun 09, 2011 — TIME PLOTTED => 1:40pm



ELEVATION

SCALE: 1" = 60'



TYPICAL SECTION

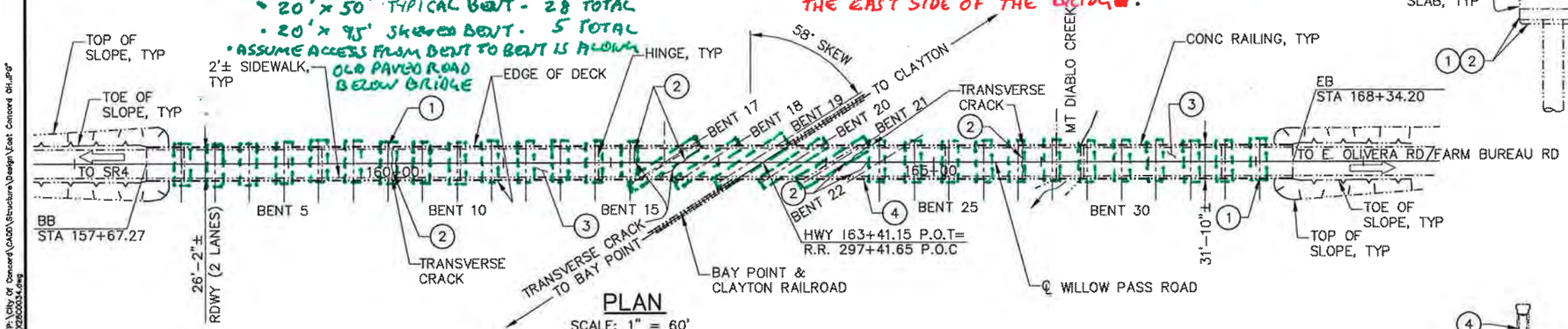
SCALE: ¼" = 1'-0"

2. (CONTINUED)
- MOST WORK UNDER THE BRIDGE WILL BE ACCOMPLISHED FROM SMALL LIFT VEHICLES, FOOT TRAFFIC W/ EXTENSION LADDERS, OR SCAFFOLDING.

1. WORK ON DECK: ACCOMPLISHED BY LANE CLOSURE (ONE AT A TIME)
- CONTRACTOR WILL MOBILIZE & LOCATE EQUIPMENT WITHIN CLOSED LANE

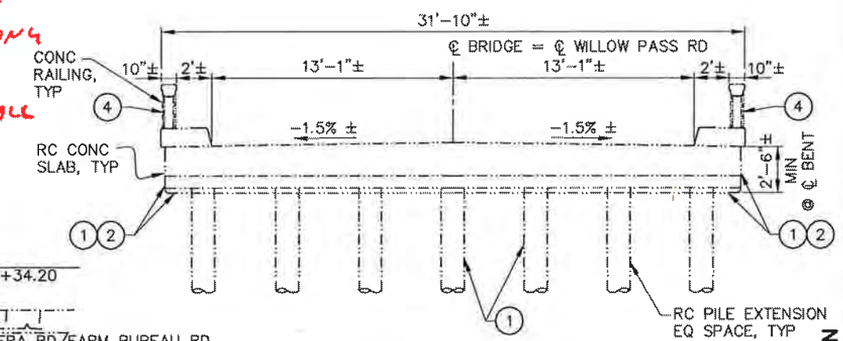
2. WORK BELOW DECK: ACCESS THROUGH THE NAVAL PROPERTY
- THERE ARE WIDENED AREAS OF PAVEMENT/GRAVEL ALONG THE ACCESS ROADS ON BOTH SIDES OF MT. DIABLO CREEK TO SERVE AS STAGING AREAS
- THERE IS ALSO A BRIDGE @ GROUND LEVEL OVER THE SMALL MAIN CREEK CHANNEL FOR AN ACCESS RD. PARALLEL TO THE EAST SIDE OF THE BRIDGE.

- INDICATES ASSUMED FOOT TRAFFIC AROUND EACH BENT.
- ASSUME 10' ON EACH SIDE OF BENT PILE EXTENSIONS
  - 20' x 50' TYPICAL BENT - 28 TOTAL
  - 20' x 95' SKEWED BENT - 5 TOTAL
- ASSUME ACCESS FROM BENT TO BENT IS ALLOWED



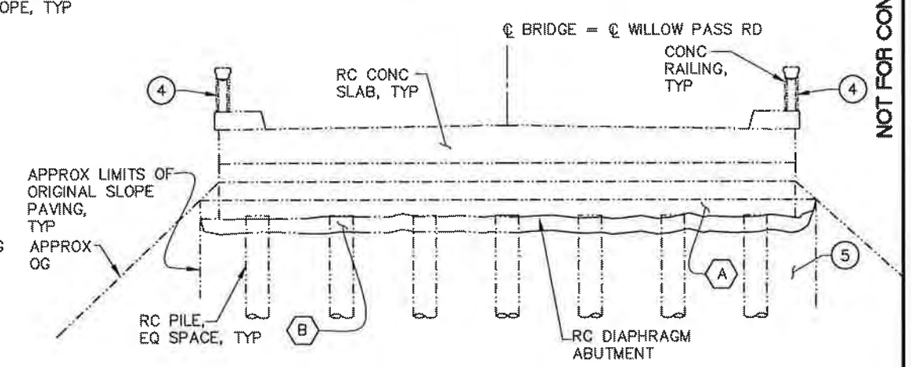
PLAN

SCALE: 1" = 60'



TYPICAL SECTION

SCALE: ¼" = 1'-0"



ABUT 1 SHOWN, ABUT 35 SIMILAR AND OPPOSITE

ABUTMENT 1

SCALE: ¼" = 1'-0"

NOT FOR CONSTRUCTION

REPAIR LEGEND:

1. SPALL AND ROCK POCKET REPAIRS
2. EPOXY INJECT CRACKS
3. POLYMER CONCRETE OVERLAY
4. REPLACE BARRIER RAILING WITH TYPE 80
5. REMOVE REMAINING PORTION OF SLOPE PAVING AND RECONSTRUCT FULL SLOPE PAVING

LEGEND:

- WATER FLOW DIRECTION
- TRAFFIC DIRECTION
- (A) SLOPE PAVING
- (B) GAP BENEATH REMAINING PORTION OF SLOPE PAVING

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$30.59
TOTAL COST OF BRIDGE REPAIR	=	$1,036,000

BRIDGE NO: 28C0034

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER — DANEA S. GEMMELL, No. C54151, Exp. 12/31/2011, CIVIL, STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN; HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN: 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER — ROBERT C. FISH, No. C39540, Exp. 12/31/2011, CIVIL, STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WILLOW PASS ROAD OVER MT DIABLO CREEK

GENERAL PLAN

ST-XX

SHEET X OF XX

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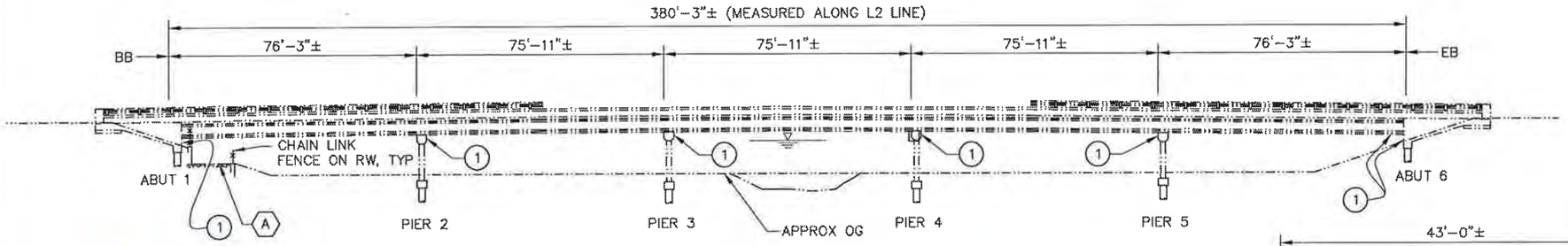
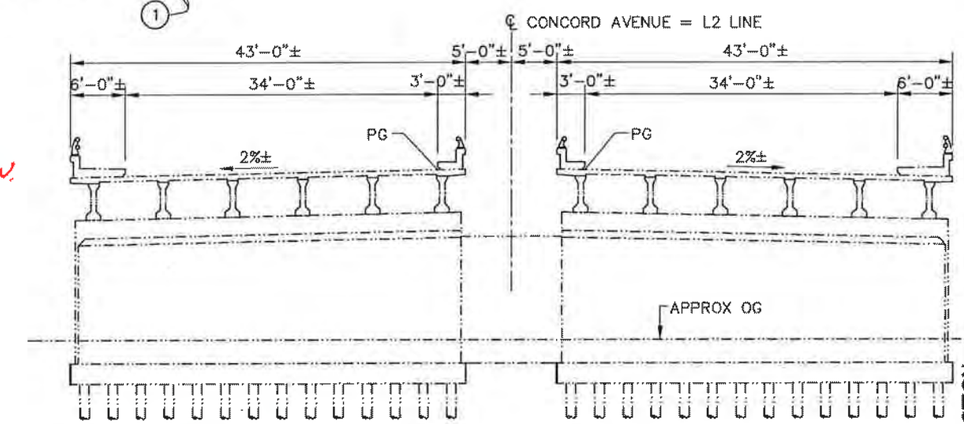
!? . INDICATES ASSUMED FOOT TRAFFIC
!! AROUND EACH PIER
· ASSUME 10' ON EACH SIDE OF PIER WALL
· 20' x 116'. TYPICAL PIER, 4 TOTAL
· ASSUME ACCESS FROM PIER TO PIER ALONG ROUTES (A) & (B) AS SHOWN



ELEVATION
SCALE: 1" = 20'

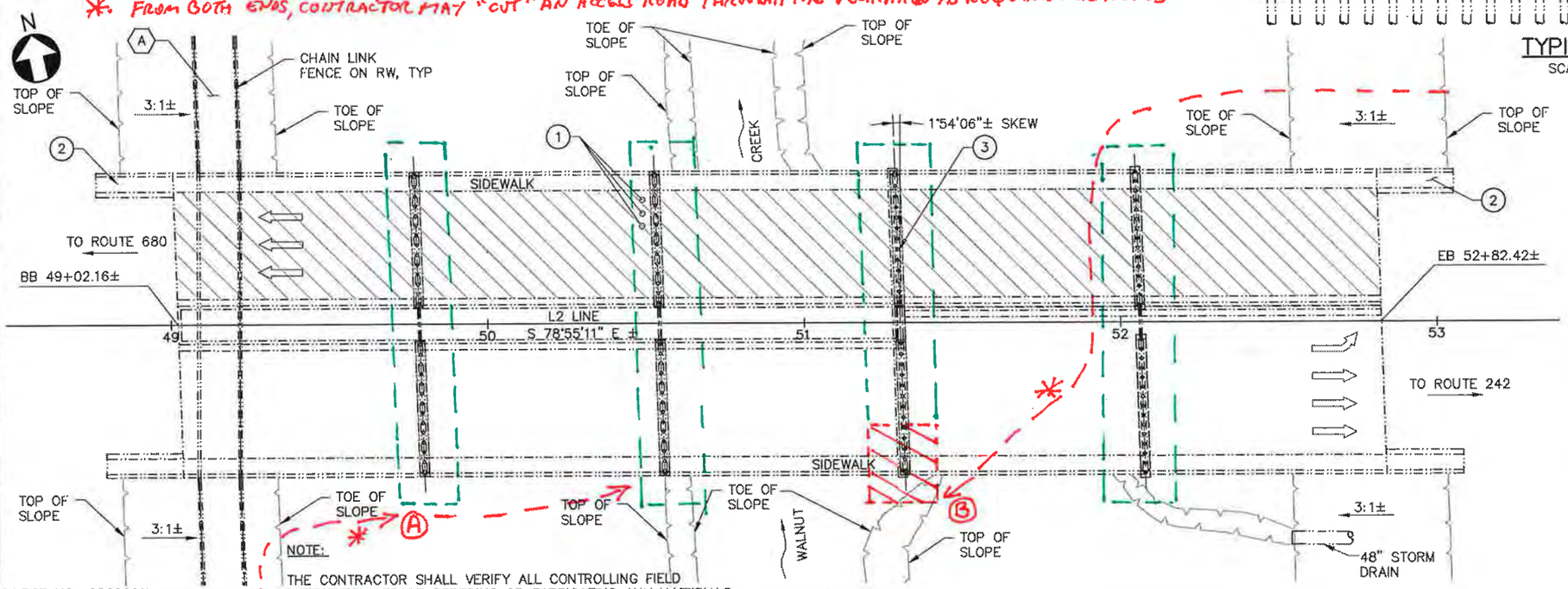
1. WORK ON DECK:
· ACCOMPLISHED BY LANE CLOSURES (ONE OR TWO AT A TIME)
· CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT WITHIN CLOSED LANES.

2. WORK BELOW DECK: IT IS EXPECTED THAT CONTRACTOR MAY USE ADJACENT PRIVATE PARKING LOTS FOR MOBILIZATION.
· TO MINIMIZE THE IMPACT TO THE CREEK, ACCESS SHALL BE FROM BOTH ENDS OF THE BRIDGE.
(A) ACCESS TO AREAS WEST OF THE MAIN CHANNEL SHALL BE FROM THE "IRON HORSE REGIONAL TRAIL"
· WORK WILL BE FROM HAND CARRIED LADDERS AND SCAFFOLDING.
(B) ACCESS TO AREAS EAST OF THE MAIN CHANNEL SHALL BE FROM THE BIKE TRAIL HEAD AT THE NE. CORNER.
· SCOUR PROTECTION WORK AT THE SOUTH END OF PIER 4 WILL BE BY THE MINIMUM SIZED EQUIPMENT (TRACKTOR, BACKHOE, TRUCK) TO PLACE THE NEW R.S.P.
*. FROM BOTH ENDS, CONTRACTOR MAY "CUT" AN ACCESS ROAD THROUGH THE VEGITATION AS REQUIRED FOR ACCESS



TYPICAL SECTION
SCALE: 1/8" = 1'-0"

NOT FOR CONSTRUCTION



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

PLAN
SCALE: 1" = 20'
THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

REPAIR LEGEND:
(1) SPALLS AND ROCK POCKET REPAIRS
(2) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
(3) CLEAN AND REPLACE JOINT SEAL
METHACRYLATE DECK SEAL
REPAIR/REHABILITATE RSP

LEGEND:
(A) IRON HORSE REGIONAL TRAIL
WATER FLOW DIRECTION
DIRECTION OF TRAFFIC

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$1.52
TOTAL COST OF BRIDGE REPAIR	=	$49,600

BRIDGE NO: 28C0091L

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED _____
PROJECT ENGINEER
REVISED BY _____ DATE _____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CONCORD AVENUE BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX
SHEET X OF XX

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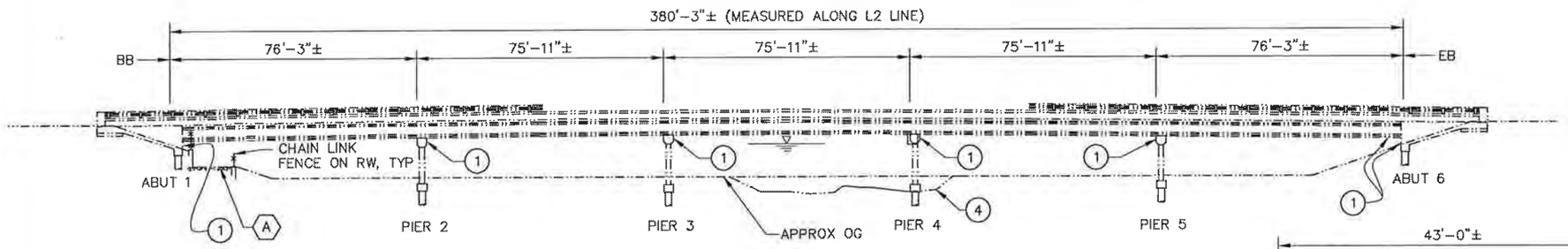
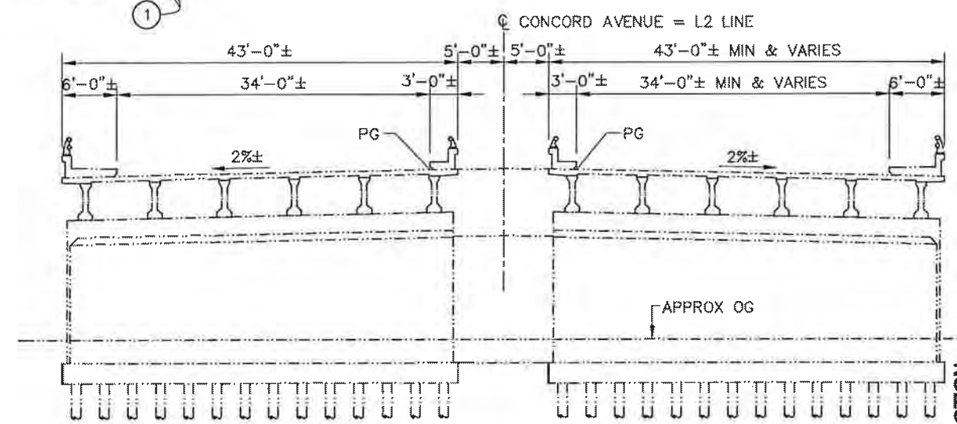
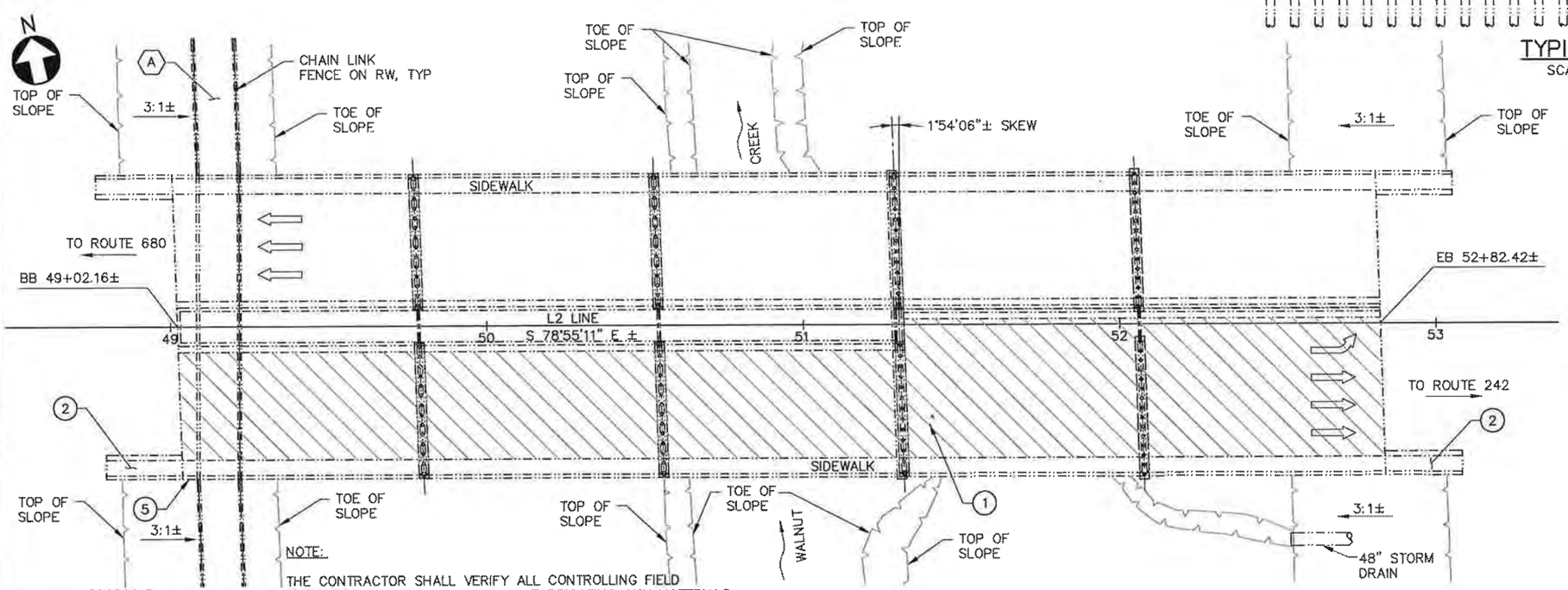


ELEVATION
SCALE: 1" = 20'

· SEE BRIDGE NO. 28 C 0091L FOR WORK & ACCESS DESCRIPTION.



TYPICAL SECTION
SCALE: 1/8" = 1'-0"



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

PLAN
SCALE: 1" = 20'

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

REPAIR LEGEND:

1. SPALLS AND ROCK POCKET REPAIRS
2. REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
3. CLEAN AND REPLACE JOINT SEAL
4. REPAIR/REHABILITATE RSP
5. REPAIR BRIDGE METAL RAILING

METHACRYLATE DECK SEAL

LEGEND:

A. IRON HORSE REGIONAL TRAIL
WATER FLOW DIRECTION
DIRECTION OF TRAFFIC

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY = $4.01

TOTAL COST OF BRIDGE REPAIR = $131,200

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0091R

CITY REVIEW BY:
NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CONCORD AVENUE BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX
SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0091R-ST01.dwg Time:Jun09,2011-01:21pm
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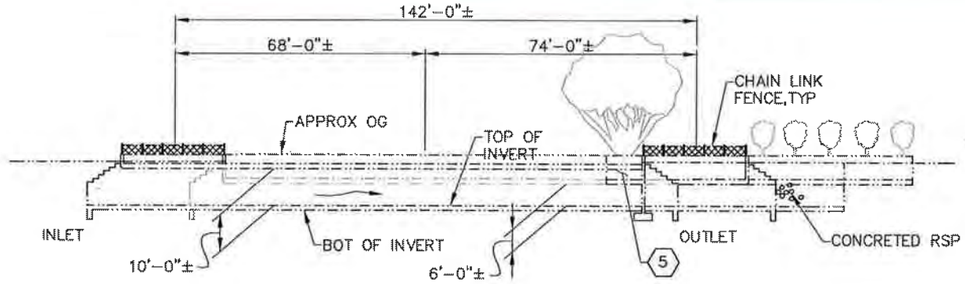
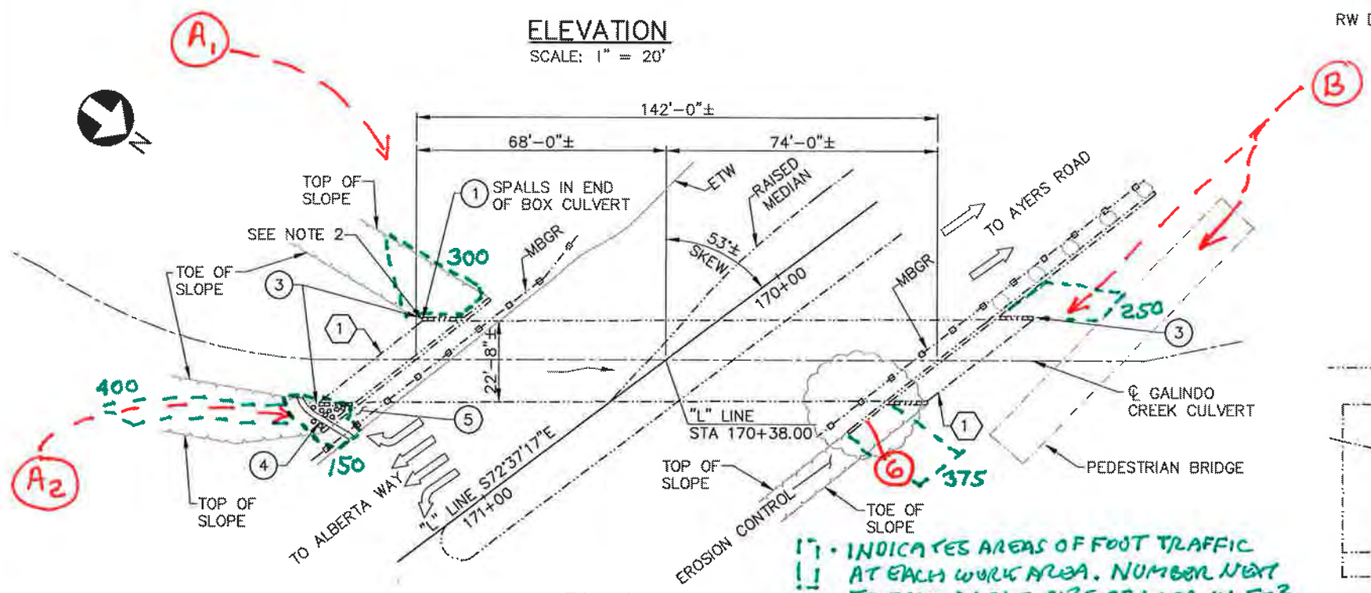


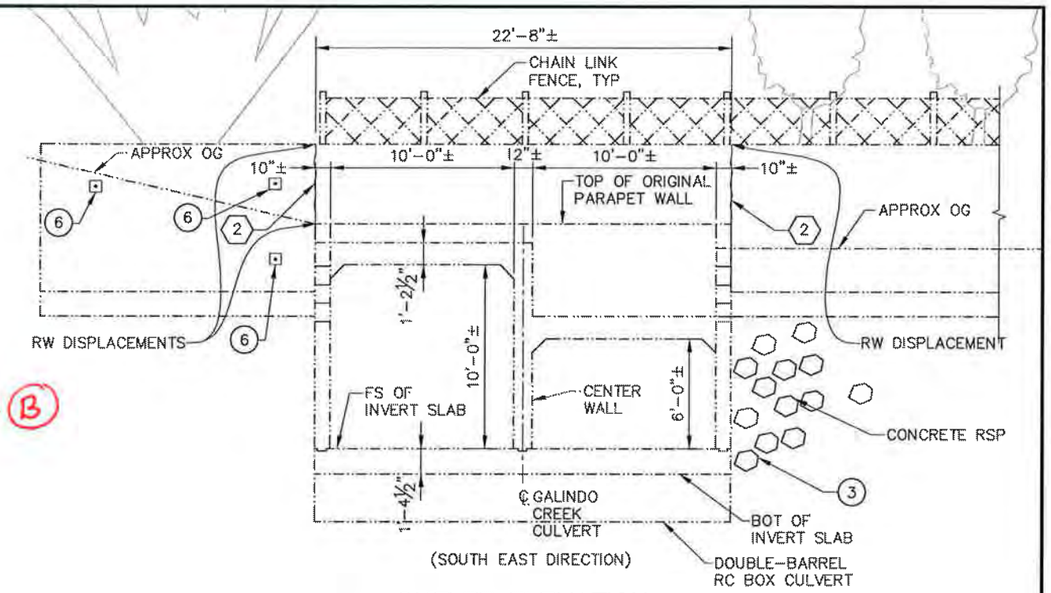
ELEVATION

SCALE: 1" = 20'



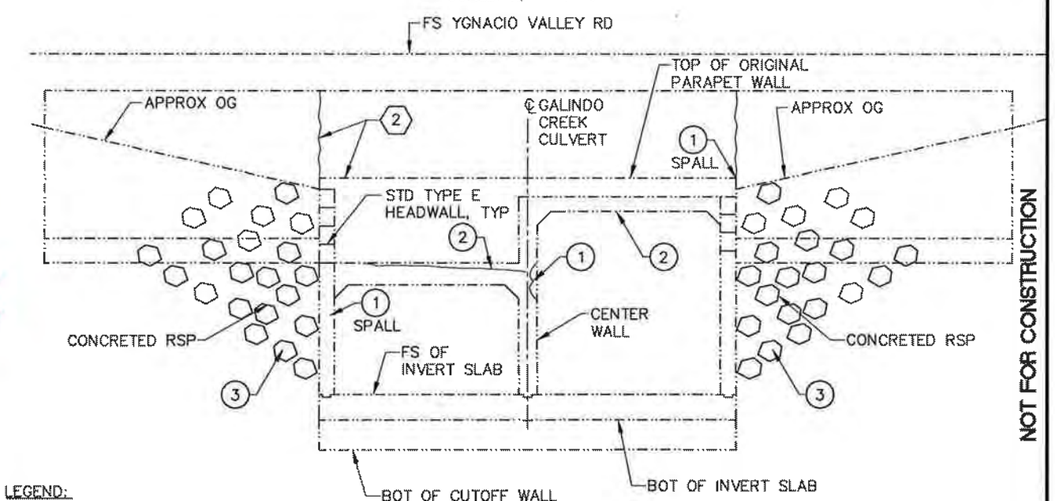
PLAN

SCALE: 1" = 20'



OUTLET ELEVATION

SCALE: ¼" = 1'-0"



INLET ELEVATION

SCALE: ¼" = 1'-0"

NOT FOR CONSTRUCTION

1. NO DECK WORK IS REQUIRED
2. WORK BELOW DECK: (BURIED CULVERT TYPE BRIDGE)
   - ON THE SOUTH END OF THE CULVERT, TWO ACCESS POINTS ARE ANTICIPATED:
     - (A1) FROM THE WEST SIDE OF THE CREEK, THE CONTRACTOR MAY GAIN ACCESS THROUGH THE ADJACENT DETENTION POND (TYPICALLY DRY & W/O VEGITATION) FROM CAMPUS DRIVE
     - (A2) FROM THE EAST SIDE OF THE CREEK, THE CONTRACTOR MAY GAIN ACCESS DIRECTLY FROM CAMPUS DRIVE OR PINE HOLLOW RD.
   - SEVERAL VIABLE AREAS EXIST FOR STAGGING AREAS
   - ON THE NORTH END OF THE CULVERT:
     - (B) ACCESS SHALL BE FROM AN EMERGENCY VEHICLE ENTRANCE OFF OF YGNACIO VALLEY RD. LOCATED WEST OF THE BRIDGE & CONTINUING BIKE TRAIL. DIKE BRIDGE WILL BE USED TO ACCESS EAST SIDE OF CREEK.

- INDICATES AREAS OF FOOT TRAFFIC AT EACH WORK AREA. NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT²
- ASSUME ACCESS TO EACH AREA FROM ROUTES (A1), (A2) & (B) AS SHOWN.

REPAIR LEGEND:

1	SPALL AND ROCK POCKET REPAIRS
2	EPOXY INJECT CRACK
3	REPAIR CONCRETED RSP
4	OVERSIDE DRAIN
5	REPAIR AC DIKE
6	TIEBACK ANCHORS

LEGEND:

	DIRECTION OF TRAFFIC
	WATER FLOW DIRECTION
1	LIMIT OF RC INVERT SLAB
2	EXPANSION JOINT

- MOST WORK WILL BE BY HAND USING LADDERS & SCAFFOLDING.
- WHERE REQUIRED, CONTRACTOR MAY TEMPORARILY SHUT DOWN A LANE TO OFFLOAD RSP. OR EQUIPMENT SUCH AS FOR INSTALLING TIEBACK ANCHORS.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE REPAIR ISSUES ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$32.82
TOTAL COST OF BRIDGE REPAIR	=	$105,600

BRIDGE NO: 28C0115

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANIEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

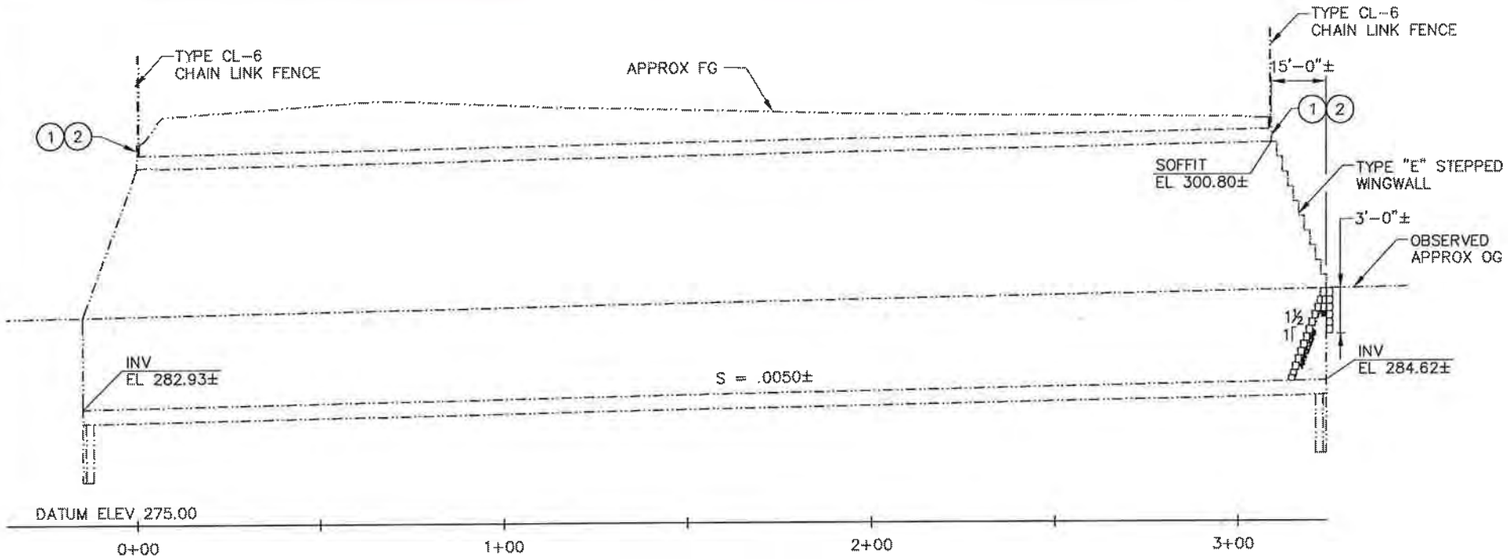
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

YGNACIO VALLEY RD BRIDGE OVER GALINDO CREEK GENERAL PLAN

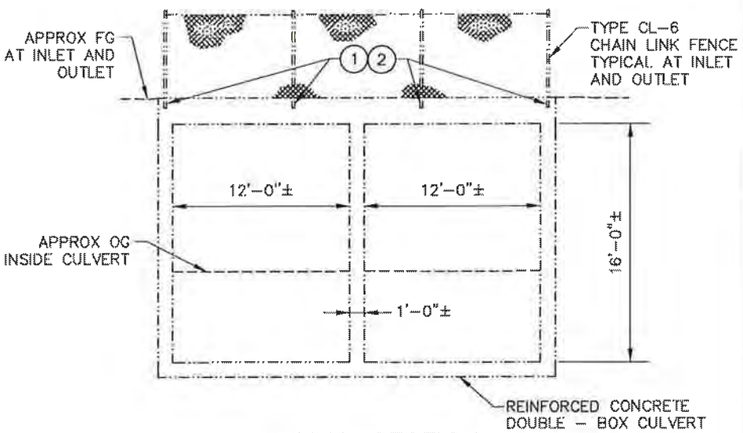
ST-XX

SHEET X OF XX



DEVELOPED ELEVATION

SCALE: 1" = 20' HORIZ
1" = 5' VERT



TYPICAL SECTION

SCALE: 1" = 5'-0"'

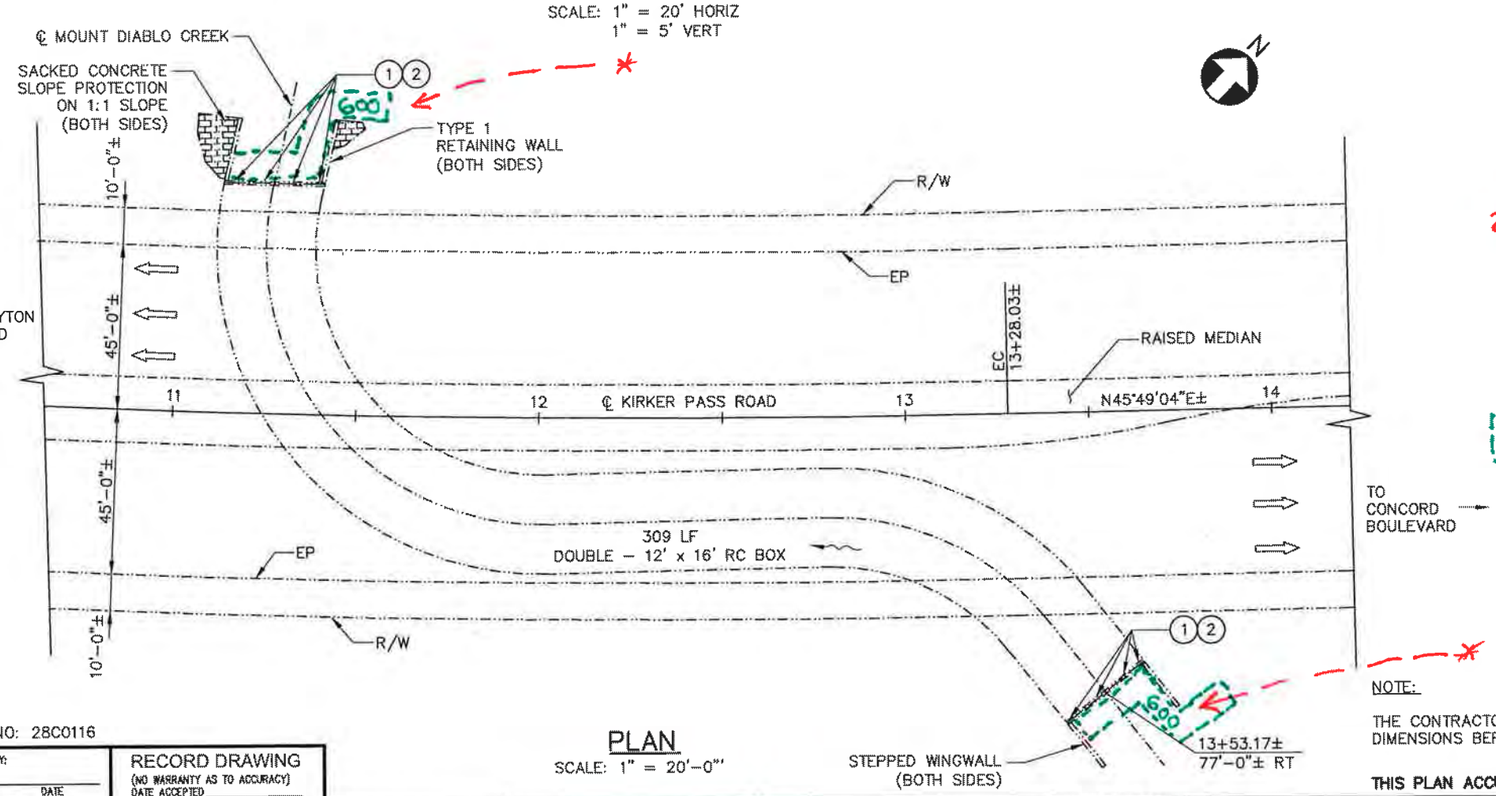
LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. SPALL REPAIRS AT FENCE POST POCKETS
2. REMOVE AND REPLACE CHAIN LINK FENCE POST



PLAN

SCALE: 1" = 20'-0"'

1. NO DECKWORK IS REQUIRED
2. WORK BELOW DECK (BURRIED CULVERT TYPE BRIDGE)

. ALL WORK WILL BE ACCOMPLISHED BY HAND FROM LADDERS OR SCAFFHOLDING. .

* . ACCESS AND STAGING WILL BE FROM OPEN DIRT AREAS & PARKING LOTS ADJACENT TO BOTH ENDS OF THE CULVERT.

[ ] . INDICATES AREAS OF FOOT TRAFFIC AT EACH WORK AREA
. NUMBER IN EACH AREA = SIZE OF AREA IN Ft^2
. ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$1.52
TOTAL COST OF BRIDGE REPAIR	=	$12,400

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0116

CITY REVIEW BY:
NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	P. ARIGO		
CHECKED BY:			

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Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2D60
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

KIRKER PASS ROAD BRIDGE OVER MOUNT DIABLO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

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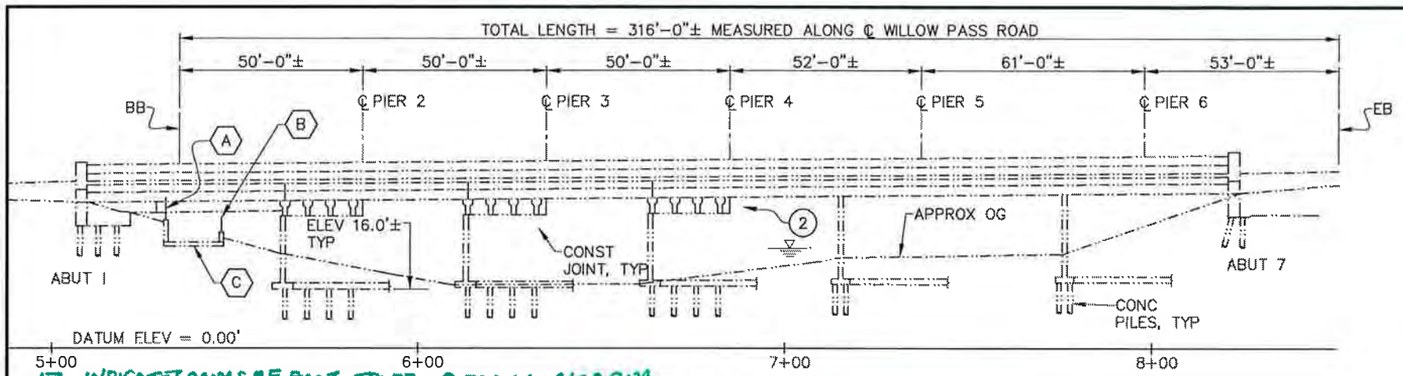
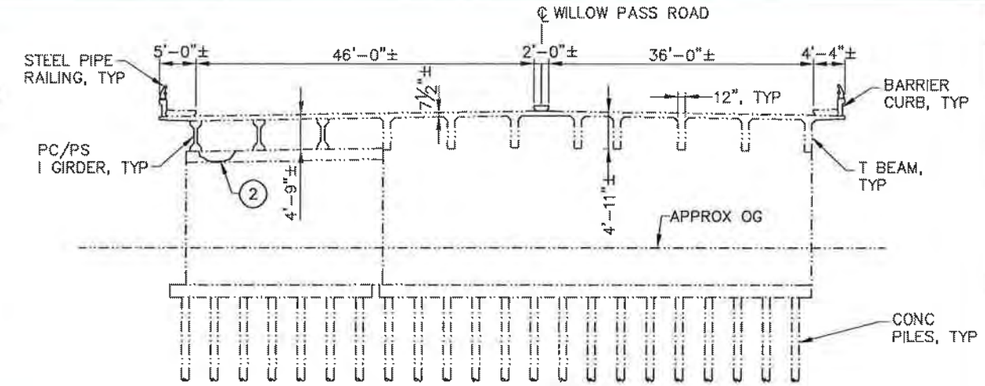


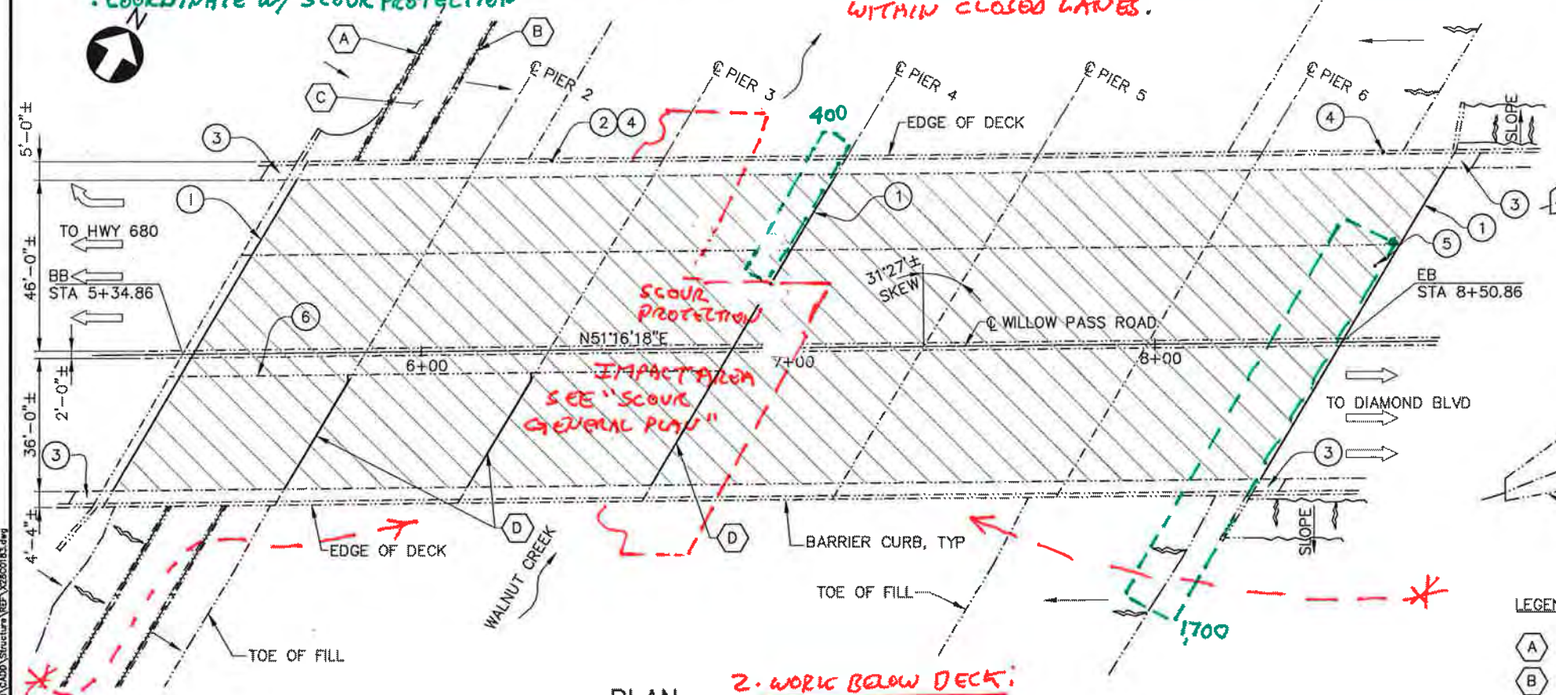
ELEVATION
SCALE: 1" = 20'



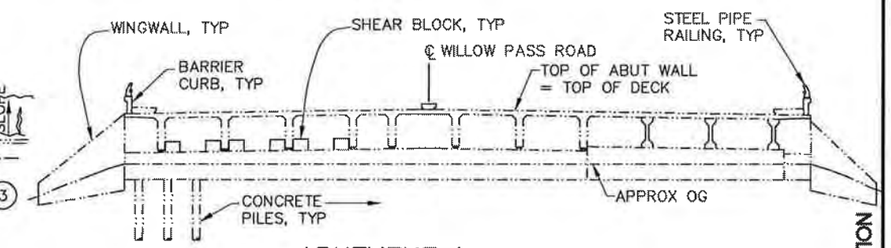
SECTION PIER 4
SCALE: 1" = 10'

- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT2
- ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.
- COORDINATE W/ SCOUR PROTECTION

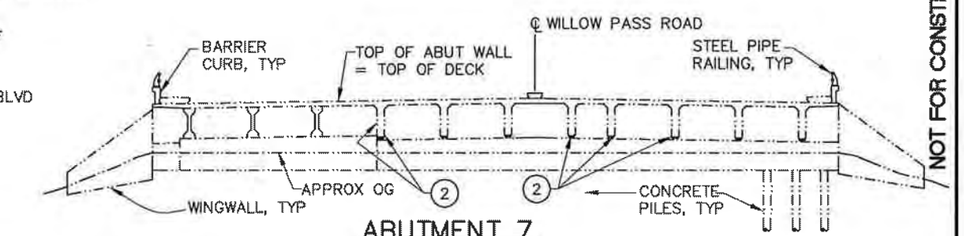
1. WORK ON DECK:
- ACCOMPLISHED BY LANE CLOSURES (ONE OR TWO AT A TIME)
- CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT WITHIN CLOSED LANES.



PLAN
SCALE: 1" = 20'



ABUTMENT 1
SCALE: 1" = 10'



ABUTMENT 7
SCALE: 1" = 10'

NOT FOR CONSTRUCTION

LEGEND:

- (A) 6' CHAIN LINK FENCE ON RW
- (B) 4' CHAIN LINK FENCE
- (C) IRON HORSE REGIONAL TRAIL
- (D) EXPANSION JOINT WITH STEEL EDGES
- HIGH WATER ELEVATION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. CLEAN & REPLACE JT SEAL
2. SPALL AND ROCK POCKET REPAIRS
3. REMOVE & RECONSTRUCT SIDEWALK (PORTION)
4. REPLACE METAL RAILING POST
5. REPAIR DECK SPALL
6. REHABILITATE LONGITUDINAL JT
- METHACRYLATE DECK TREATMENT

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY = $22.46

TOTAL COST OF BRIDGE REPAIR = $648,100

BRIDGE NO: 28C0183

2. WORK BELOW DECK:
- IT IS EXPECTED THAT CONTRACTOR WILL USE ADJACENT PRIVATE PARKING LOTS FOR MOBILIZATION.

* - WORK SHALL BE FROM HAND CARRIED LADDERS & SCAFFOLDING. BROUGHT IN FROM EITHER END OF THE BRIDGE USING THE "IRON HORSE" BIKE TRAIL @ THE WEST END & CARRIED DOWN SLOPE FROM PARKING AREAS AT THE EAST END

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

** ALTERNATIVE ACCESS - IF COORDINATED W/ THE SCOUR PROTECTION MEASURES SHOWN ON THE FOLLOWING SHEET, MAY USE TEMPORARY ACCESS ROAD.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WILLOW PASS RD BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX

SHEET 1 OF 2

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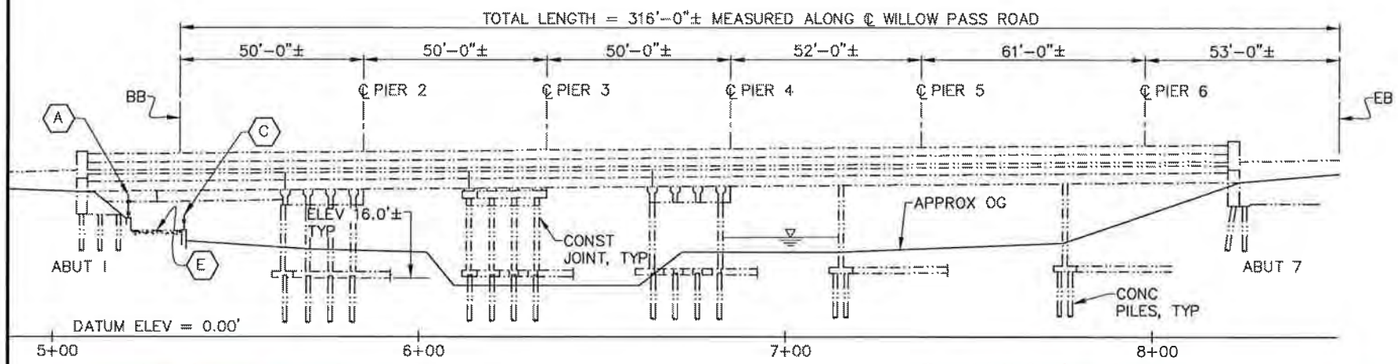
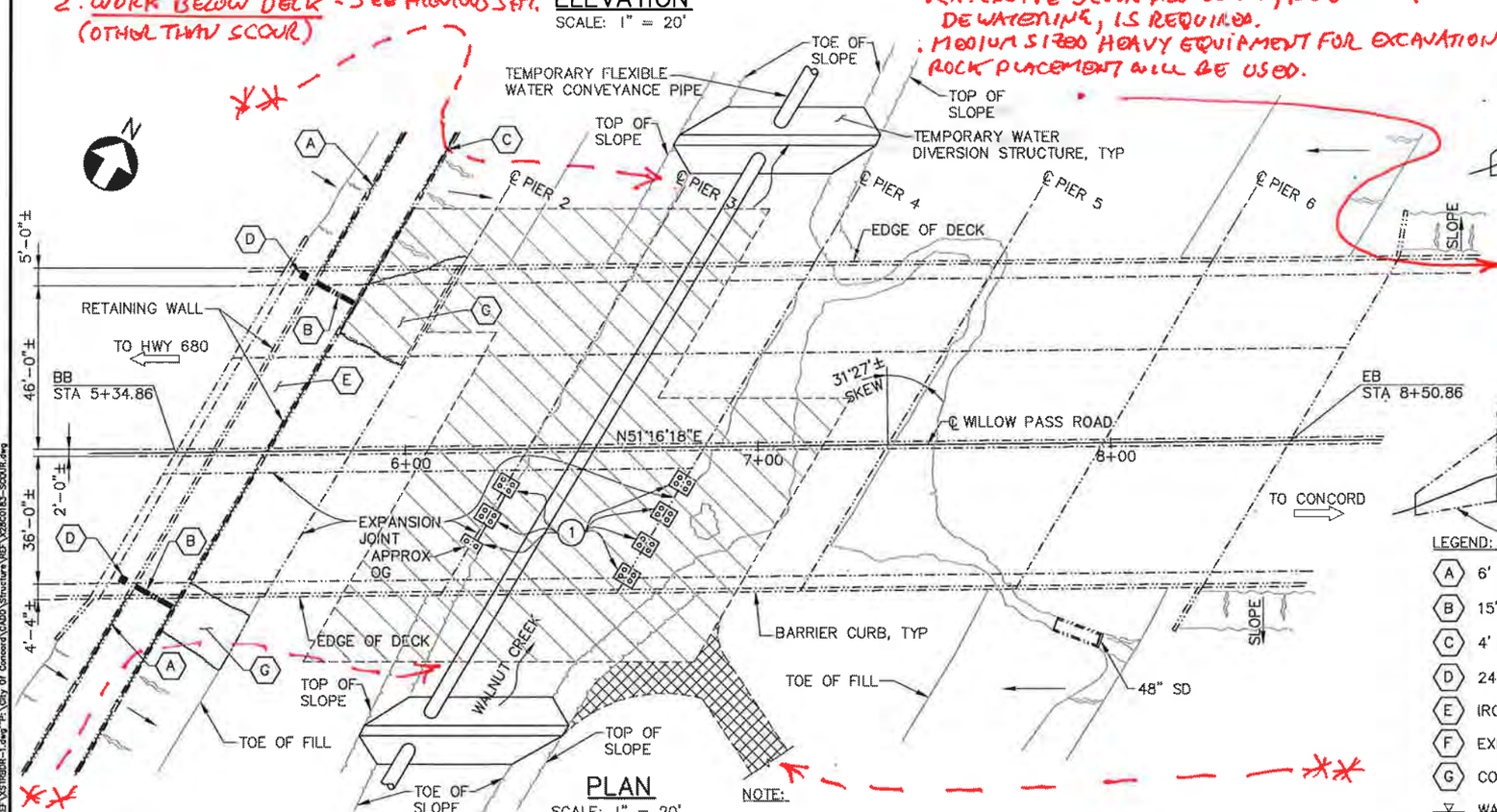


ELEVATION

SCALE: 1" = 20'

1. WORK ON DECK - SEE PREVIOUS SHT.
2. WORK BELOW DECK - SEE PREVIOUS SHT. (OTHER THAN SCOUR)

3. SCOUR PROTECTION
- EXTENSIVE SCOUR PROTECTION, REQUIRING DEWATERING, IS REQUIRED.
- MEDIUM SIZED HEAVY EQUIPMENT FOR EXCAVATION & ROCK PLACEMENT WILL BE USED.



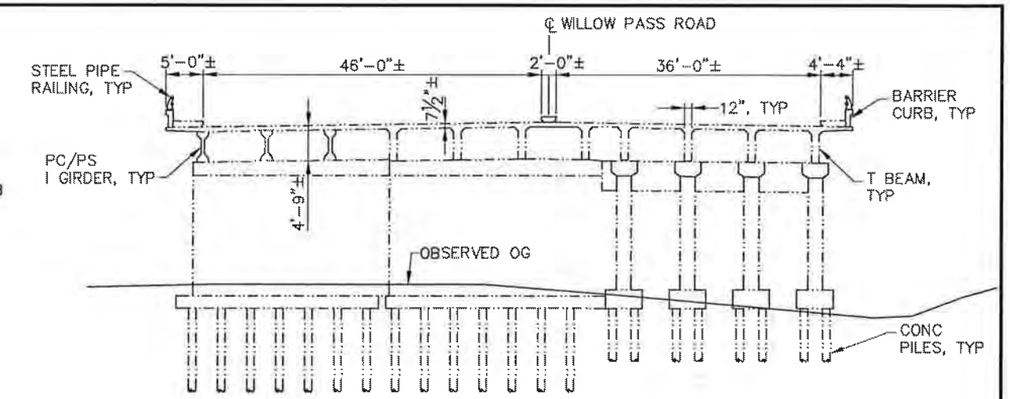
PLAN

SCALE: 1" = 20'

NOTE:

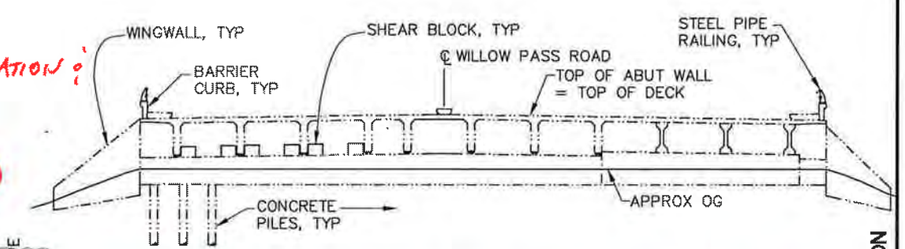
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

(THIS PLAN ACCURATE FOR BRIDGE SCOUR ISSUES ONLY)



PIER 4

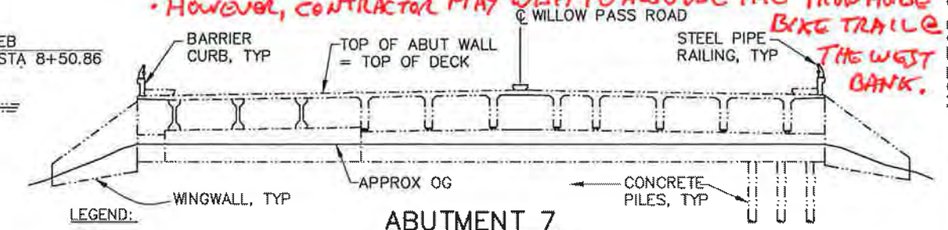
SCALE: 1" = 10'



ABUTMENT 1

SCALE: 1" = 10'

- MAIN ACCESS WILL BE BY 'CUT' ACCESS RD. FROM THE EAST BANK, USING THE ADJACENT PARKING LOT FOR MOBILIZATION AND STAGING.
- HOWEVER, CONTRACTOR MAY WISH TO ALSO USE THE "IRON HORSE" BIKE TRAIL @ THE WEST BANK.



ABUTMENT 7

SCALE: 1" = 10'

LEGEND:

- (A) 6' CHAIN LINK FENCE ON RW
- (B) 15" WIDE GRATED DRAIN
- (C) 4' CHAIN LINK FENCE
- (D) 24" x 24" DI
- (E) IRON HORSE REGIONAL TRAIL
- (F) EXPOSED PILE CAPS
- (G) CONCRETE ARMOR UNITS
- WATER LEVEL
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

- REPAIR/REHABILITATE RSP
- TEMPORARY ACCESS ROAD

NOTE:

FOR COST ESTIMATION, SEE PAGE 1 OF 2

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0183

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED _____
PROJECT ENGINEER
REVISED BY _____ DATE _____

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WILLOW PASS RD BRIDGE OVER WALNUT CREEK
SCOUR GENERAL PLAN

ST-XX

SHEET 2 OF 2

P:\City Of Concord\CADD\Structure\SHEET\28C0183-SCOUR-ST01.dwg Time:Jun09,2011-01:03pm
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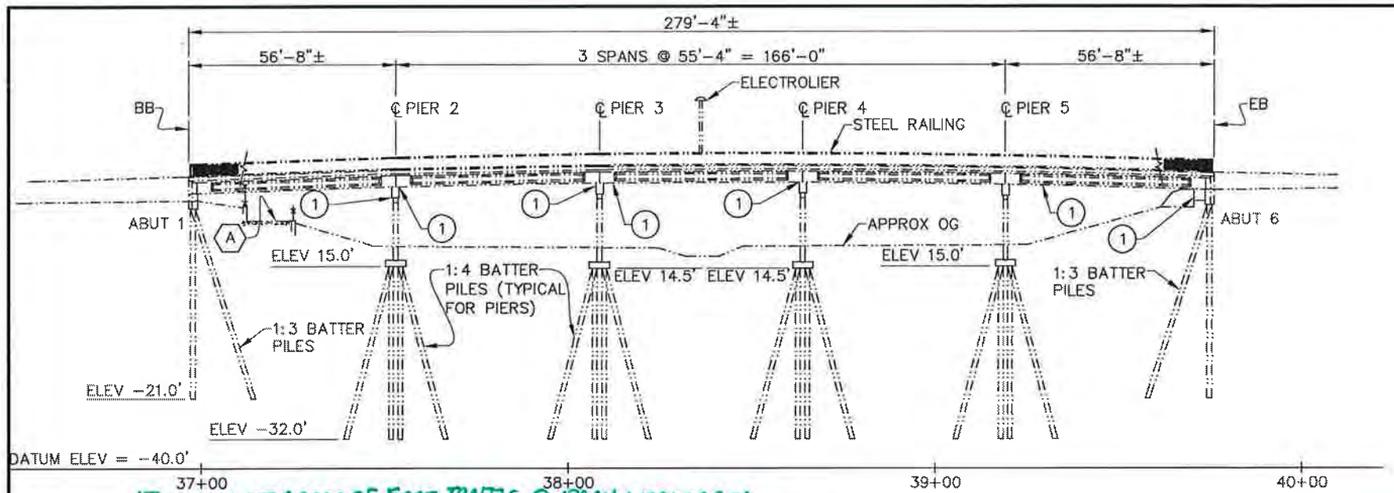
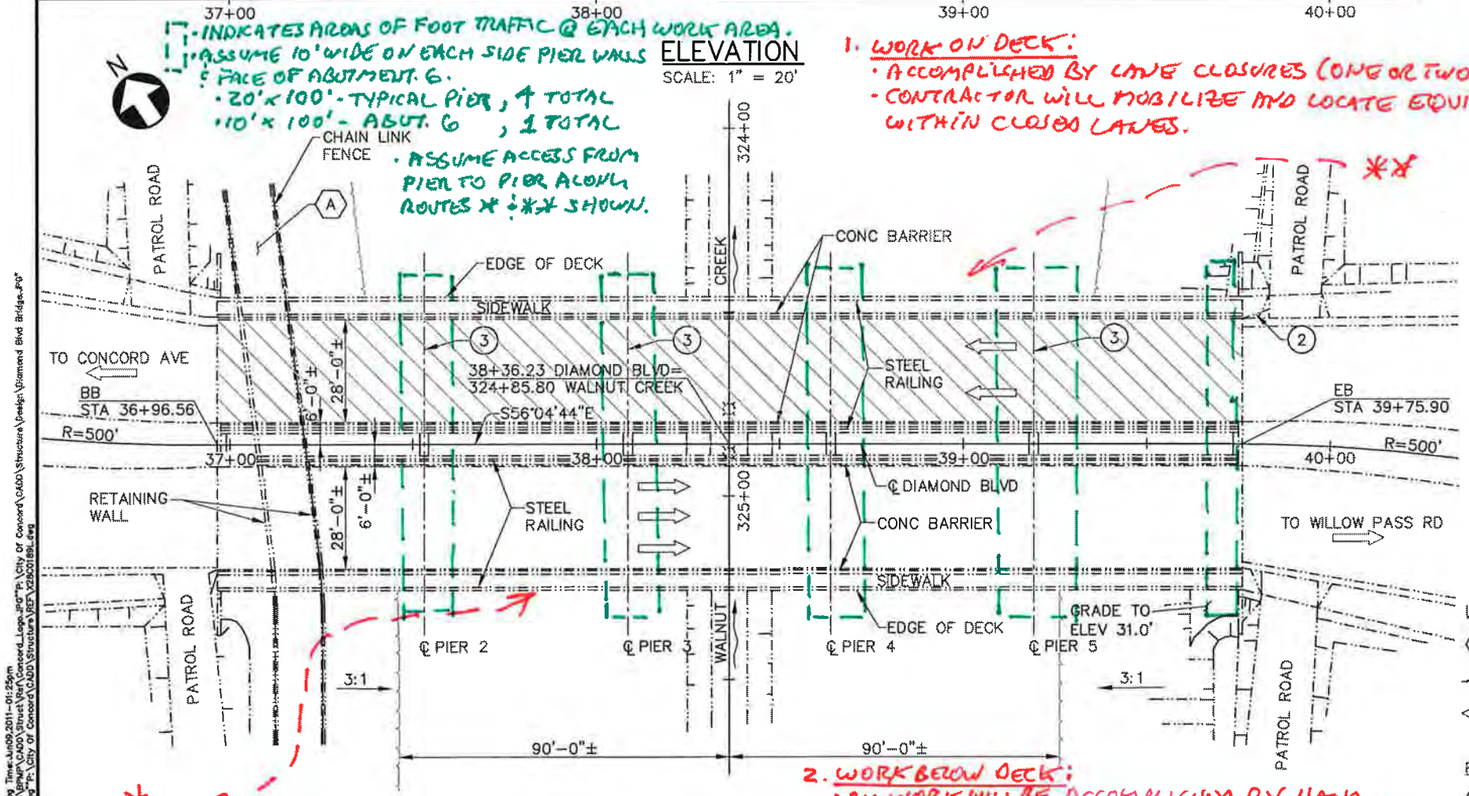


ELEVATION

SCALE: 1" = 20'

1. WORK ON DECK:
- ACCOMPLISHED BY LANE CLOSURES (ONE OR TWO AT A TIME).
- CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT WITHIN CLOSED LANES.

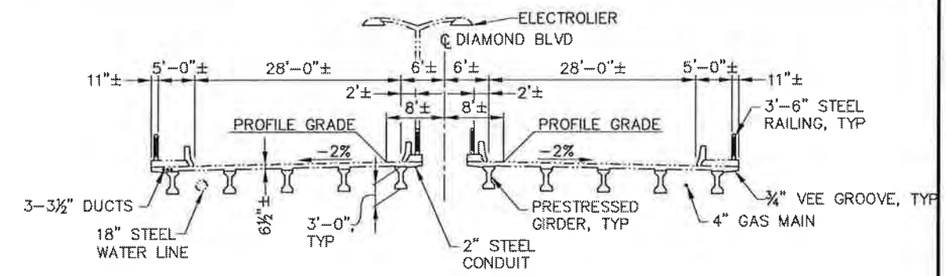


- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- ASSUME 10' WIDE ON EACH SIDE PIER WALLS & FACE OF ABUTMENT. 6.
- 20'x100' - TYPICAL PIER, 4 TOTAL
- 10'x100' - ABUT. 6, 1 TOTAL
- ASSUME ACCESS FROM PIER TO PIER ALONG ROUTES ** & **** SHOWN.

PLAN

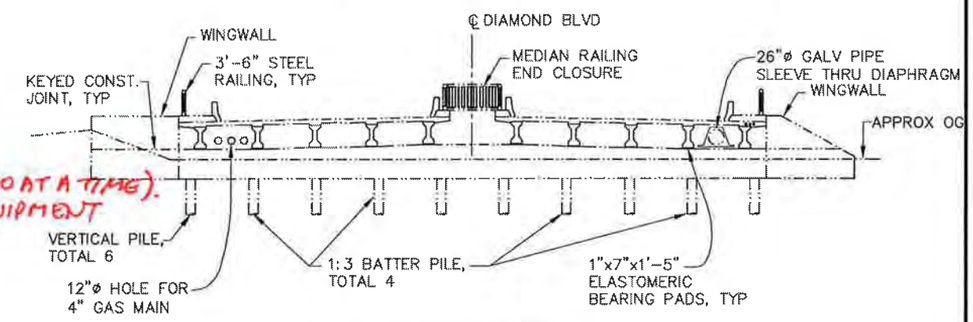
SCALE: 1" = 20'

2. WORK BELOW DECK:
- ALL WORK WILL BE ACCOMPLISHED BY HAND FROM LADDERS OR SCAFFOLDING, HAND CARRIED FROM EITHER END OF BRIDGE
- IT IS EXPECTED THAT CONTRACTOR WILL USE ADJACENT PRIVATE PARKING LOTS FOR MOBILIZATION.



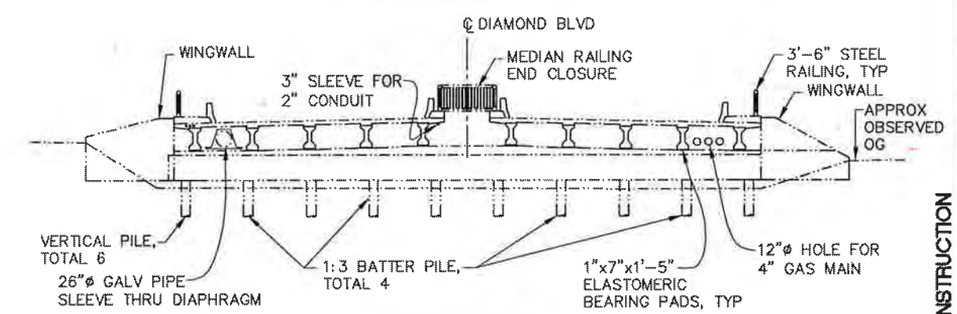
TYPICAL SECTION

SCALE: 1" = 10'



ABUTMENT 1

SCALE: 1" = 10'



ABUTMENT 6

SCALE: 1" = 10'

LEGEND:

- (A) IRON HORSE REGIONAL TRAIL
- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

- (1) SPALL AND ROCK POCKET REPAIRS
- (2) REPAIR BRIDGE METAL RAILING
- (3) CLEAN AND REPLACE JOINT SEALS
- POLYMER CONC OVERLAY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$2.66
TOTAL COST OF BRIDGE REPAIR	=	$53,300

NOT FOR CONSTRUCTION

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

BRIDGE NO: 28C0189L

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

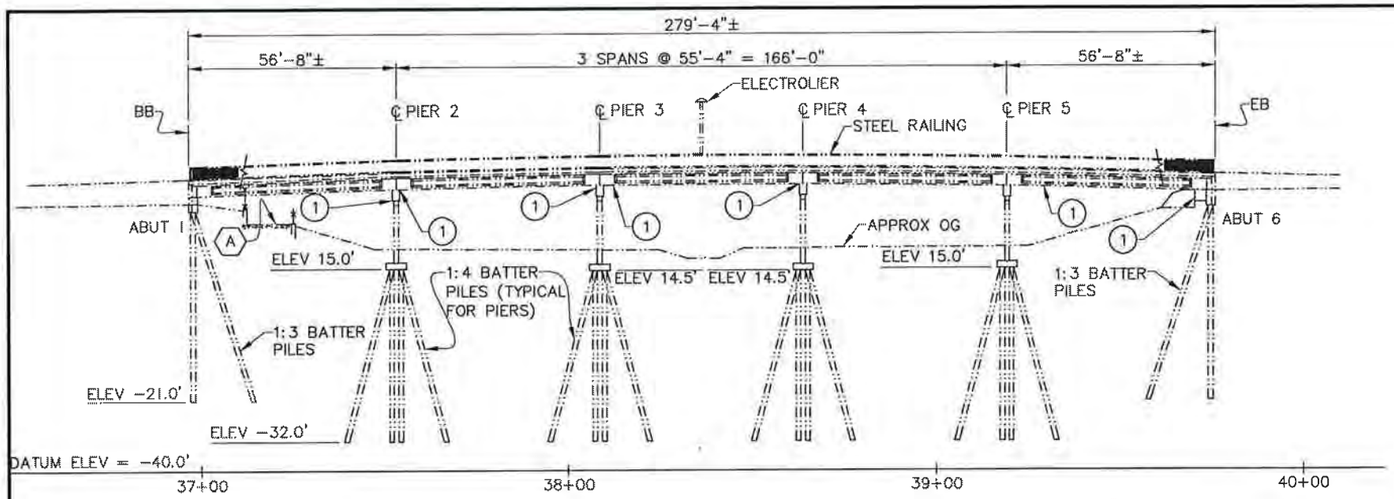
CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

DIAMOND BLVD BRIDGE OVER WALNUT CREEK
GENERAL PLAN

ST-XX

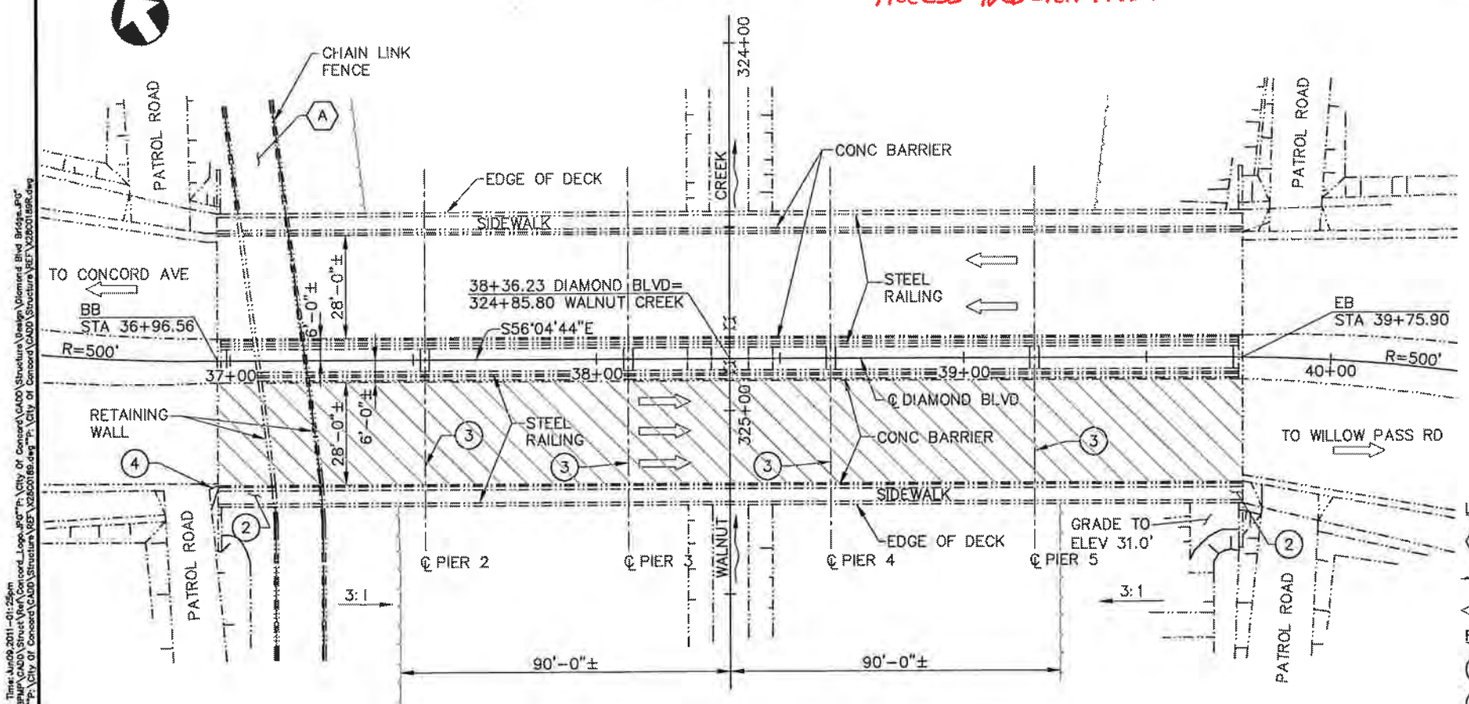
SHEET X OF XX



ELEVATION

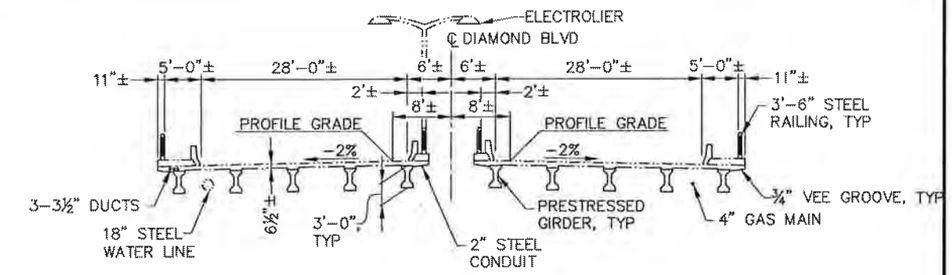
SCALE: 1" = 20'

•SEE BRIDGE NO. 28C-0189L FOR WORK & ACCESS DESCRIPTION.



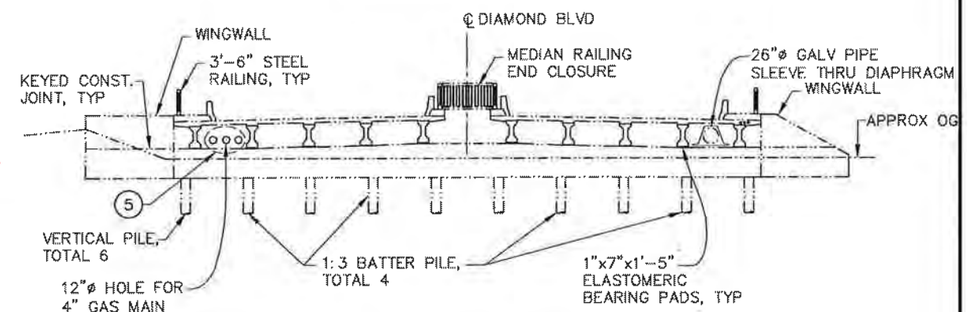
PLAN

SCALE: 1" = 20'



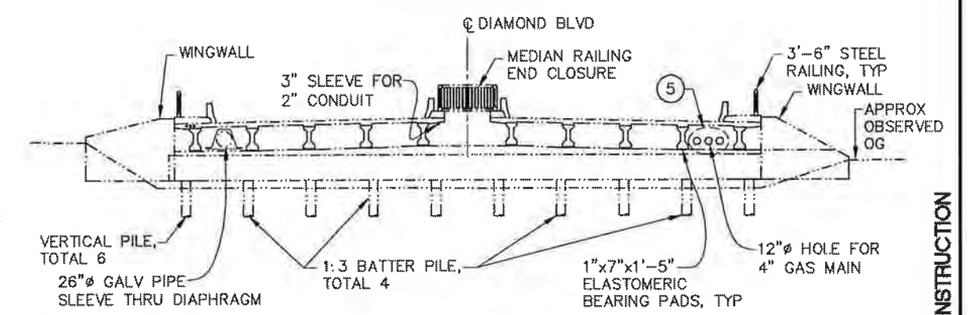
TYPICAL SECTION

SCALE: 1" = 10'



ABUTMENT 1

SCALE: 1" = 10'



ABUTMENT 6

SCALE: 1" = 20'

LEGEND:

- (A) IRON HORSE REGIONAL TRAIL
- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

- (1) SPALL AND ROCK POCKET REPAIRS
- (2) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
- (3) CLEAN AND REPLACE JOINT SEALS
- (4) REPAIR BRIDGE METAL RAILING
- (5) SEAL UTILITY OPENINGS AT ABUTMENTS
- POLYMER CONC OVERLAY

NOT FOR CONSTRUCTION

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$2.18
TOTAL COST OF BRIDGE REPAIR	=	$43,800

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

BRIDGE NO: 28C0189R

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. OUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

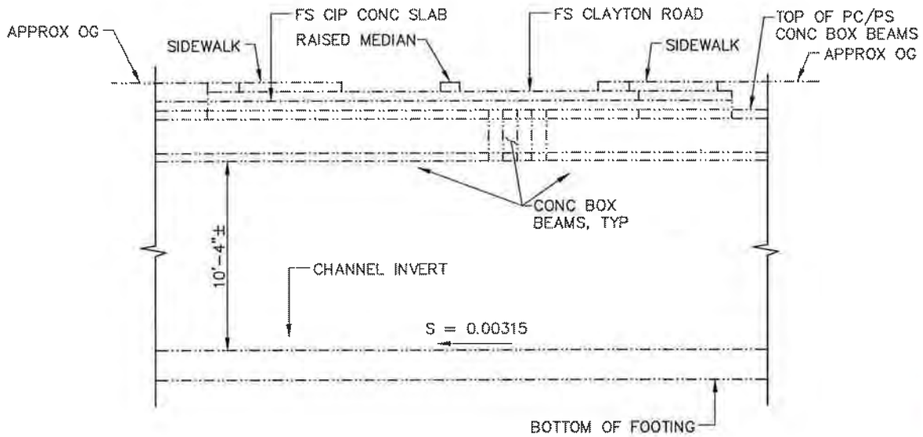
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

DIAMOND BLVD BRIDGE OVER WALNUT CREEK GENERAL PLAN

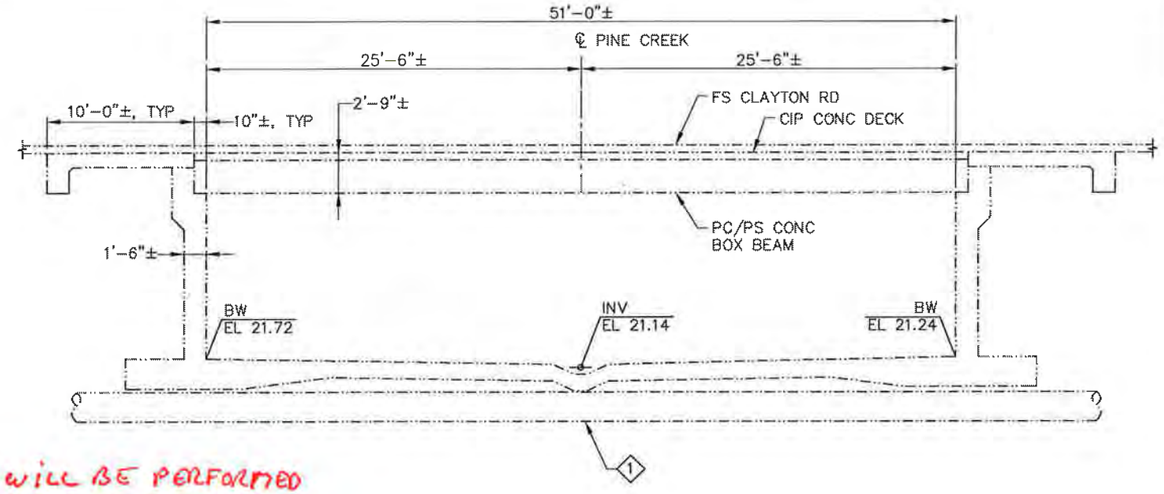
ST-XX

SHEET X OF XX



ELEVATION

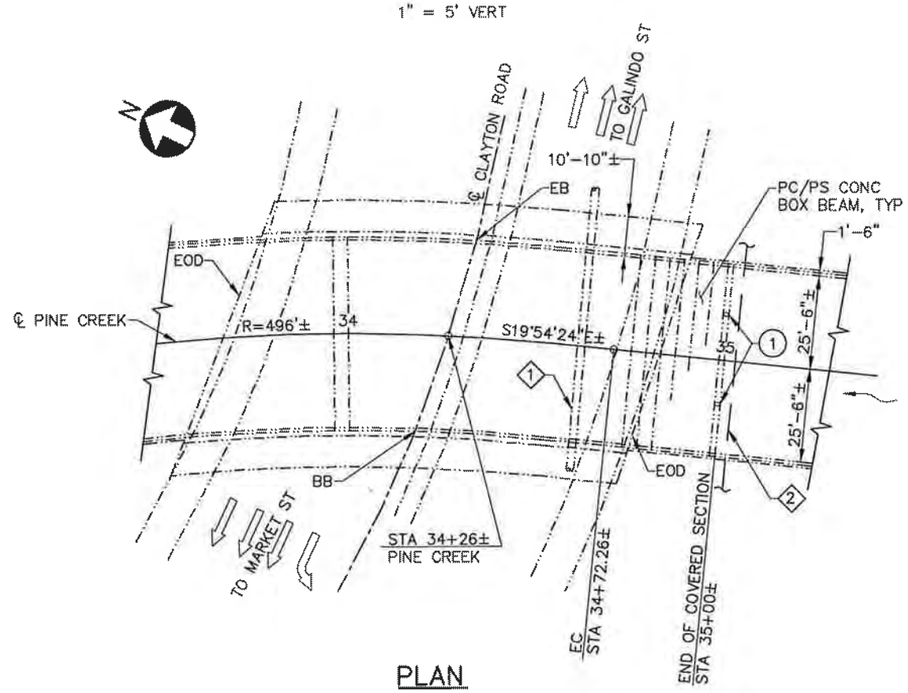
SCALE: 1" = 20' HORIZ
1" = 5' VERT



SECTION STA. 34+67

SCALE: 1" = 5'-0"

· NO WORK WILL BE PERFORMED AT THIS BRIDGE UNDER THE BPMP.
· CALTRANS HAS DETERMINED THAT THE REPAIR WORK NOTED IS THE RESPONSIBILITY OF THE UTILITY OWNER, WHOS ATTACHMENTS TO THE BRIDGE HAS CAUSED THE SPALLS.



PLAN

SCALE: 1" = 20'

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

UTILITY LEGEND:

1 TELEPHONE CABLE DUCTS

2 1'-10"± ø UTILITY

REPAIR LEGEND:

1 SPALL AND ROCK POCKET REPAIRS (BY OTHERS)

LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0198

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED

PROJECT ENGINEER

REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	P. ARIGO		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CLAYTON ROAD BRIDGE OVER PINE CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

P:\City of Concord\CADD\Structure\SHEET\28C0198-ST01.dwg Time:Jun09,2011-01:06pm
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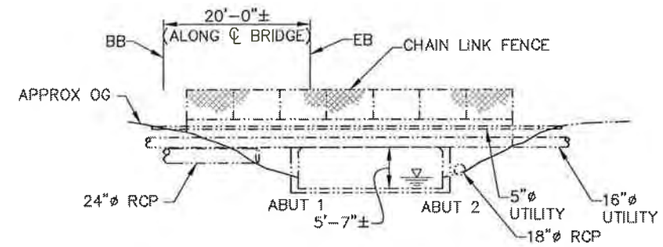
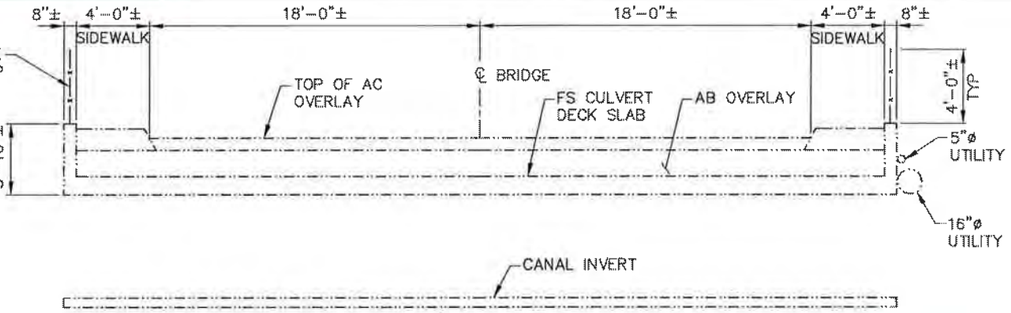
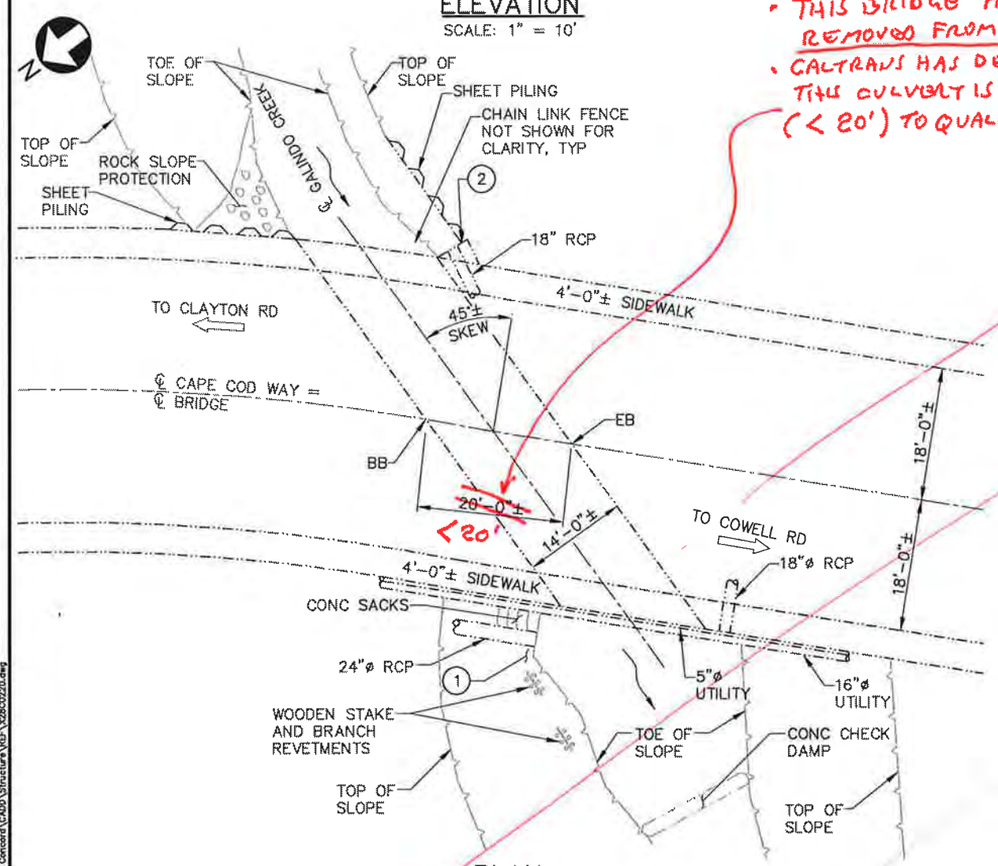


ELEVATION
SCALE: 1" = 10'

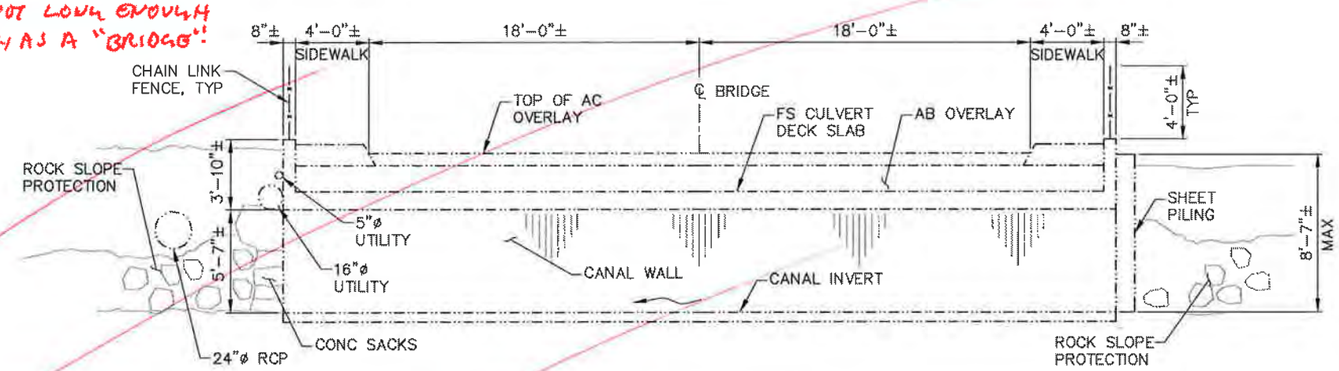


TYPICAL SECTION
SCALE: ¼" = 1'-0"

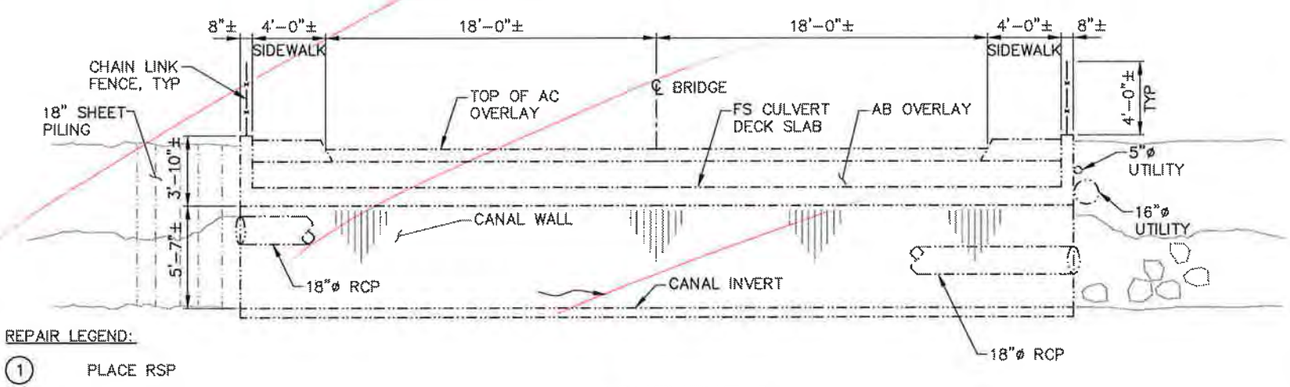
• THIS BRIDGE HAS BEEN REMOVED FROM THE BPMP.
• CALTRANS HAS DETERMINED THAT THE CULVERT IS NOT LONG ENOUGH (< 20') TO QUALIFY AS A "BRIDGE".



PLAN
SCALE: 1" = 10'



ABUTMENT 1
SCALE: ¼" = 1'-0"



ABUTMENT 2
SCALE: ¼" = 1'-0"

REPAIR LEGEND:

1. PLACE RSP
2. REPAIR JOINT

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC
- WATER SURFACE

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$49.78
TOTAL COST OF BRIDGE REPAIR	=	$44,600

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0220

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CAPE COD WAY BRIDGE OVER GALINDO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0220-ST01.dwg Time:Jun09,2011-01:26pm
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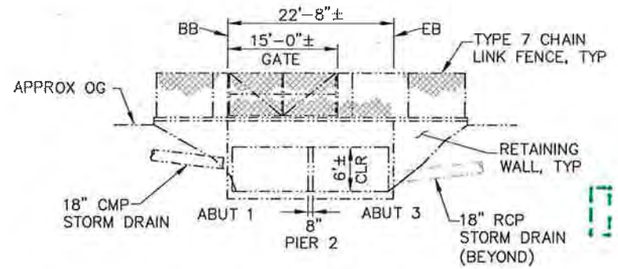
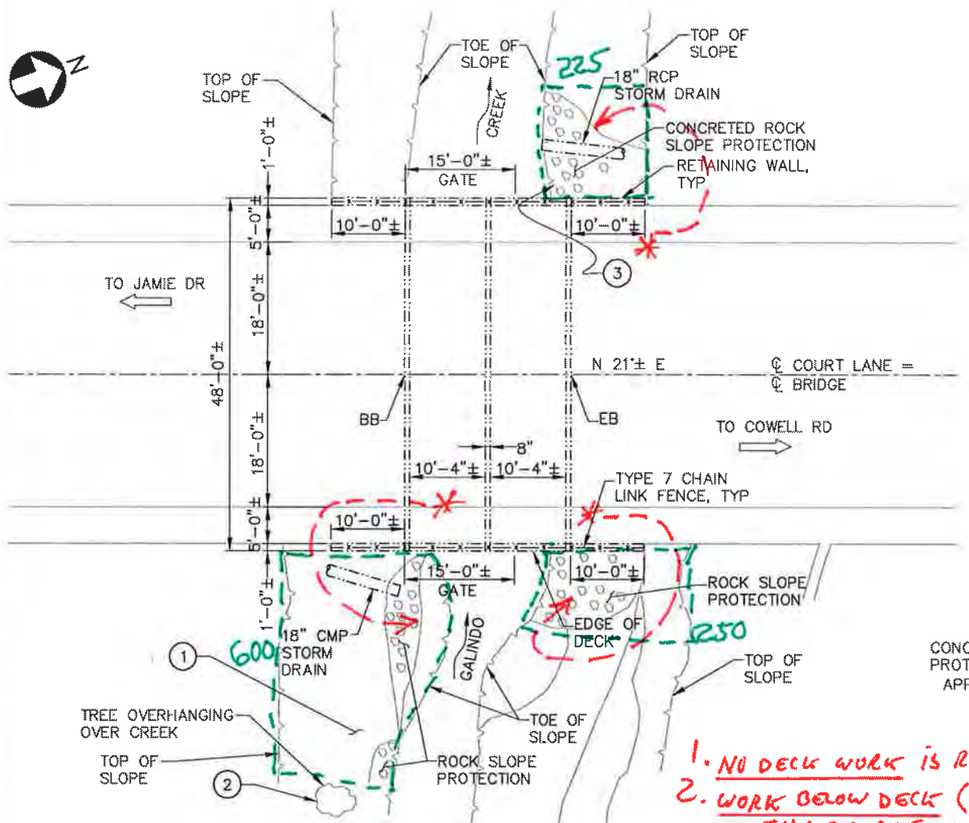


ELEVATION

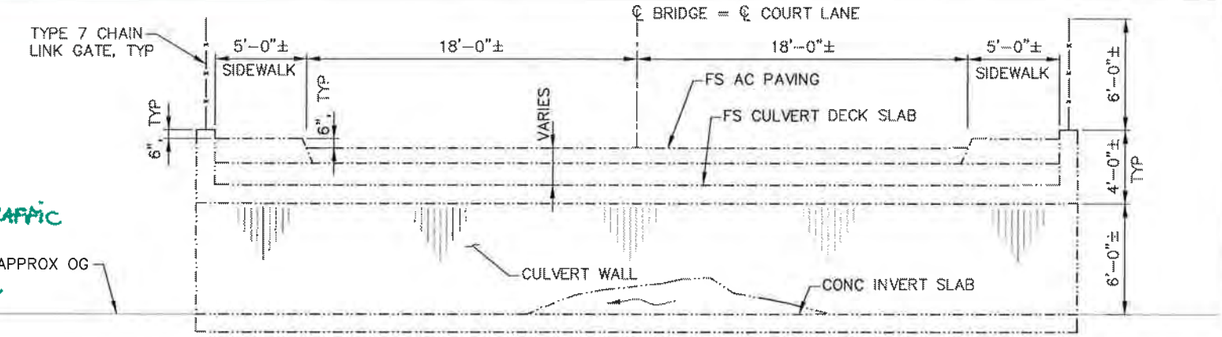
SCALE: 1" = 10'

- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT^2.
- ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.



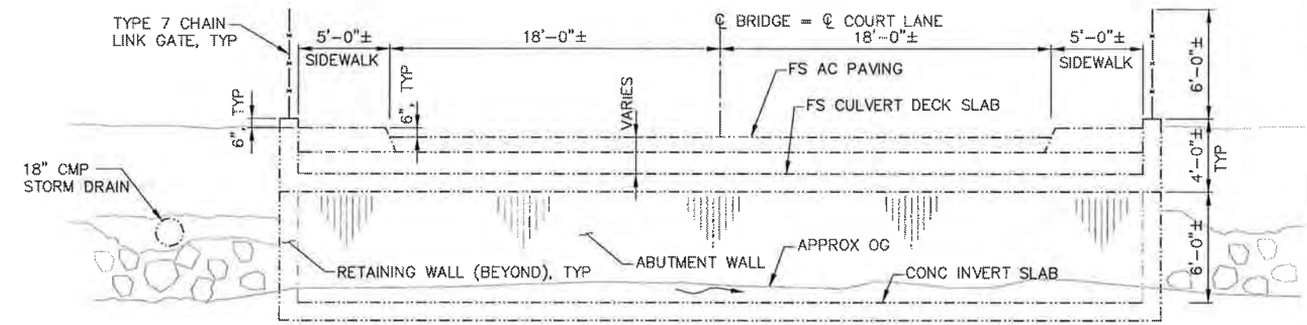
PLAN

SCALE: 1" = 10'



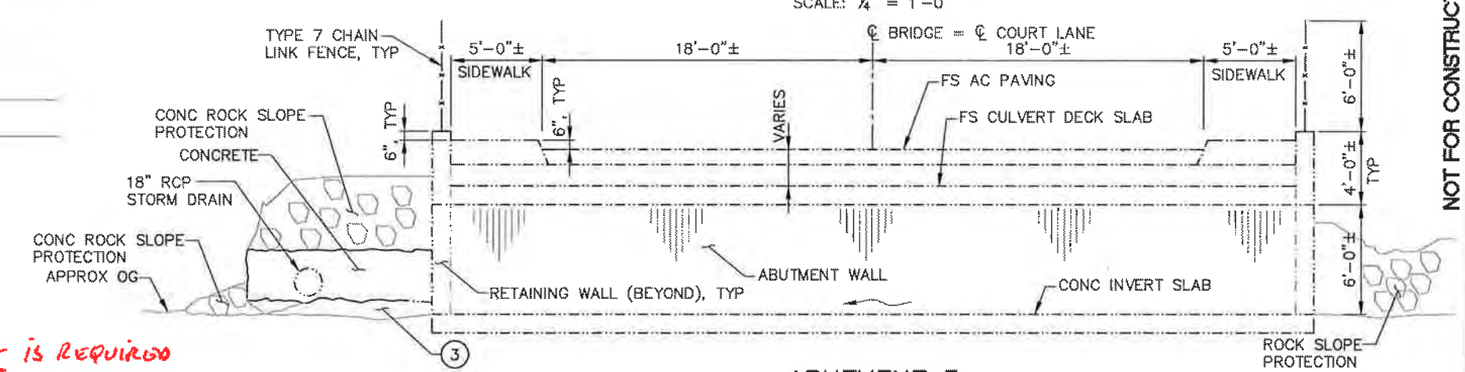
SECTION AT PIER 2

SCALE: ¼" = 1'-0"



ABUTMENT 1

SCALE: ¼" = 1'-0"



ABUTMENT 3

SCALE: ¼" = 1'-0"

NOT FOR CONSTRUCTION

1. NO DECK WORK IS REQUIRED
2. WORK BELOW DECK (BURRIED CULVERT TYPE BRIDGE)
   - THIS BRIDGE IS LOCATED IN A RESIDENTIAL AREA WITH A HOME @ EACH CORNER
   - WORK WILL BE BY HAND USING A GROUT PUMP LOCATED ON THE STREET, IF REQUIRED, FOR ITEM (3)
   - * CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING, SIGNS, CONES & OTHER SAFETY MEASURES.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. REPAIR/REHABILITATE RSP
2. REMOVE TREE (BY OTHERS)
3. REPAIR CONCRETED RSP

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$78.33
TOTAL COST OF BRIDGE REPAIR	=	$85,200

BRIDGE NO: 28C0221

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

COURT LANE BRIDGE OVER GALINDO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0221-ST01.dwg Time:Jun10,2011-01:08pm
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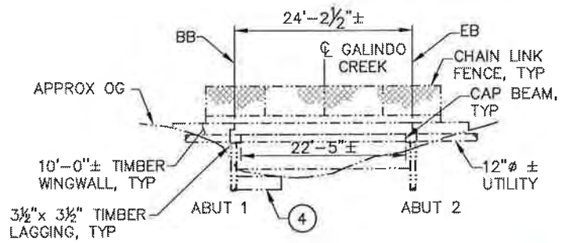


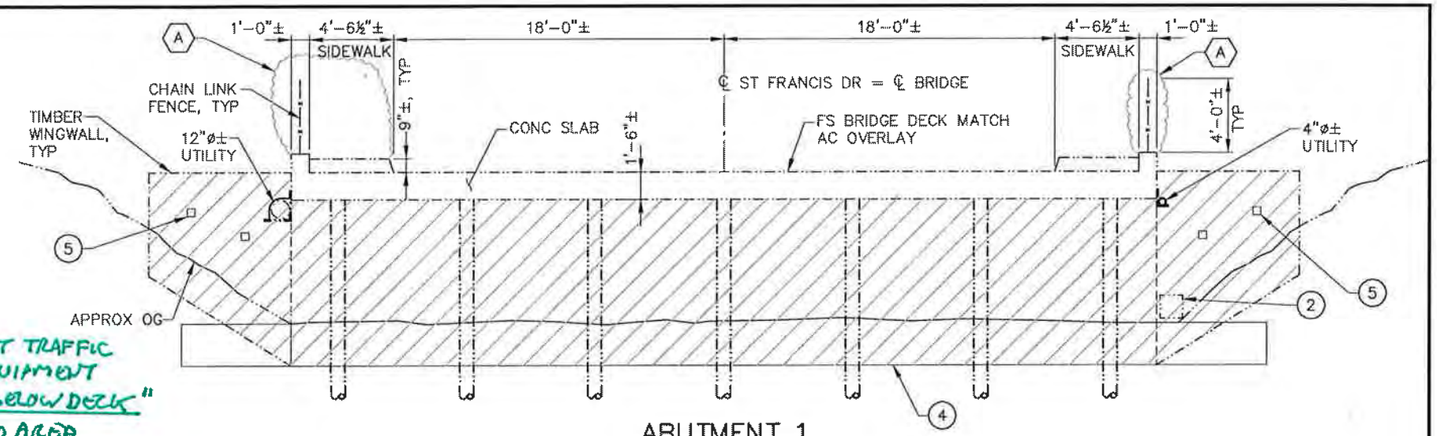
ELEVATION

SCALE: 1" = 10'

• INDICATES AREAS OF FOOT TRAFFIC INCLUDING USE OF EQUIPMENT NOTED IN "2. WORK BELOW DECK"

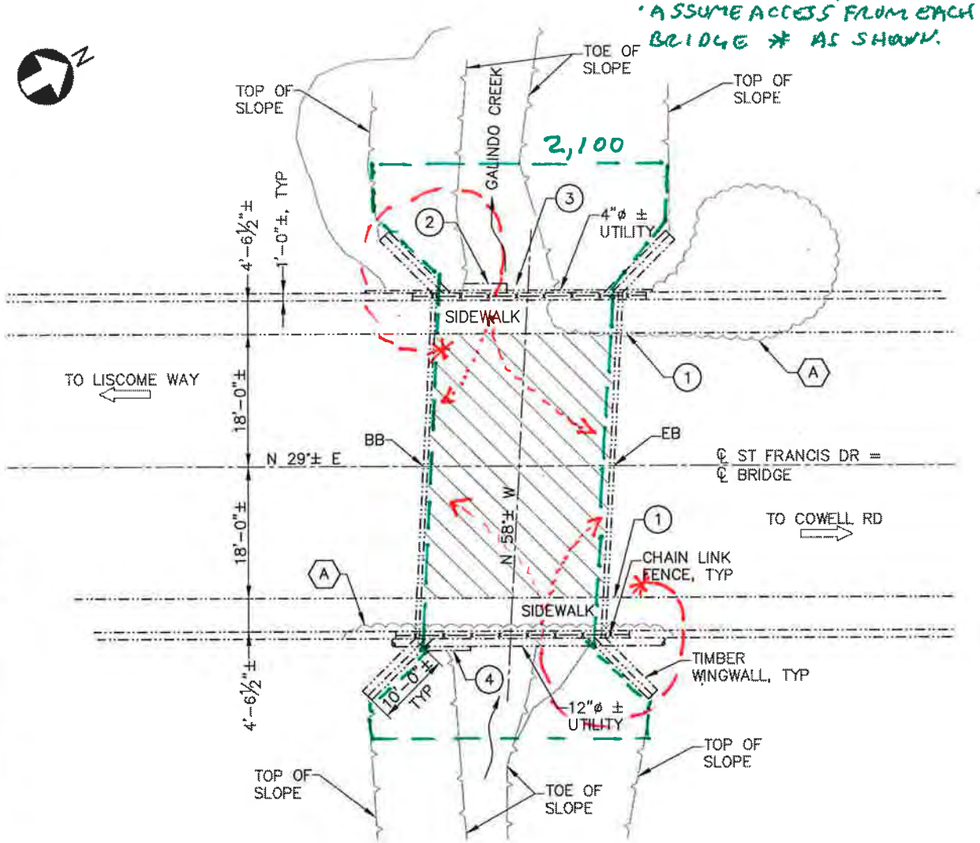
• TOTAL SIZE OF AFFECTED AREA ASSUMED = 2,100 FT²

• ASSUME ACCESS FROM EACH END OF BRIDGE * AS SHOWN.



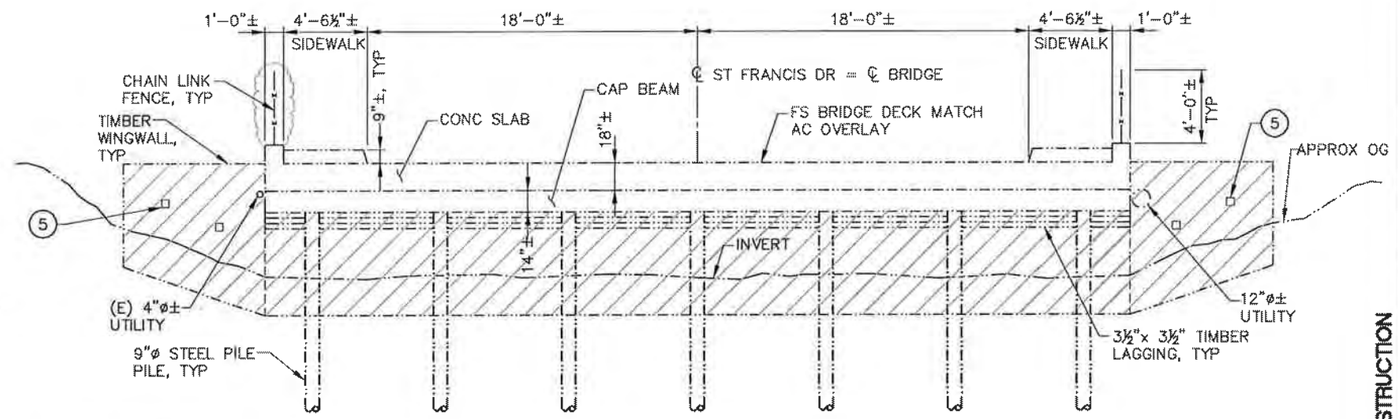
ABUTMENT 1

SCALE: ¼" = 1'-0"



PLAN

SCALE: 1" = 10'



ABUTMENT 2

SCALE: ¼" = 1'-0"

REPAIR LEGEND:

- SHOTCRETE LAGGING
- METHACRYLATE DECK SEAL
- (1) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)
- (2) REMOVE CONCRETE OBSTRUCTION
- (3) PLACE BROKEN CONCRETE TO FILL LOCAL SCOUR HOLE
- (4) REPAIR/REHABILITATE RSP
- (5) SOIL NAILS

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC
- (A) HEAVY VEGETATION

1. WORK ON DECK:
   - ACCOMPLISHED BY LANE CLOSURES (ONE AT A TIME)
2. WORK BELOW DECK (SINGLE SPAN FLAT-SLAB BRIDGE)
   - THIS BRIDGE IS LOCATED IN A RESIDENTIAL AREA WITH A HOME AT EACH CORNER.
   - WORK WILL MOSTLY BE BY HAND USING A PUMP TO PLACE SHOTCRETE LAGGING & SMALL MOBIL DRILL RIG TO PLACE SOIL NAILS

* • CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS, CONES & OTHER SAFETY MEASURES.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$98.44
TOTAL COST OF BRIDGE REPAIR	=	$112,200

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0222

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	ROBERT C. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

ST FRANCIS BRIDGE OVER GALINDO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0222-STR1.dwg Time:Jun09,2011-01:06pm
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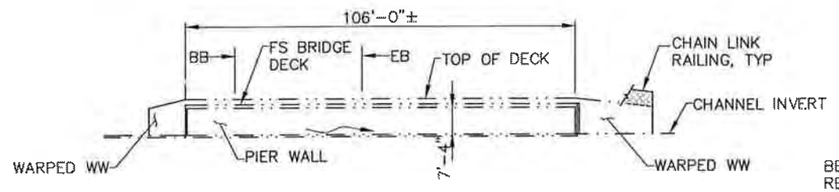
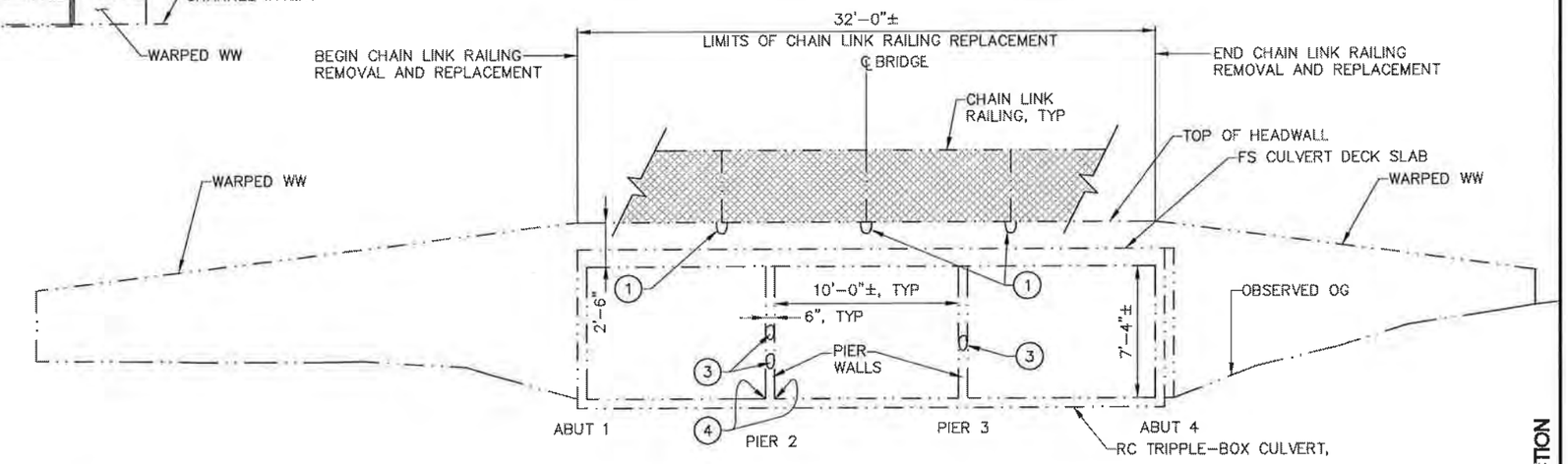


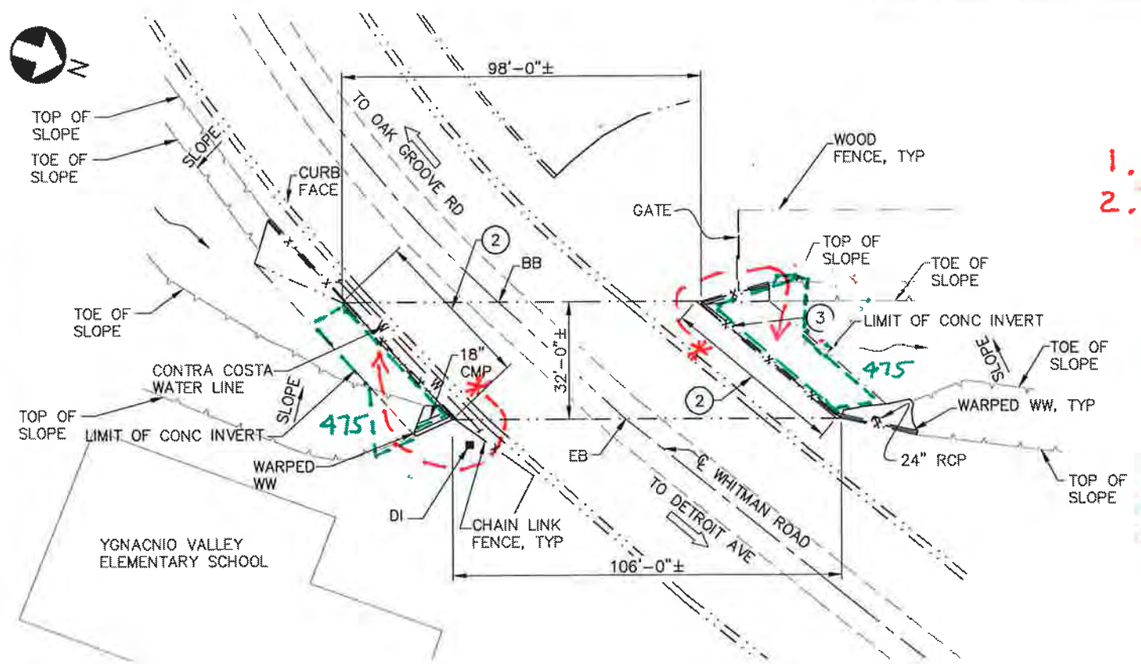
LONGITUDINAL SECTION

SCALE: 1" = 20'



ELEVATION AT UPSTREAM END OF RC CULVERT

SCALE: ¼" = 1'-0"



PLAN

SCALE: 1" = 20'

1. WORK ON DECK - NONE IS REQUIRED
2. WORK BELOW DECK. (BRIDGE IS A THREE CELL BURRIED CULVERT)
   - WORK WILL BE BY HAND USING A LADDER WHERE REQUIRED.

* - CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM STREET, WHICH WILL ALSO SERVE AS THE MOBILIZATION AREA BY USING SIGNS, CONES, & OTHER SAFETY MEASURES.

- INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO EACH AREA = SIZE OF AREA IN FT^2.
- ASSUME ACCESS TO EACH AREA FROM ROUTES * SHOWN.

REPAIR LEGEND:

1. SPALL REPAIR AT FENCE POST POCKET
2. REMOVE & REPLACE CHAIN LINK RAILING POST
3. SPALL AND ROCK POCKET REPAIR
4. REPAIR BASE OF PIER 2 AT INVERT

LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$16.53
TOTAL COST OF BRIDGE REPAIR	=	$49,300

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0224

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED

PROJECT ENGINEER

REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WHITMAN ROAD BRIDGE OVER SDM CHANNEL
GENERAL PLAN

ST-XX

SHEET X OF XX

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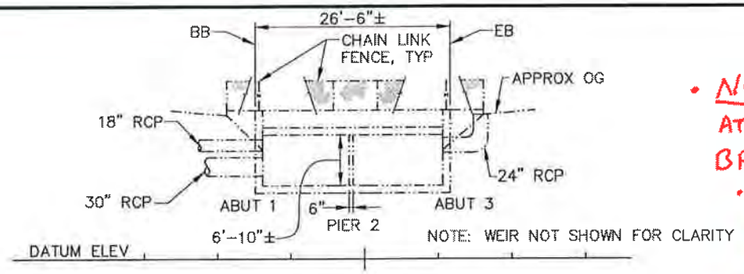
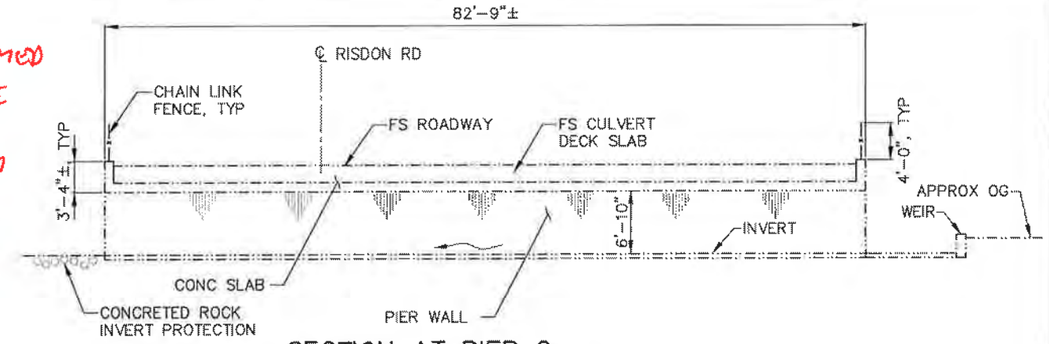


ELEVATION

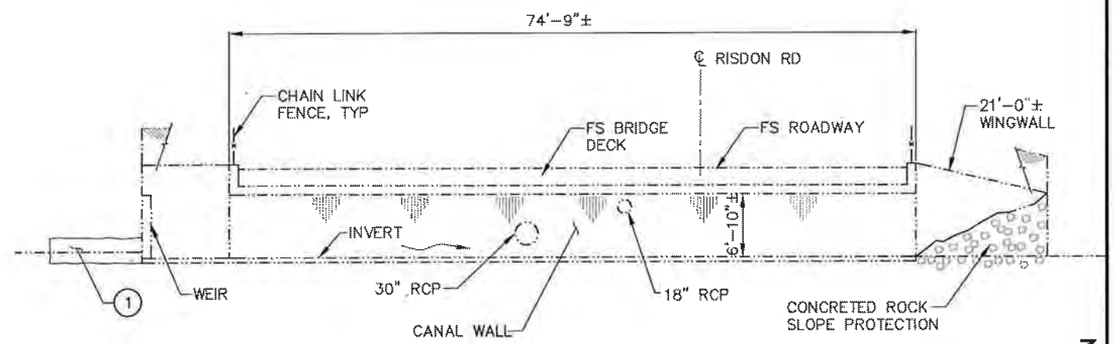
SCALE: 1" = 10'

- NO WORK WILL BE PERFORMED AT THIS BRIDGE UNDER THE BPMP.
  - CALTRANS HAS DETERMINED THAT THE REPAIR WORK NOTED FOR THE CONCRETED RSP IS BEYOND THE LIMITS OF THE BRIDGE STRUCTURE (ASSOCIATED W/ WEIR RATHER THAN BRIDGE)



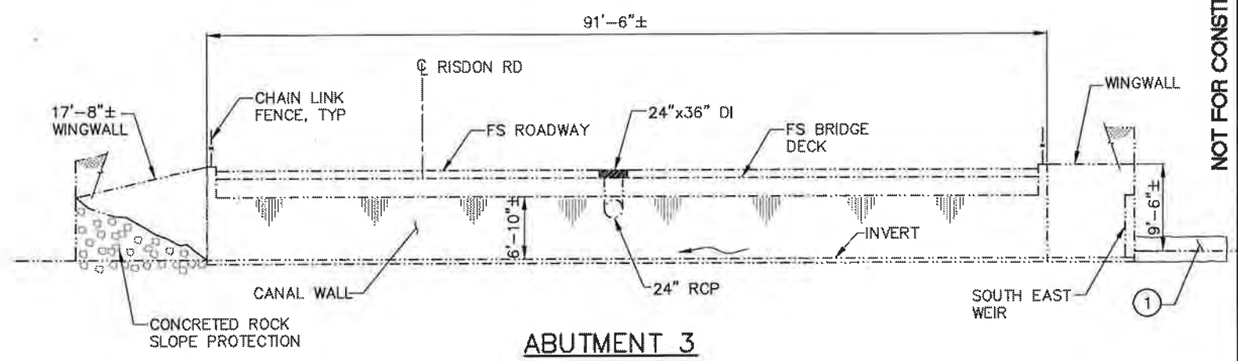
SECTION AT PIER 2

SCALE: ⅛" = 1'-0"



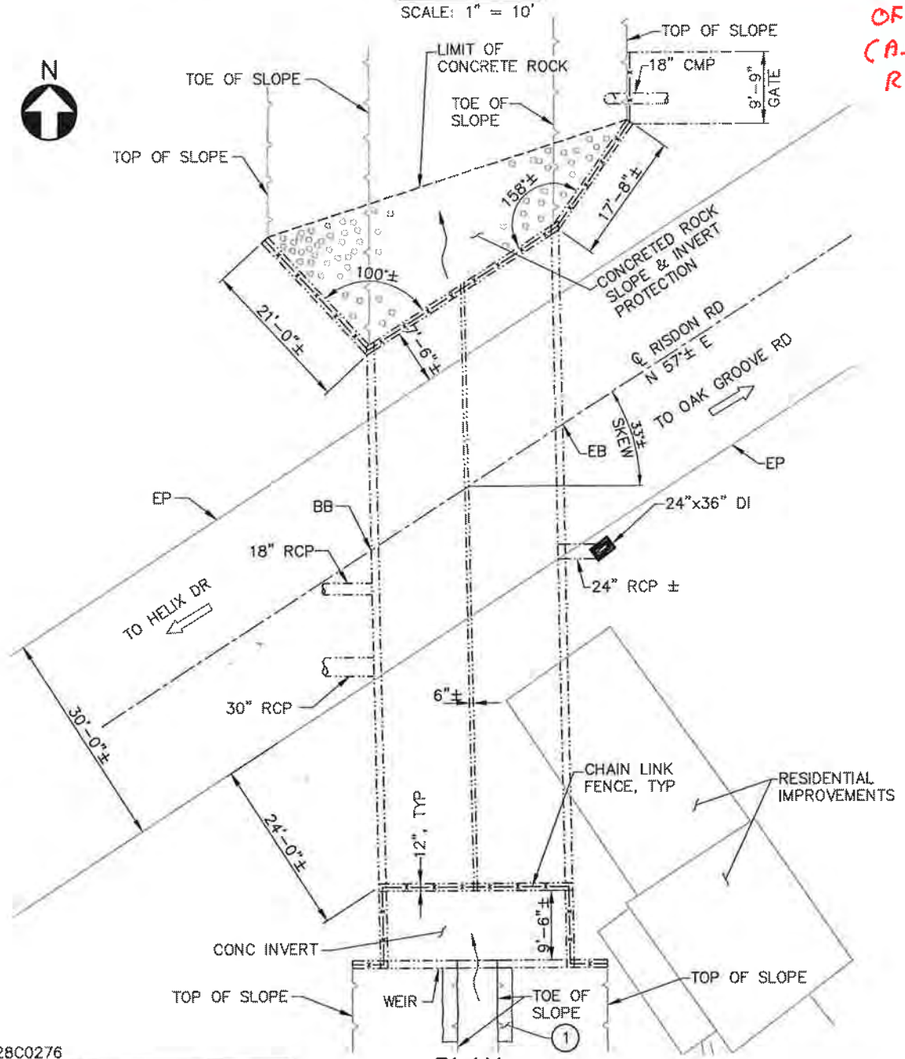
ABUTMENT 1

SCALE: ⅛" = 1'-0"



ABUTMENT 3

SCALE: ⅛" = 1'-0"



PLAN

SCALE: 1" = 10'

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

LEGEND:

FLOW DIRECTION

TRAFFIC DIRECTION

REPAIR LEGEND:

(1) REPAIR CONCRETED RSP (BY OTHERS)

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0276

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

RISDON ROAD BRIDGE OVER SDM CHANNEL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0276-ST01.dwg Time:Jun09,2011-01:11pm
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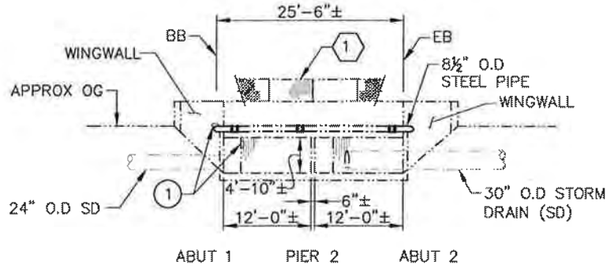
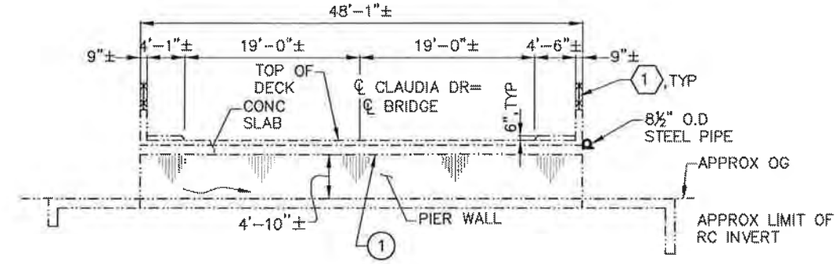


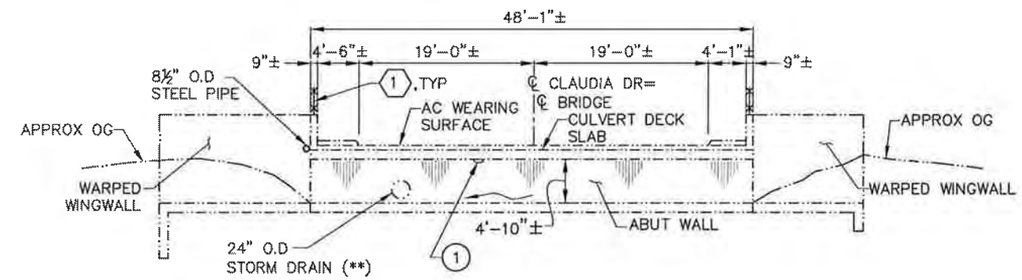
ELEVATION

SCALE: 1" = 10'



SECTION AT PIER 2

SCALE: ⅛" = 1'-0"

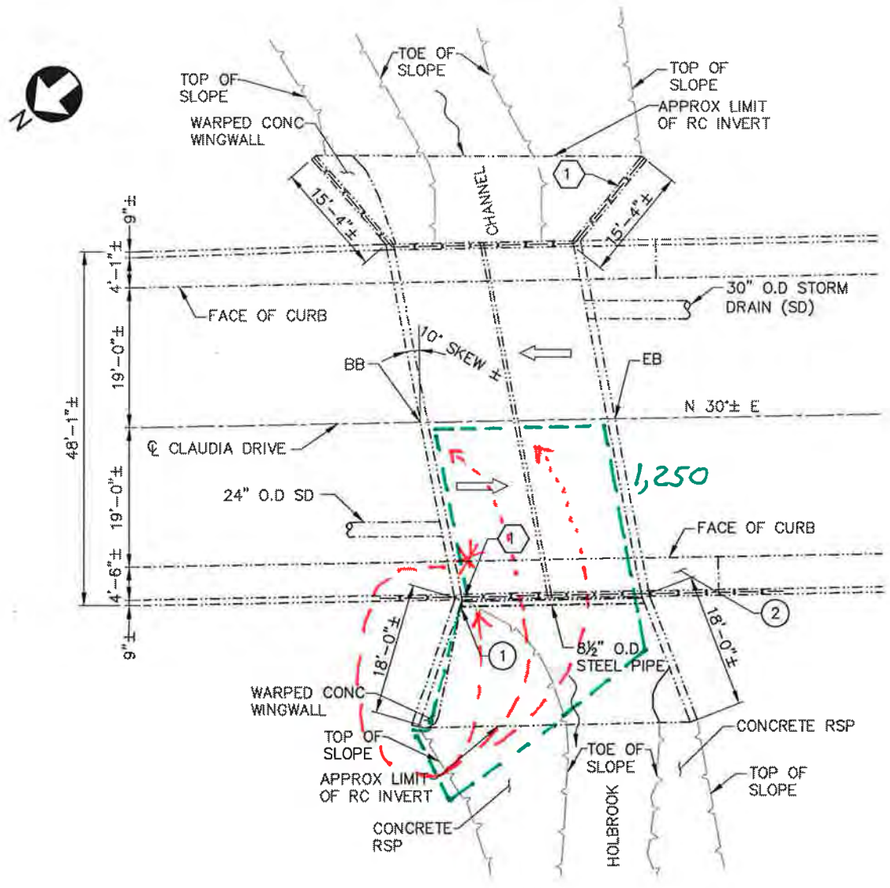


NOTE:
(**) 30" O.D STORM DRAIN AT ABUT 2

(ABUT 1 SHOWN, ABUT 2 SIMILAR AND OPPOSITE)

ABUTMENT 1

SCALE: ⅛" = 1'-0"



PLAN

SCALE: 1" = 10'

REPAIR LEGEND:

(1) SPALL AND ROCK POCKET REPAIRS

(2) REMOVE AND RECONSTRUCT SIDEWALK (PORTION)

LEGEND:

STREAM FLOW DIRECTION

DIRECTION OF TRAFFIC

(1) 3 FT HIGH CHAIN LINK FENCE

1. WORK ON DECK:
   - MINOR SIDEWALK: JOINT REPAIR ONLY
2. WORK BELOW DECK:
   - THIS BRIDGE IS LOCATED IN A RESIDENTIAL AREA WITH A HOME AT EACH CORNER.
   - WORK WILL BE BY HAND USING A LADDER IF REQUIRED

* - CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS, CONES AND OTHER SAFETY MEASURES.

!! • INDICATES AREAS OF FOOT TRAFFIC @ EACH WORK AREA.
- NUMBER NEXT TO AREA = SIZE OF AREA IN FT²
- ASSUME ACCESS IS FROM ROUTE * SHOWN.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$41.99
TOTAL COST OF BRIDGE REPAIR	=	$51,500

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0278

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811

Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

CLAUDIA DRIVE BRIDGE OVER HOLBROOK CHANNEL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City of Concord\CADD\Structure\SHEET\28C0278-ST01.dwg Time:Jun09,2011-01:12pm
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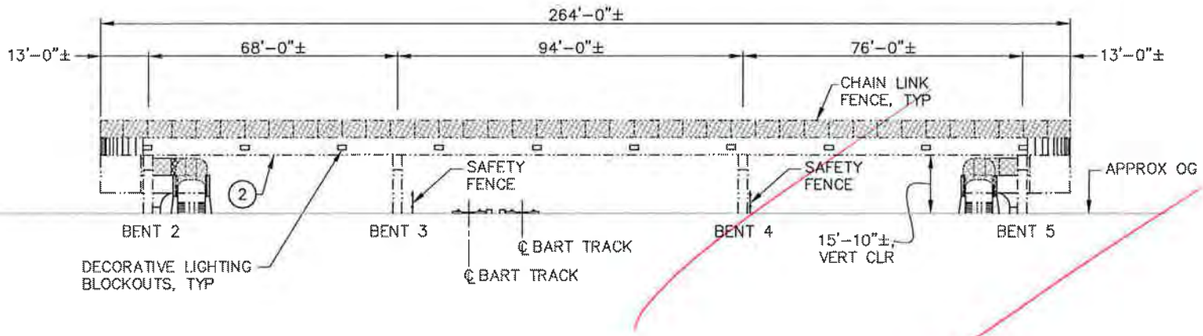
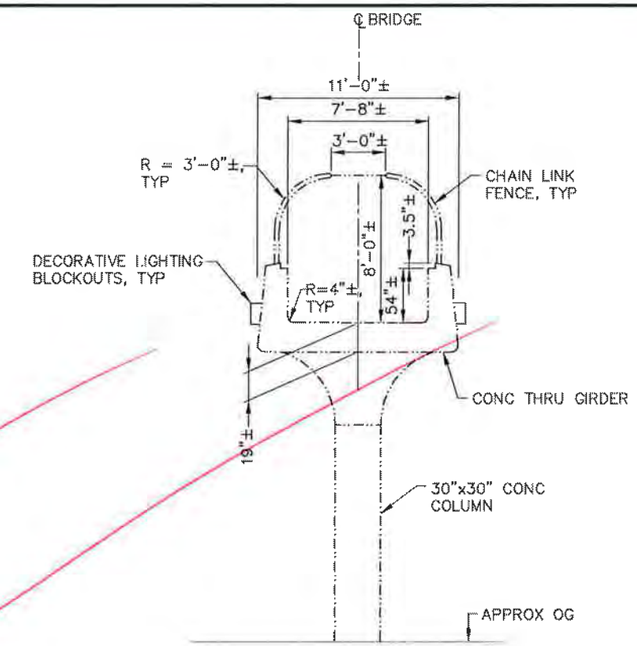
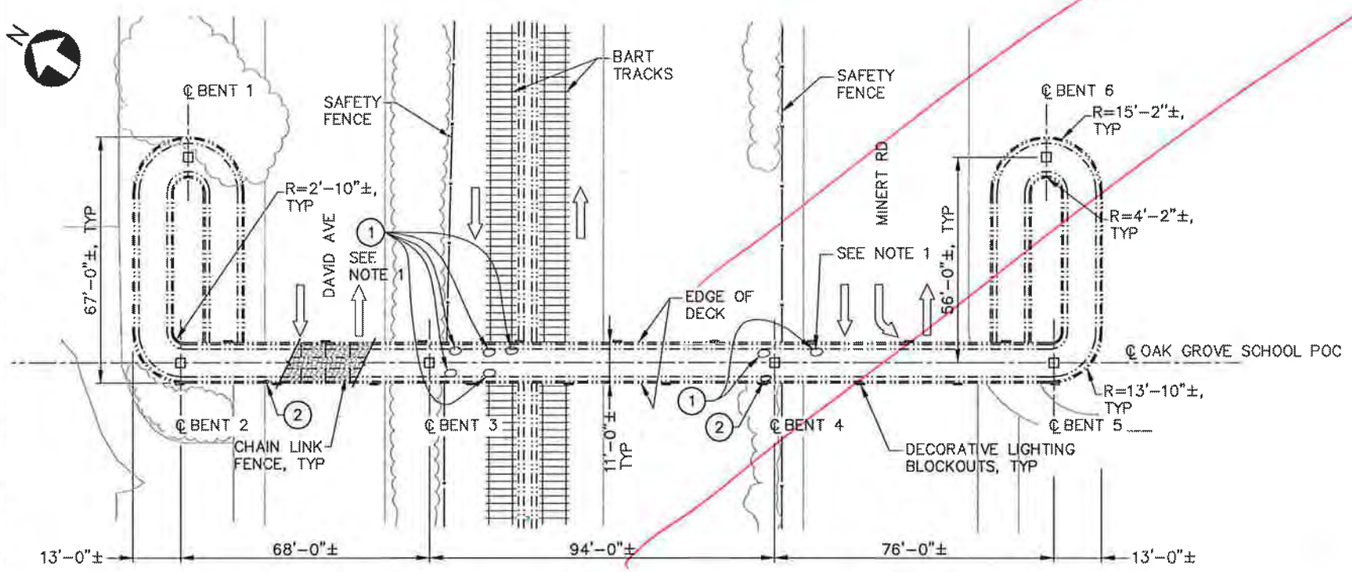


ELEVATION
SCALE: 1" = 20'



TYPICAL SECTION
SCALE: ¼" = 1'-0"



PLAN
SCALE: 1" = 20'

- THIS BRIDGE HAS BEEN REMOVED FROM THE BPMP
- CALTRANS HAS DETERMINED THAT P.O.C.'S DO NOT QUALIFY FOR BPMP FUNDING.

NOT FOR CONSTRUCTION

REPAIR LEGEND:

(1) REPAIR DECK SPALL

(2) SPALL AND ROCK POCKET REPAIRS

LEGEND:

TRAFFIC DIRECTION

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$3.68
TOTAL COST OF BRIDGE REPAIR	=	$10,700

BRIDGE NO: 28C0353

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

OAK GROVE SCHOOL POC
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City of Concord\CADD\Structure\SHEET\28C0353-ST01.dwg Time:Jun09,2011-01:13pm
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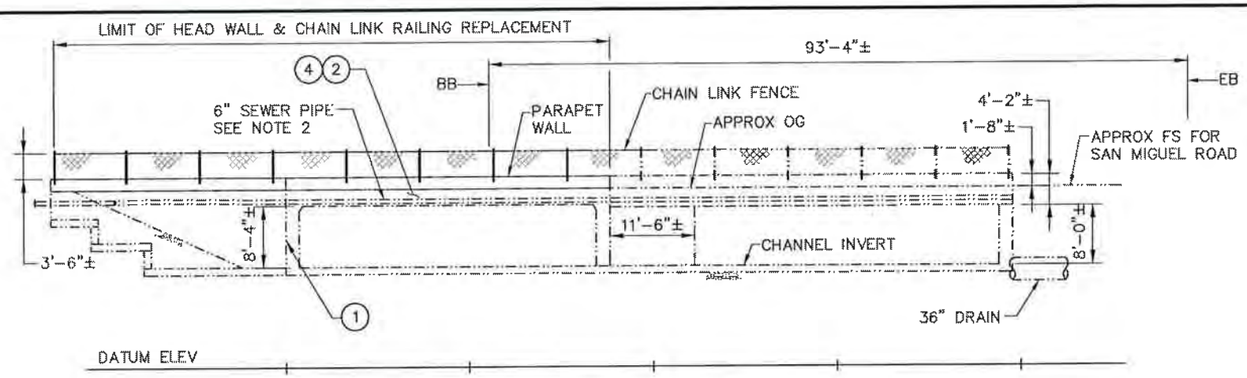


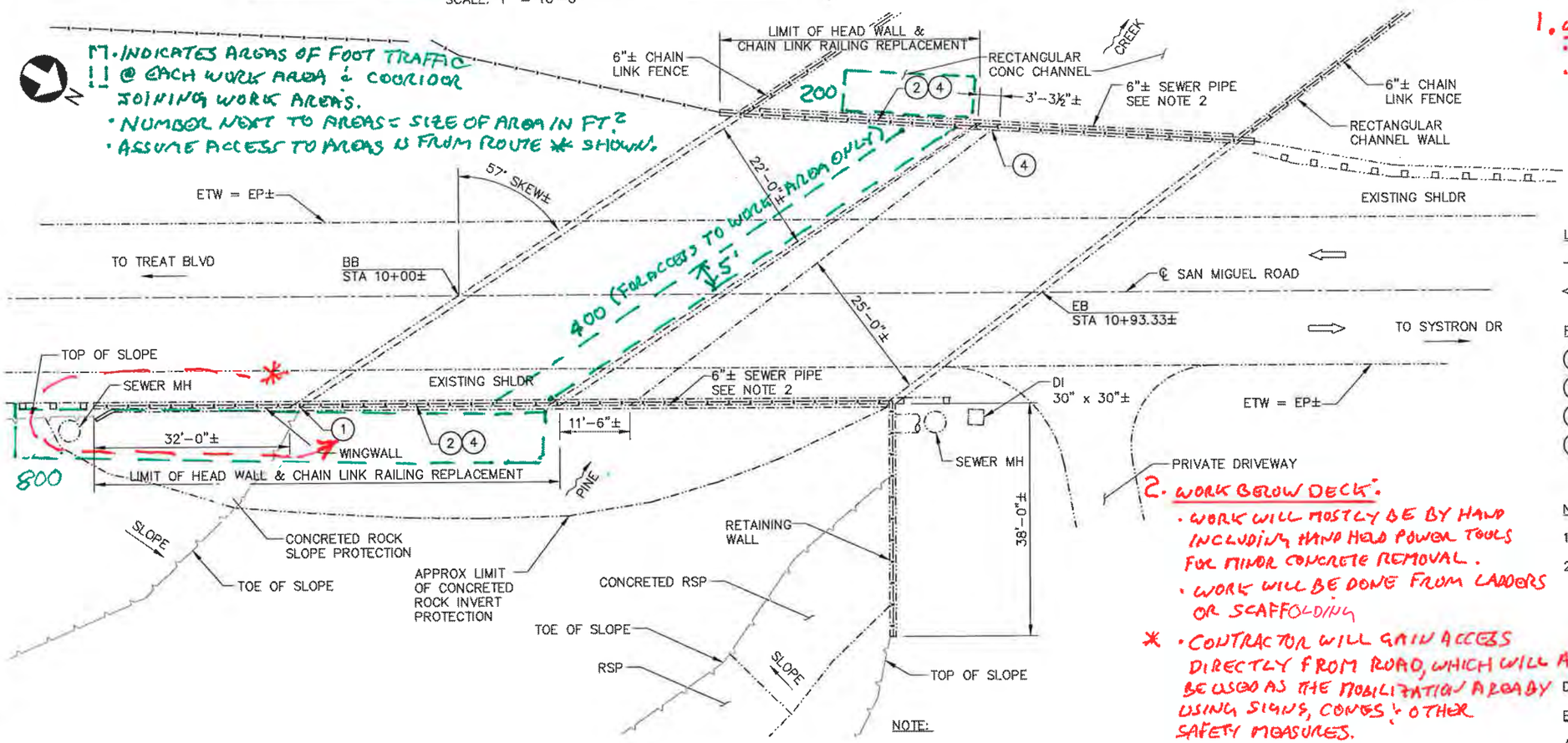
ELEVATION AT UPSTREAM END OF RC CULVERT

SCALE: 1" = 10'-0"'

TYPICAL SECTION

SCALE: 1" = 5'-0"

1. WORK ON DECK (BURIED CULVERT TYPE BRIDGE)
   - CONCRETE BARRICA & FENCE REPAIR ONLY
   - ACCOMPLISHED FROM WIDE/GRAVEL SHOULDERS.



PLAN

SCALE: 1" = 10'-0"'

2. WORK BELOW DECK:
   - WORK WILL MOSTLY BE BY HAND INCLUDING HAND HELD POWER TOOLS FOR MINOR CONCRETE REMOVAL.
   - WORK WILL BE DONE FROM LADDERS OR SCAFFOLDING
   - * CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM ROAD, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS, CONES & OTHER SAFETY MEASURES.

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

LEGEND:

- WATER FLOW DIRECTION
- DIRECTION OF TRAFFIC

REPAIR LEGEND:

1. REPAIR JOINT BETWEEN BOX AND RW
2. REPLACE HEADWALL (PORTION)
3. SPALL AND ROCK POCKET REPAIRS
4. REMOVE AND REPLACE CHAIN LINK FENCE

NOTES:

1. SPALLS AT FENCE POST POCKETS
2. SEWER PIPE PROTECT IN PLACE

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$33.17
TOTAL COST OF BRIDGE REPAIR	=	$145,500

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0357

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	P. ARIGO		
CHECKED BY:			

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Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA, 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

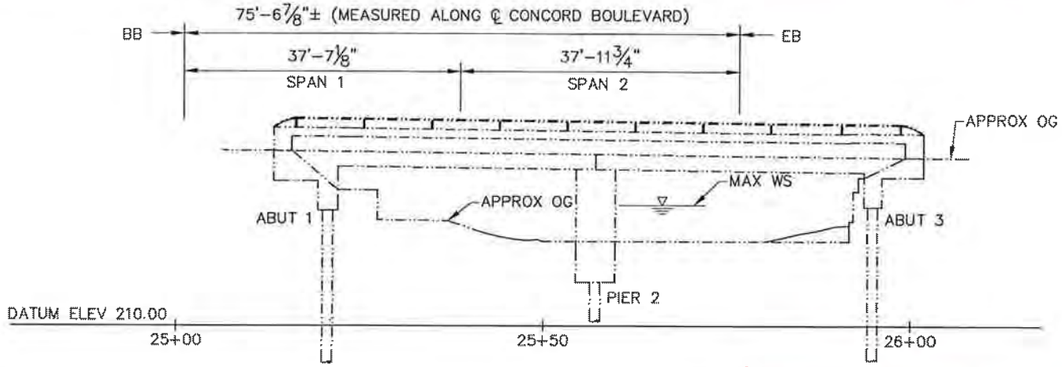
CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

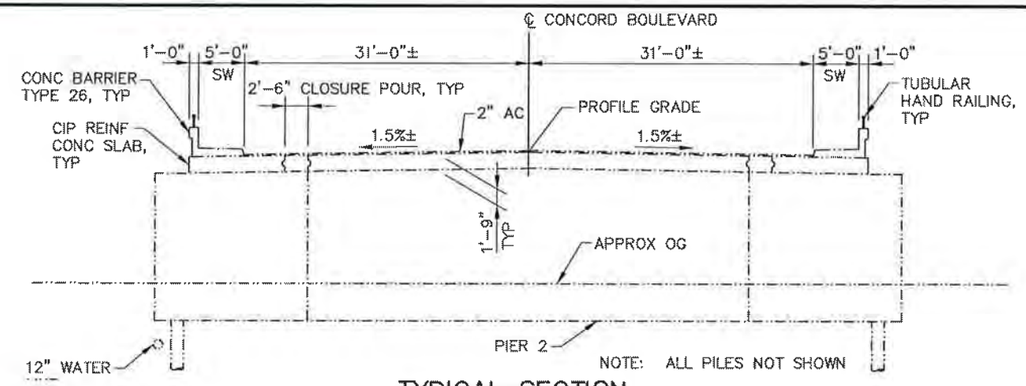
SAN MIGUEL ROAD BRIDGE OVER PINE CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX



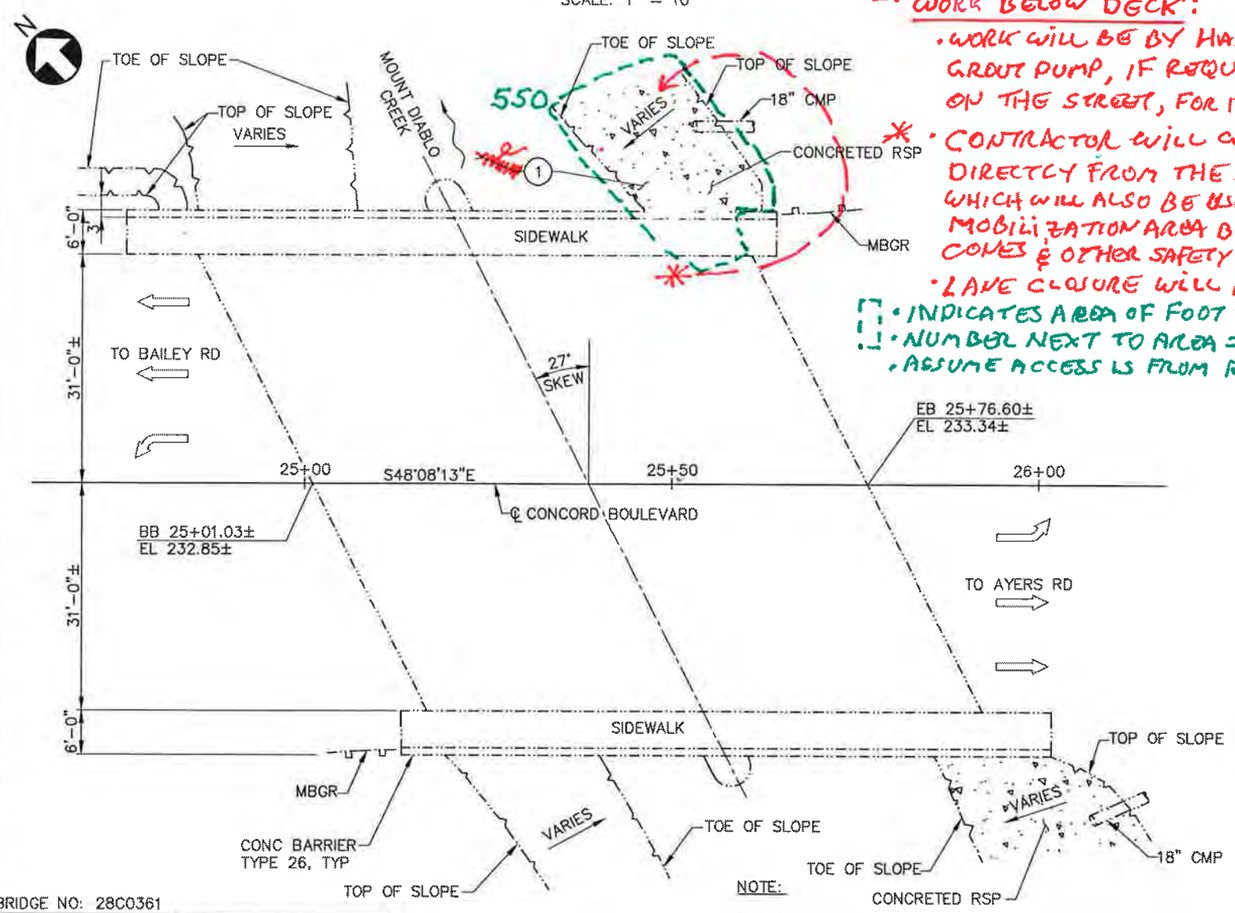
ELEVATION
SCALE: 1" = 10'



TYPICAL SECTION
SCALE: 1/8" = 1'-0"

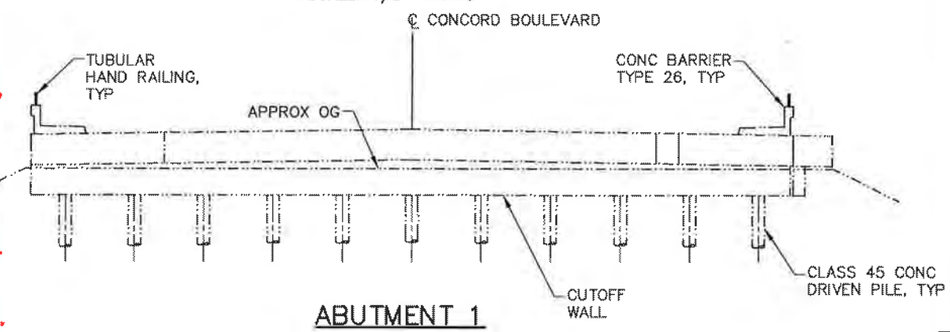
1. WORK ON DECK: NONE IS REQUIRED
2. WORK BELOW DECK:
   - WORK WILL BE BY HAND USING A GROUT PUMP, IF REQUIRED, LOCATED ON THE STREET, FOR ITEM 1
   - * CONTRACTOR WILL GAIN ACCESS DIRECTLY FROM THE STREET, WHICH WILL ALSO BE USED AS THE MOBILIZATION AREA BY USING SIGNS CONES & OTHER SAFETY MEASURES.
   - LANE CLOSURE WILL BE REQUIRED.

[ ] • INDICATES AREA OF FOOT TRAFFIC
• NUMBER NEXT TO AREA = SIZE OF AREA IN FT²
• ASSUME ACCESS IS FROM ROUTE * SHOWN.

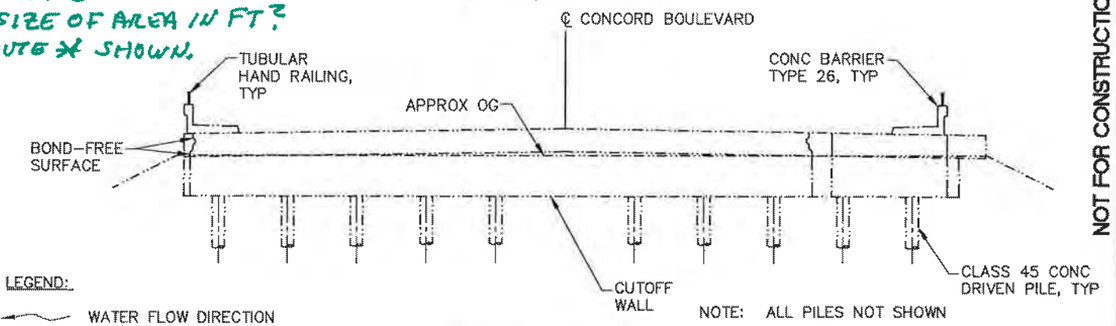


PLAN
SCALE: 1" = 10'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.
THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY



ABUTMENT 1
SCALE: 1/8" = 1'-0"



ABUTMENT 3
SCALE: 1/8" = 1'-0"

LEGEND:
- WATER FLOW DIRECTION
- TRAFFIC DIRECTION

REPAIR LEGEND:
1 REPAIR CONCRETED RSP

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$9.88
TOTAL COST OF BRIDGE REPAIR	=	$55,200

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0361

CITY REVIEW BY:
NAME DATE
REGISTERED PROFESSIONAL ENGINEER DANEA S. COMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

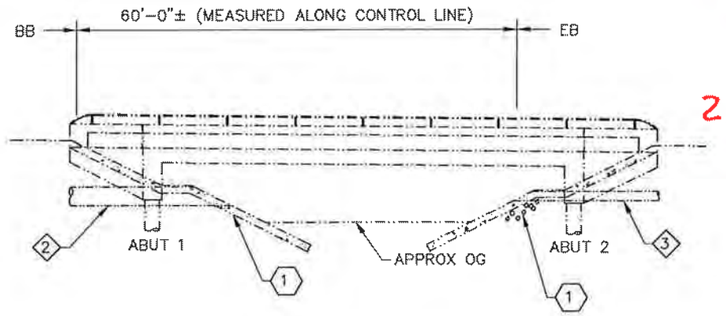
CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM
CONCORD BLVD BRIDGE OVER MOUNT DIABLO CREEK
GENERAL PLAN

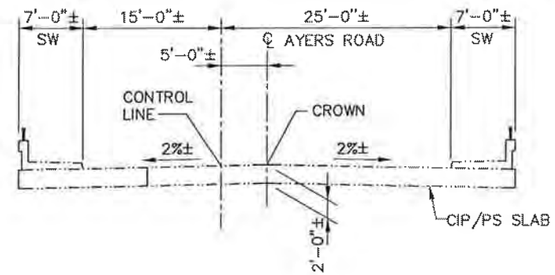
ST-XX
SHEET X OF XX

1. WORK ON DECK:
- ACCOMPLISHED BY LANE CLOSURE (ONE AT A TIME) TO PLACE DECK SEAL
- CONTRACTOR WILL MOBILIZE AND LOCATE EQUIPMENT IN CLOSED LANE.

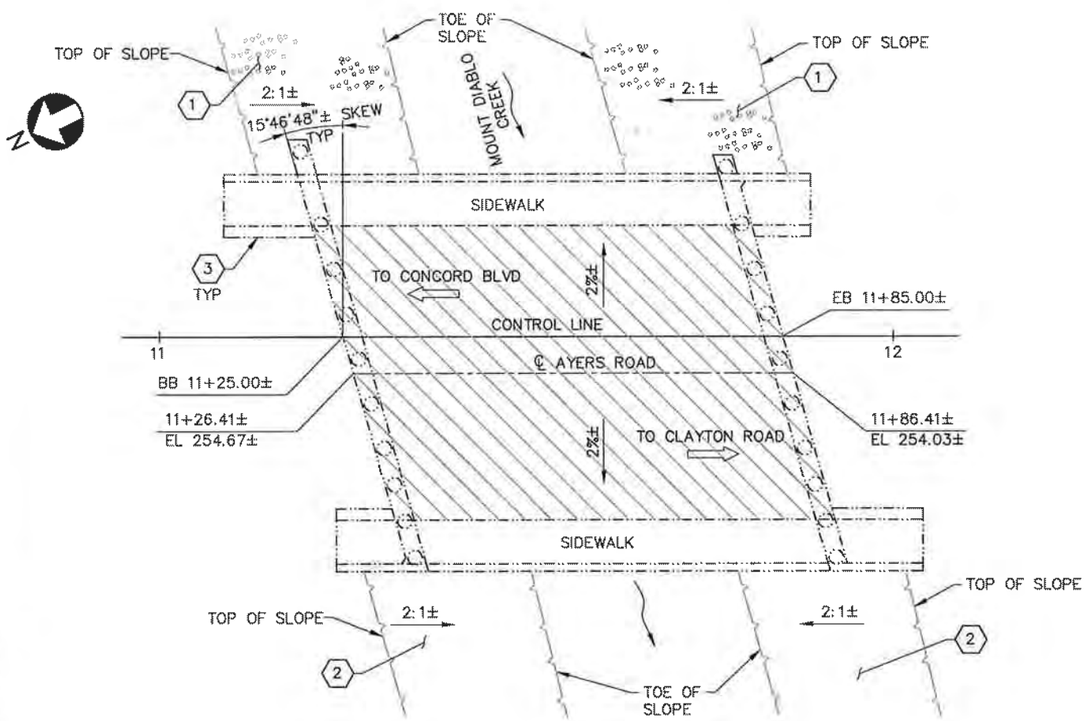
2. WORK BELOW DECK:
- NO WORK IS REQUIRED.



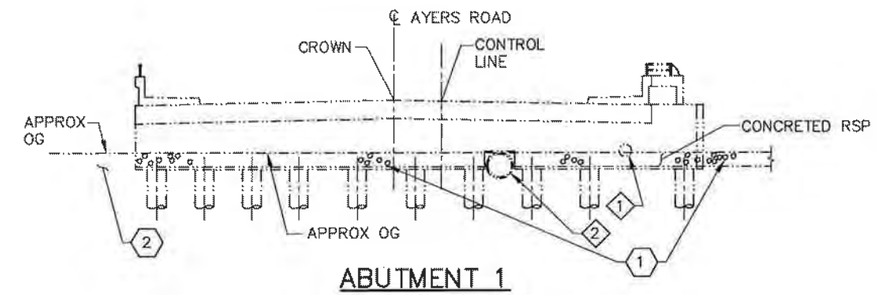
ELEVATION
SCALE: 1" = 10'



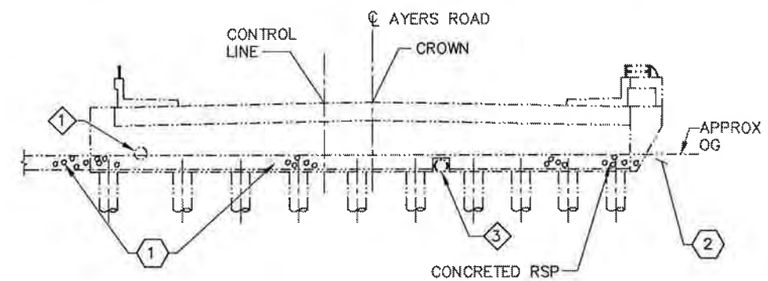
TYPICAL SECTION
SCALE: ⅛" = 1'-0"



PLAN
SCALE: 1" = 10'



ABUTMENT 1
SCALE: ⅛" = 1'-0"



ABUTMENT 2
SCALE: ⅛" = 1'-0"

UTILITY SCHEDULE:

1. 16" ø WATER MAIN
2. 30" ø RCP STORM DRAIN
3. 15" ø RCP STORM DRAIN

REPAIR LEGEND:

METHACRYLATE DECK SEAL

LEGEND:

- DIRECTION OF TRAFFIC
- WATER FLOW DIRECTION
- (1) CONCRETED ROCK SLOPE PROTECTION
- (2) VEGETATED SLOPE
- (3) CONCRETE GUTTER

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$4.41
TOTAL COST OF BRIDGE REPAIR	=	$14,300

NOT FOR CONSTRUCTION

BRIDGE NO: 28C0362

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. LEE		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

AYERS ROAD BRIDGE OVER MOUNT DIABLO CREEK
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City of Concord\CADD\Structure\SHEET\28C0362-ST01.dwg Time:Jun09,2011-01:16pm
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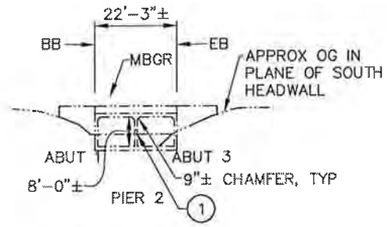
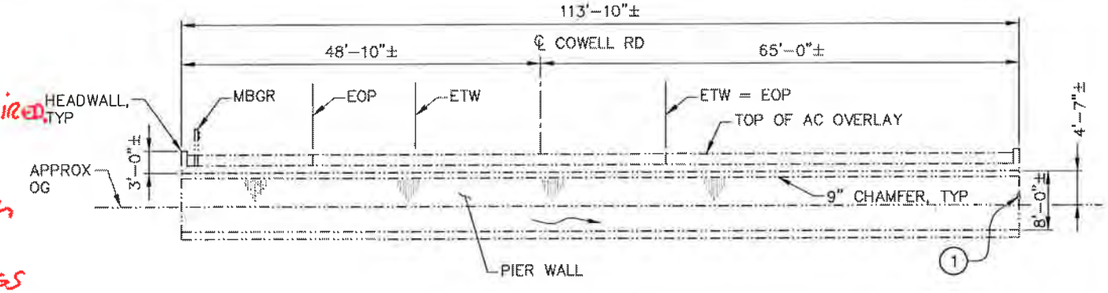


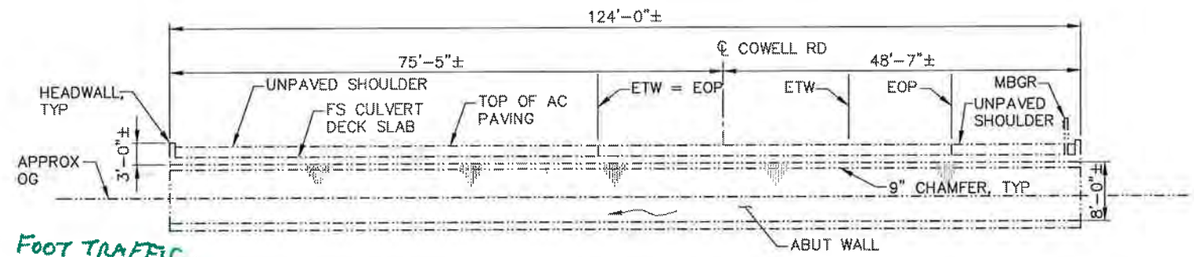
ELEVATION
SCALE: 1" = 20'

1. WORK ON DECK: NONE IS REQUIRED.
2. WORK BELOW DECK:
   - WORK WILL BE BY HAND, USING A LADDER IF REQUIRED.

*: CONTRACTOR WILL GAIN ACCESS THROUGH A DIRT PARKING AREA ADJACENT TO THE STREET, WHICH WILL ALSO SERVE AS THE MOBILIZATION AREA.

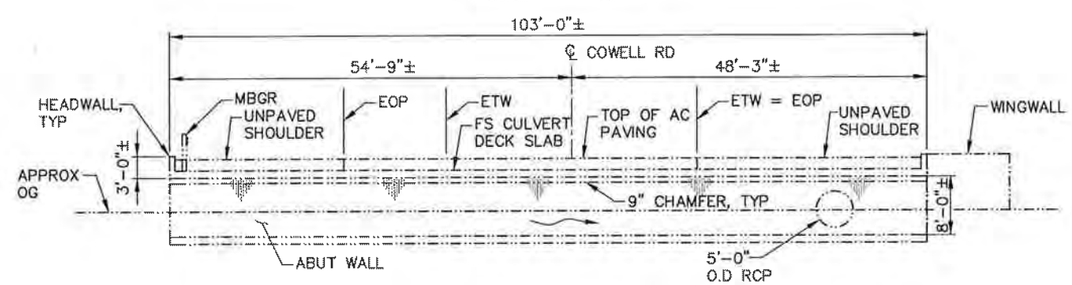


SECTION AT PIER 2
SCALE: 1" = 10'

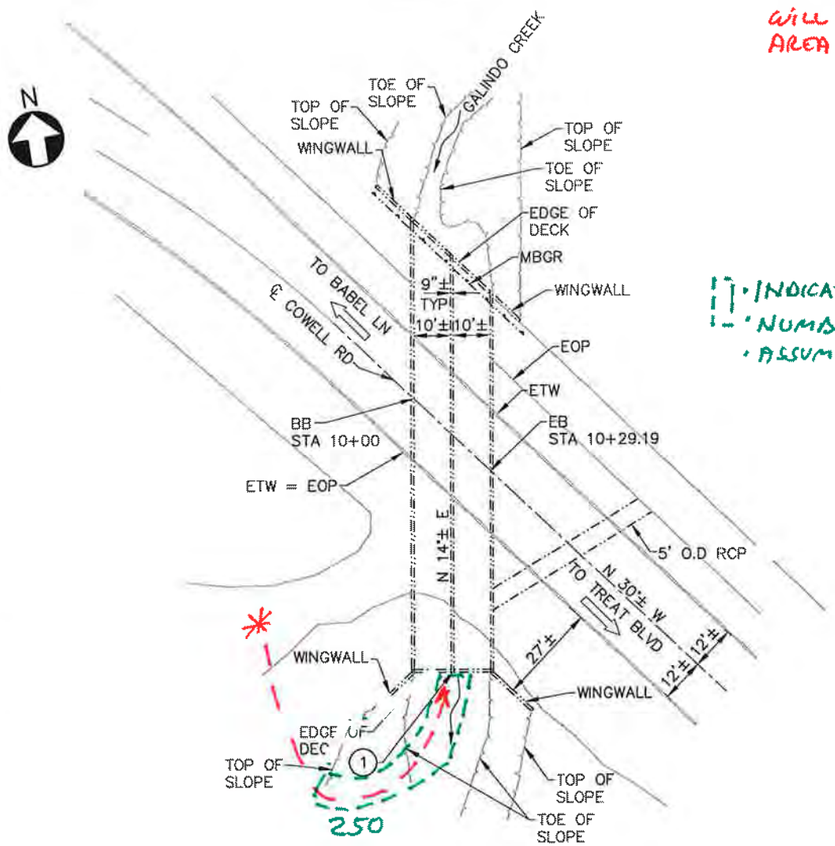


ABUTMENT 1
SCALE: 1" = 10'

- INDICATES AREA OF FOOT TRAFFIC.
- NUMBER NEXT TO AREA = SIZE OF AREA IN FT.^{2}
- ASSUME ACCESS IS FROM ROUTE * SHOWN.



ABUTMENT 3
SCALE: 1" = 10'



PLAN
SCALE: 1" = 20'

NOTE:

THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS.

BRIDGE NO: 28C0427

LEGEND:

WATER FLOW DIRECTION

DIRECTION OF TRAFFIC

REPAIR LEGEND:

(1) REPAIR CONCRETE SPALL

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$2.17
TOTAL COST OF BRIDGE REPAIR	=	$5,500

NOT FOR CONSTRUCTION

CITY REVIEW BY: NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMEL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING (NO WARRANTY AS TO ACCURACY) DATE ACCEPTED ____ PROJECT ENGINEER ____ REVISED BY ____ DATE ____

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN HORIZONTAL: AS SHOWN

ORIGINAL SCALE IN INCHES FOR REDUCED PLAN 0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM Technical Services, Inc. 2020 L Street, Suite 300 Sacramento, CA. 95811

Prepared for City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060

FILE:

DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

COWELL ROAD BRIDGE OVER GALINDO CREEK GENERAL PLAN

ST-XX

SHEET X OF XX

P:\:City of Concord\CADD\Structure\SHEET\28C0427-ST01.dwg Time:Jun06,2011-01:17pm
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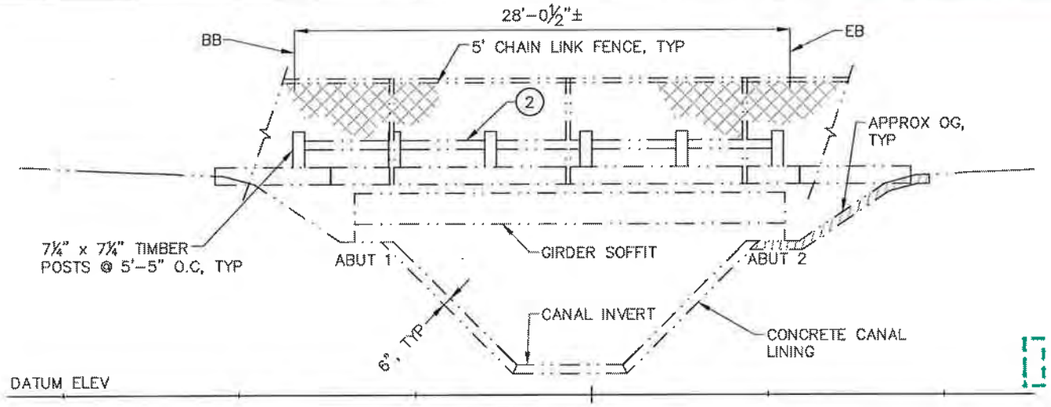
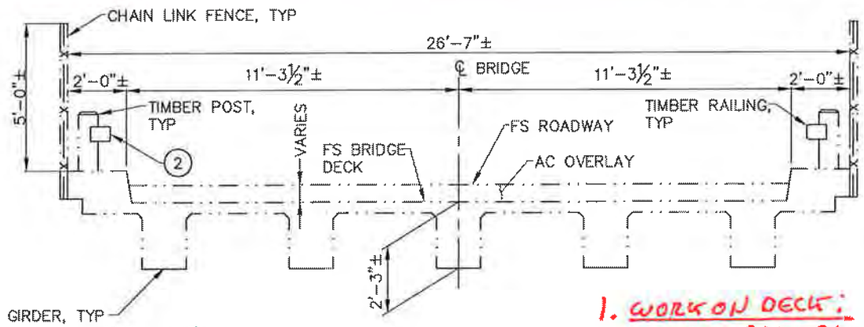


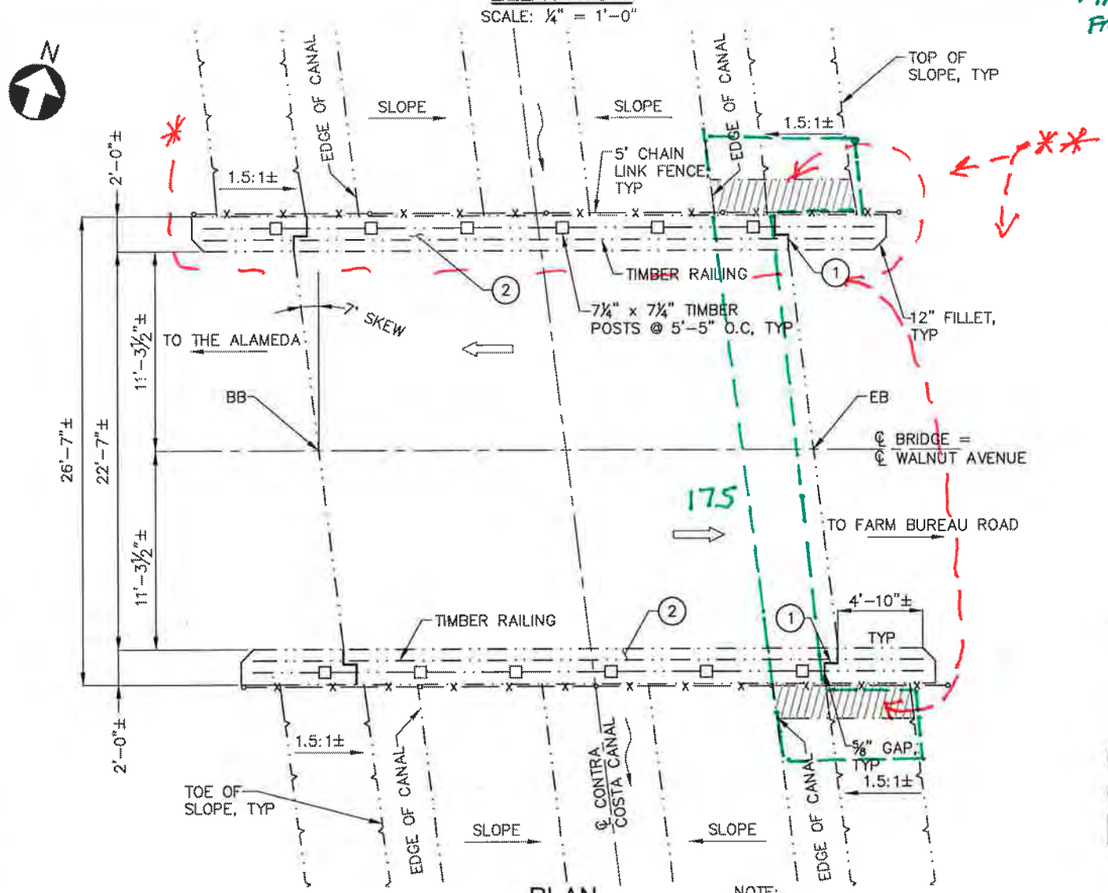
ELEVATION
SCALE: ¼" = 1'-0"



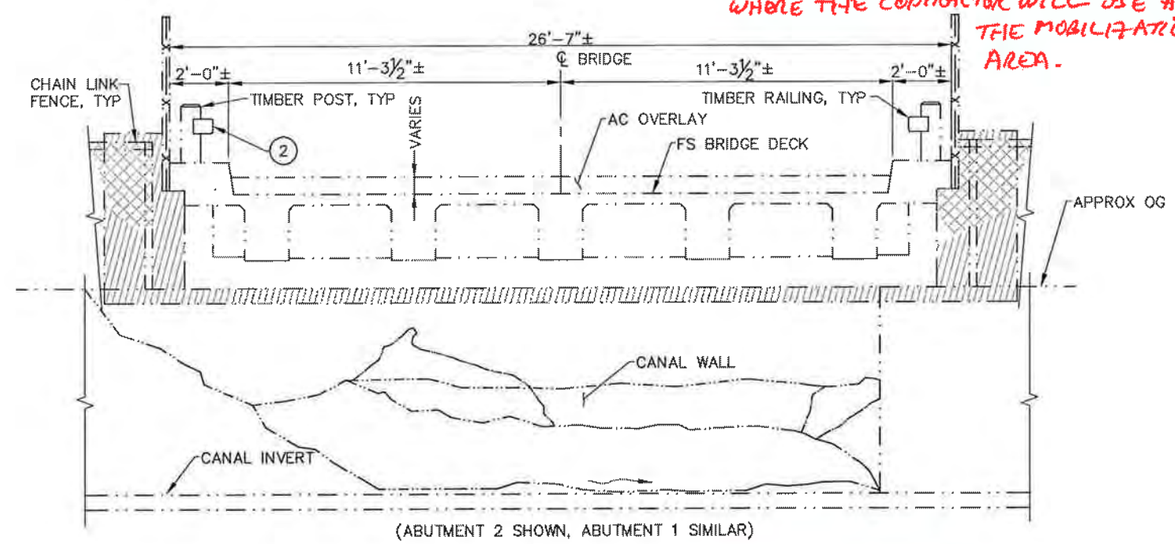
TYPICAL SECTION
SCALE: ⅜" = 1'-0"

- INDICATES AREA OF FOOT TRAFFIC
- NUMBER NEXT TO AREA = SIZE OF AREA IN FT²
- ASSUME ACCESS TO AREA IS FROM ROUTES * OR ** SHOWN.

1. WORK ON DECK:
- TIMBER RAIL PAINTING & JOINT SEAL REPAIR WILL BE ACCOMPLISHED BY HAND CARRYING TOOLS & MATERIALS TO THE BRIDGE FROM THE STREET FORMING THE ADJACENT 'T' INTERSECTION WHERE THE CONTRACTOR WILL USE AS THE MOBILIZATION AREA.



PLAN
SCALE: ¼" = 1'-0"



(ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR)

ABUTMENT 2
SCALE: ⅜" = 1'-0"

NOT FOR CONSTRUCTION

LEGEND:

WATER FLOW DIRECTION

TRAFFIC DIRECTION

REPAIR LEGEND:

1 CLEAN AND SEAL JOINT

2 REMOVE AND REPLACE TIMBER RAILING

FULL SLOPE PAVING

2. WORK BELOW DECK:
- SAME AS FOR 1. ABOVE.
* - IN ADDITION, LANE CLOSURE MAY BE REQUIRED FOR GROUT PUMP & CONCRETE TRUCK USING SIGNS, CONES AND OTHER SAFETY MEASURES.
** - MAY OBTAIN AGREEMENT W/OWNER OF WIDE GRAVEL DRIVE FOR TEMP. USE.

DATE OF ESTIMATE: JUNE 10, 2011

BRIDGE REPAIR

AVG COST OF BRIDGE REPAIR PER SQ FT INCLUDING 10% MOBILIZATION & 20% CONTINGENCY	=	$57.73
TOTAL COST OF BRIDGE REPAIR	=	$43,000

NOTE:

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

THIS PLAN ACCURATE FOR BRIDGE MAINTENANCE ONLY

BRIDGE NO: 28C0436

CITY REVIEW BY:

NAME DATE

REGISTERED PROFESSIONAL ENGINEER DANEA S. GEMMELL No. C54151 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

RECORD DRAWING
(NO WARRANTY AS TO ACCURACY)
DATE ACCEPTED
PROJECT ENGINEER
REVISED BY DATE

REVISIONS NO.	DESCRIPTION	BY	DATE

Concord

SCALE: VERTICAL: AS SHOWN
HORIZONTAL: AS SHOWN
ORIGINAL SCALE IN INCHES FOR REDUCED PLAN
0 1 2 3

		REG. NO.	DATE
PROJECT ENGINEER:	R. FISH		
DESIGNED BY:	T. DUDLEY, J. RENTERIA		
DRAWN BY:	C. TU		
CHECKED BY:			

AECOM
Technical Services, Inc.
2020 L Street, Suite 300
Sacramento, CA. 95811
Prepared for
City of Concord

REGISTERED PROFESSIONAL ENGINEER ROBERT C. FISH No. C39540 Exp. 12/31/2011 CIVIL STATE OF CALIFORNIA

CONTRACT NO: 2060
FILE:
DWG NO:

CITYWIDE BRIDGE REPAIR PROGRAM

WALNUT AVENUE OVER CONTRA COSTA CANAL
GENERAL PLAN

ST-XX

SHEET X OF XX

P:\City Of Concord\CADD\Structure\SHEET\28C0436-ST01.dwg Time:Jun09,2011-01:19pm
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Appendix B Agency Coordination

From:	Ryan_Olah@fws.gov
To:	Mike Trueblood
Cc:	Edward Heming
Subject:	RE: Section 7 Technical Assistance Request for the Concord Bridge Repair Project
Date:	Thursday, August 02, 2012 2:11:32 PM

I think your reasoning looks good-will this be a project that will be coming to us through the Corps?

Ryan

"Mike Trueblood" <Mike.Trueblood@lsa-assoc.com>

"Mike Trueblood" <Mike.Trueblood@lsa-assoc.com> 07/30/2012 02:05 PM	To<Ryan_Olah@fws.gov> cc"Edward Heming" <Edward.Heming@lsa-assoc.com> SubjectRE: Section 7 Technical Assistance Request for the Concord Bridge Repair Project

Mr. Olah:

I am following up to verify you received the technical assistance request and supplemental materials for the City of Concord Bridge Preventative Maintenance Project sent July 5, 2012. Have you been able to review the material yet? I know the material I sent is fairly complicated, so feel free to contact me if you have any questions or require further clarification.

Thanks,

Mike Trueblood
Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

From: Mike Trueblood
Sent: Thursday, July 05, 2012 2:01 PM
To: Ryan_Olah@fws.gov
Cc: Edward Heming
Subject: Section 7 Technical Assistance Request for the Concord Bridge Repair Project

Mr. Olah:

Attached please find a formal USFWS technical assistance request letter and supplemental material for the City of Concord Bridge Preventative Maintenance Project.

Please review the attached letter and supplemental material and provide concurrence and/or suggestions for the proposed Section 7 strategy for this project. Feel free to contact me if you have any questions.

Thanks,

Mike Trueblood
Biologist
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, CA 95677
(916) 630-4600
mike.trueblood@lsa-assoc.com

Appendix C CNPS, USFWS, and CNDDB Lists

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Antioch North (3812117) or Antioch South (3712187) or Benicia (3812212) or Briones Valley (3712282) or Clayton (3712188) or Diablo (3712178) or Honker Bay (3812118) or Las Trampas Ridge (3712271) or Oakland East (3712272) or Tassajara (3712177) or Vine Hill (3812211) or Walnut Creek (3712281))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Endangered	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SSC
Amsinckia grandiflora large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	G1	S1	1B.1
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2?	S2?	1B.2
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Anniella pulchra pulchra silvery legless lizard	ARACC01012	None	None	G3G4T3T4Q	S3	SSC
Anomobryum julaceum slender silver moss	NBMUS80010	None	None	G4G5	S2	4.2
Anthicus antiochensis Antioch Dunes anthicid beetle	IICOL49020	None	None	G1	S1	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Apodemia mormo langei Lange's metalmark butterfly	IILEPH7012	Endangered	None	G5T1	S1	
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Archoplites interruptus Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
Arctostaphylos auriculata Mt. Diablo manzanita	PDERI04040	None	None	G2	S2	1B.3
Arctostaphylos manzanita ssp. laevigata Contra Costa manzanita	PDERI04273	None	None	G5T2	S2	1B.2
Arctostaphylos pallida pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1	1B.1
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex depressa brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
Blepharizonia plumosa big tarplant	PDAST1C011	None	None	G2	S2	1B.1
Branchinecta conservatio Conservancy fairy shrimp	ICBRA03010	Endangered	None	G1	S1	
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S2S3	
Branta hutchinsii leucopareia cackling (=Aleutian Canada) goose	ABNJB05035	Delisted	None	G5T3	S2	
Buteo regalis ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G2	S2	1B.1
Callophrys mossii bayensis San Bruno elfin butterfly	IILEPE2202	Endangered	None	G4T1	S1	
Calochortus pulchellus Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
Campanula exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicuta maculata var. bolanderi Bolander's water-hemlock	PDAPI0M051	None	None	G5T3T4	S2	2B.1
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Cirsium andrewsii Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Clarkia franciscana Presidio clarkia	PDONA050H0	Endangered	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
Coelus gracilis San Joaquin dune beetle	IICOL4A020	None	None	G1	S1	
Cordylanthus nidularius Mt. Diablo bird's-beak	PDSCR0J0F0	None	Rare	G1	S1	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Cryptantha hooveri Hoover's cryptantha	PDBOR0A190	None	None	GH	SH	1A
Danaus plexippus monarch butterfly	IILEPP2010	None	None	G5	S3	
Delphinium californicum ssp. interius Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	AMAFD03061	None	None	G3G4T1	S1	
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Efferia antiochi Antioch efferian robberfly	IIDIP07010	None	None	G1G2	S1S2	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eremophila alpestris actia California horned lark	ABPAT02011	None	None	G5T3Q	S3	WL
Eriastrum ertterae Lime Ridge eriastrum	PDPLM030F0	None	None	G1	S1	1B.1
Eriogonum luteolum var. caninum Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
Eriogonum nudum var. psychicola Antioch Dunes buckwheat	PDPGN0849Q	None	None	G5T1	S1	1B.1
Eriogonum truncatum Mt. Diablo buckwheat	PDPGN085Z0	None	None	G2	S2	1B.1
Erysimum capitatum var. angustatum Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
Eschscholzia rhombipetala diamond-petaled California poppy	PDPAP0A0D0	None	None	G1	S1	1B.1
Eucerceris ruficeps redheaded sphecid wasp	IIHYM18010	None	None	G1G3	S1S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S2S3	SSC
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
Extriplex joaquinana San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S1	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T2	S2	SSC
Grimmia torenii Toren's grimmia	NBMUS32330	None	None	G2	S2	1B.3
Haliaeetus leucocephalus bald eagle	ABNKC10010	Delisted	Endangered	G5	S2	FP
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1	
Hesperolinon breweri Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2	S2	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T2	S2?	1B.1
Hypomesus transpacificus Delta smelt	AFCHB01040	Threatened	Endangered	G1	S1	
Idiostatus middlekauffi Middlekauff's shieldback katydid	IIORT31010	None	None	G1G2	S1	
Isocoma arguta Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
Juglans hindsii Northern California black walnut	PDJUG02040	None	None	G1	S1	1B.1
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lasiurus blossevillii western red bat	AMACC05060	None	None	G5	S3	SSC
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lathyrus jepsonii var. jepsonii Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G3	S2S3	
Lilaeopsis masonii Mason's lilaeopsis	PDAPI19030	None	Rare	G2	S2	1B.1
Limosella australis Delta mudwort	PDSCR10050	None	None	G4G5	S2	2B.1
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Lytta molesta molestan blister beetle	IICOL4C030	None	None	G2	S2	
Madia radiata showy golden madia	PDAST650E0	None	None	G2	S2	1B.1
Malacothamnus hallii Hall's bush-mallow	PDMAL0Q0F0	None	None	G2Q	S2	1B.2
Masticophis lateralis euryxanthus Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
Meconella oregana Oregon meconella	PDPAP0G030	None	None	G2G3	S1	1B.1
Melospiza melodia song sparrow ("Modesto" population)	ABPBXA3010	None	None	G5	S3?	SSC
Melospiza melodia maxillaris Suisun song sparrow	ABPBXA301K	None	None	G5T2	S2	SSC
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2?	SSC
Melospiza melodia samuelis San Pablo song sparrow	ABPBXA301W	None	None	G5T2?	S2?	SSC
Metapogon hurdi Hurd's metapogon robberfly	IIDIP08010	None	None	G1G3	S1S3	
Microcina leei Lee's micro-blind harvestman	ILARA47040	None	None	G1	S1	
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G2G3	S2S3	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Myrmosula pacifica Antioch multilid wasp	IIHYM15010	None	None	GH	SH	
Navarretia gowenii Lime Ridge navarretia	PDPLM0C120	None	None	G1	S1	1B.1
Navarretia nigelliformis ssp. radians shining navarretia	PDPLM0C0J2	None	None	G4T2	S2	1B.2
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
Northern Maritime Chaparral Northern Maritime Chaparral	CTT37C10CA	None	None	G1	S1.2	
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oenothera deltoides ssp. howellii Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
Oncorhynchus mykiss irideus steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Perdita scitula antiochensis Antioch andrenid bee	IIHYM01031	None	None	G1T1	S1	
Perognathus inornatus San Joaquin Pocket Mouse	AMAFD01060	None	None	G2G3	S2S3	
Phacelia phacelioides Mt. Diablo phacelia	PDHYD0C3Q0	None	None	G1	S1	1B.2
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Philanthus nasalis Antioch specid wasp	IIHYM20010	None	None	G1	S1	
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Plagiobothrys diffusus San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	G2	S2	SSC
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Rallus longirostris obsoletus California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S2S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Sanicula maritima adobe sanicle	PDAPI1Z0D0	None	Rare	G2	S2	1B.1
Sanicula saxatilis rock sanicle	PDAPI1Z0H0	None	Rare	G2	S2	1B.2
Scapanus latimanus parvus Alameda Island mole	AMABB02031	None	None	G5T1Q	S1	SSC
Senecio aphanactis chaparral ragwort	PDAST8H060	None	None	G3?	S2	2B.2
Serpentine Bunchgrass Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
Sidalcea keckii Keck's checkerbloom	PDMAL110D0	Endangered	None	G1	S1	1B.1
Sorex ornatus sinuosus Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
Speyeria callippe callippe callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
Sphecodogastra antiochensis Antioch Dunes halcitid bee	IIHYM78010	None	None	G1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Stabilized Interior Dunes Stabilized Interior Dunes	CTT23100CA	None	None	G1	S1.1	
Sternula antillarum browni California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Streptanthus hispidus Mt. Diablo jewelflower	PDBRA2G0M0	None	None	G1	S1	1B.3
Stuckenia filiformis ssp. alpina slender-leaved pondweed	PMPOT03091	None	None	G5T5	S3	2B.2
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thamnophis gigas giant garter snake	ARADB36150	Threatened	Threatened	G2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G1	S1	1B.2
Tropidocarpum capparideum caper-fruited tropidocarpum	PDBRA2R010	None	None	G1	S1	1B.1
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Valley Needlegrass Grassland Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
Viburnum ellipticum oval-leaved viburnum	PDCPR07080	None	None	G5	S3	2B.3
Vulpes macrotis mutica San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 152

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
ANTIOCH SOUTH (464A)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
Critical habitat, vernal pool fairy shrimp (X)
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Amsinckia grandiflora
large-flowered fiddleneck (E)

Lasthenia conjugens
Contra Costa goldfields (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.

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- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
BENICIA (482C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta conservatio
Conservancy fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Syncaris pacifica
California freshwater shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central California coastal steelhead (X) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Lasthenia conjugens
Contra Costa goldfields (E)
Critical habitat, Contra Costa goldfields (X)

Proposed Species

Plants

Cordylanthus mollis ssp. mollis
Critical habitat, soft bird's-beak (PX)

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U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
BRIONES VALLEY (465B)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Plants

Arctostaphylos pallida
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Holocarpha macradenia
Santa Cruz tarplant (T)

Key:

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U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
CLAYTON (464B)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Vulpes macrotis mutica
San Joaquin kit fox (E)

Plants

Amsinckia grandiflora
large-flowered fiddleneck (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

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- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
DIABLO (464C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus

Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Birds

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Vulpes macrotis mutica

San Joaquin kit fox (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
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- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
HONKER BAY (481C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Elaphrus viridis
delta green ground beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is

being proposed for it.

- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
LAS TRAMPAS RIDGE (465D)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Coccyzus americanus occidentalis

Western yellow-billed cuckoo (T)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
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- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
OAKLAND EAST (465C)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Arctostaphylos pallida
pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Chorizanthe robusta var. robusta
robust spineflower (E)

Clarkia franciscana
Presidio clarkia (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.

- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
TASSAJARA (464D)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta longiantenna
longhorn fairy shrimp (E)

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)
Critical habitat, CA tiger salamander, central population (X)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Birds

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Vulpes macrotis mutica

San Joaquin kit fox (E)

Plants

Amsinckia grandiflora

large-flowered fiddleneck (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
- (PX) Proposed Critical Habitat - The species is already listed. Critical habitat is being proposed for it.
- (C) Candidate - Candidate to become a proposed species.
- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

U.S. Fish & Wildlife Service
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Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
VINE HILL (482D)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Elaphrus viridis
delta green ground beetle (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Syncaris pacifica
California freshwater shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
Critical habitat, delta smelt (X)
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)

Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)

Thamnophis gigas
giant garter snake (T)

Birds

Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Mammals

Reithrodontomys raviventris
salt marsh harvest mouse (E)

Plants

Cordylanthus mollis ssp. mollis
soft bird's-beak (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
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- (X) Critical Habitat designated for this species

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Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in
or may be Affected by Projects in the
WALNUT CREEK (465A)
U.S.G.S. 7 1/2 Minute Quad

Report Date: February 25, 2015

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Incisalia mossii bayensis
San Bruno elfin butterfly (E)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)
Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Thamnophis gigas
giant garter snake (T)

Birds
Rallus longirostris obsoletus
California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni
California least tern (E)

Plants
Lasthenia conjugens
Contra Costa goldfields (E)

Oenothera deltoides ssp. howellii
Antioch Dunes evening-primrose (E)

Key:

- (E) Endangered - Listed as being in danger of extinction.
- (T) Threatened - Listed as likely to become endangered within the foreseeable future.
- (P) Proposed - Officially proposed in the Federal Register for listing as endangered or threatened.
- (NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.
- Critical Habitat - Area essential to the conservation of a species.
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- (V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.
- (X) Critical Habitat designated for this species

CNPS California Native Plant So Rare and Endangered Plant Inventory

Plant List

26 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37121H7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	1B.1	S1	G1
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergraen shrub	1B.2	S2	G5T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	1B.2	S2	G2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S34	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	1A	SH	GH
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	1B.1	S1	G1
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	4.2	S3	G3
Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	4.2	S3	G5T3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Madia radiata	showy golden madia	Asteraceae	annual herb	1B.1	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Navarretia heterandra	Tehama navarretia	Polemoniaceae	annual herb	4.3	S4	G4
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	4.2	S3	G4T3

Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	1B.2	S2	G4T2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Search Criteria

Found in Quad 38121A7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	1B.2	S2	G2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	4.2	S4	G4
Cryptantha hooveri	Hoover's cryptantha	Boraginaceae	annual herb	1A	SH	GH
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2B.2	S2	GU
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	Polygonaceae	perennial herb	1B.1	S1	G5T1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Erysimum capitatum var. angustatum	Contra Costa wallflower	Brassicaceae	perennial herb	1B.1	S1	G5T1
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	1B.1	S1	G1
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
			perennial			

Limosella australis	Delta mudwort	Scrophulariaceae	stoloniferous herb	2B.1	S2	G4G5
Madia radiata	showy golden madia	Asteraceae	annual herb	1B.1	S2	G2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	1B.1	S2	G2
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	1B.1	S1	G5T1
Plagiobothrys hystriculus	bearded popcorn-flower	Boraginaceae	annual herb	1B.1	S2	G2
Senecio hydrophiloides	sweet marsh ragwort	Asteraceae	perennial herb	4.2	S2S3	G4G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2

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Plant List

15 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 38122A2

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	3.1	S2	G2Q
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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Plant List

20 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37122H2

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5? T3T4
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	1B.1	S1	G1
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial herb	1B.2	S3	G3
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss	1B.2	S1	G3?
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Holocarpha macradenia	Santa Cruz terplant	Asteraceae	annual herb	1B.1	S1	G1
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	4.2	S3	G3
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	4.2	S3	G3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	1B.1	S1	G2G3
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	3	S3?	G4T3Q
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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CNPS California Native Plant So Rare and Endangered Plant Inventory

Plant List

34 matches found. *Click on scientific name for details*

Search Criteria

Found in Quad 37121H8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5? T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss	4.2	S2	G4G5
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	4.3	S4	G4
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G5T2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S34	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	1B.2	S2	G2
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	4.3	S4	G4
Cordylanthus nidularius	Mt. Diablo bird's-beak	Orobanchaceae	ennual herb (hemiparasitic)	1B.1	S1	G1
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3T3
Eriastrum ertterae	Lime Ridge eriastrum	Polemoniaceae	annual herb	1B.1	S1	G1
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	4.3	S3	G3
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Grimmia torenii	Toren's grimmia	Grimmiaceae	moss	1B.3	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	1B.1	S1	G1

Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	1B.1	S1	G5T1
Phacelia phacelioides	Mt. Diablo phacelia	Boraginaceae	annual herb	1B.2	S1	G1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	1B.2	S2	G2
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	2B.2	S2	G3?
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Streptanthus hispidus	Mt. Diablo jewel-flower	Brassicaceae	annual herb	1B.3	S1	G1
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb	2B.2	S3	G5T5
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2	S1	G1
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Found in Quad 37121G8

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	4.2	S3S4	G5? T3T4
Anomobryum julaceum	slender silver moss	Bryaceae	moss	4.2	S2	G4G5
Arctostaphylos auriculata	Mt. Diablo manzenita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G5T2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	1B.2	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	1B.2	S3	G3T3
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Eriogonum truncatum	Mt. Diablo buckwheat	Polygonaceae	annual herb	1B.1	S2	G2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	1B.2	S2	G2Q
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	1B.2	S2	G4T2
Phacelia phacelioides	Mt. Diablo phacelia	Boraginaceae	annual herb	1B.2	S1	G1

Sanicula saxatilis	rock sanicle	Apiaceae	perennial herb	1B.2	S2	G2
Streptanthus hispidus	Mt. Diablo jewel-flower	Brassicaceae	annual herb	1B.3	S1	G1
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	Stata Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	1B.2	S2	G3T2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Erysimum capitatum var. angustatum	Contra Costa wallflower	Brassicaceae	perennial herb	1B.1	S1	G5T1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	2B.1	S2	G4G5
Oenothera deltoides ssp. howellii	Antioch Dunes evening-primrose	Onagraceae	perennial herb	1B.1	S1	G5T1
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2

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Search Criteria

Found in Quad 37122G1

Scientific Name	Common Name	Family	Lifeform	Rara Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
California macrophylla	round-leaved filaree	Gereniaceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2S3	G2G3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	4.2	S3	G3
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	4.2	S3	G3
Juglans hindsii	Northern California black walnut	Juglandaceae	perennial deciduous tree	1B.1	S1	G1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Bressicaceae	annual herb	1B.2	S2	G2T2
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Search Criteria

Found in Quad 37122G2

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen shrub	1B.1	S1	G1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	1B.2	S2	G2
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.1	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Chorizanthe robusta var. robusta	robust spineflower	Polygonaceae	annual herb	1B.1	S1	G2T1
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	4.3	S3	G5?T3
Clarkia franciscana	Presidio clarkia	Onagraceae	annual herb	1B.1	S1	G1
Dirca occidentalis	western leatherwood	Thymelaeaceaa	perennial deciduous shrub	1B.2	S2S3	G2G3
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	1B.2	S2	G5T2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	1B.1	S2	G2
Horkelia cuneata var. sericea	Kellogg's horkelia	Rosaceae	perennial herb	1B.1	S2?	G4T2
Leptosiphon acicularis	bristly leptosiphon	Polemoniacaaa	annual herb	4.2	S3	G3
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	1B.1	S1	G2G3
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	1B.2	S2S3	G2G3
Plagiobothrys diffusus	San Francisco popcorn-flower	Boraginaceae	annual herb	1B.1	S1	G1Q
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	3.1	S2	G2Q

Sanicula maritima	adobe sanicle	Apiaceae	perennial herb	1B.1	S2	G2
Streptanthus albidus ssp. peramoenus	most beautiful jewel-flower	Brassicaceae	annual herb	1B.2	S2	G2T2
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb	2B.2	S3	G5T5
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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Search Criteria

Found in Quad 37121G7

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	1B.1	S1	G1
Arctostaphylos auriculata	Mt. Diablo manzanita	Ericaceae	perennial evergreen shrub	1B.3	S2	G2
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G5T2
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	1B.2	S2	G2
Monardella antonina ssp. antonina	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	3	S3?	G4T3Q
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Search Criteria

Found in Quad 38122A1

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	4.2	S3	G4T3
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	2B.1	S2	G5T3T4
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	4.3	S4	G5
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	2B.1	S2	G4G5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2

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Search Criteria

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Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	Stata Rank	Global Rank
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2?	G2?
Atriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	1B.1	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	1B.1	S2	G3T2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	1B.2	S2	G5T2
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Navarretia gowenii	Lime Ridge navarretia	Polemoniaceae	annual herb	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	2B.3	S3	G5

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Appendix D Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 2

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 exigua	20%	Yes	OBL
2. Juglans californica hindsii	10%	Yes	FACW
3. Ailanthus altissima	2%	No	FACU
4.			
Total Cover:	32%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Sagittaria sanfordii	5%	No	OBL
2. Mimulus guttatus	1%	No	OBL
3. Cynodon dactylon	70%	Yes	FAC
4. Rumex crispus	1%	No	FACW
5. Brodiaea sp.	5%	No	–
6.			
7.			
8.			
Total Cover:	82%		
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: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 2

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
0-9"	10YR 3/2	90%	5YR 3/4	10%	C	M		Coarse sandy loam
9"								cobble

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ✓	No ___	Depth (inches): 6"
Saturation Present? (includes capillary fringe)	Yes ✓	No ___	Depth (inches): 6"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Edge of line low-flow channel.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 2a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: upland datapoint

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans californica lindsii	20%	Yes	FACU
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Malva parviflora	5%	No	UPL
2. Cynodon dactylon	50%	Yes	FAC
3. Elymus glaucus	5%	No	FACU
4. Erodium sp	30%	Yes	UPL
5. Rhaphanus raphanus	2%	No	UPL
6.			
7.			
8.			
Total Cover: 92%			
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 2a

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"	10YR 3/2	100%	—	—	—	—		Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >12"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >12"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/12/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 3

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Sagittaria sanfordii	2%	No	OBL
2. Elymus glaucus	5%	No	FACU
3. Bromus diandrus	20%	Yes	UPL
4. Rumex crispus	1%	No	FACW
5. Nasturtium officinale	10%	Yes	UPL
6. Typha latifolia	1%	No	OBL
7.			
8.			
Total Cover:	39%		
Woody Vine Stratum			
1. Hedera helix	50%	Yes	UPL
2.			
Total Cover:	50%		

% 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% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 3

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"	10YR3/2	100%	—	—	—	—		silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): –

Water Table Present? Yes ___ No ✓ Depth (inches): 7-12"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 7-12"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 5

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 goodingii	60%	Yes	OBL
2. Salix sp.	5%	No	FACW
3. Populus balsamifera	5%	No	FACW
4. Juglans californica hindsii	10%	No	FAC
Total Cover:	80%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Typha latifolia	30%	Yes	OBL
2. Leymus triticoides	5%	No	FAC
3. Rumex crispus	5%	No	FACW
4. Juncus effusus	10%	Yes	OBL
5.			
6.			
7.			
8.			
Total Cover:	50%		
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: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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:
Riparian corridor

SOIL

Sampling Point: 5

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
0-14"	10YR 2/1	95%	5YR 3/4	5%	C	M	mucky clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): ___
Water Table Present?	Yes ✓	No ___	Depth (inches): 14"
Saturation Present? (includes capillary fringe)	Yes ✓	No ___	Depth (inches): 12"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Pit dug above line channel low-flow area.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/13/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 5a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: Upland data point

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1. Baccharis pilularis	30%	Yes	UPL
2.			
3.			
4.			
5.			
Total Cover: 30%			
Herb Stratum			
1. Bromus diandrus	60%	Yes	UPL
2. Carduus pycnocephalus	10%	No	FACU
3. Lolium multiflorum	10%	No	FAC
4. Silybum marianum	5%	No	UPL
5.			
6.			
7.			
8.			
Total Cover: 85%			
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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 5a

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
0-7"	10YR 3/2	100%	—	—	—	—	cobbly silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: Partial shoulder fill.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >7"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >7"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/14/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 8

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 _____	Is the Sampled Area within a Wetland? Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:			
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:			
Herb Stratum			
1. Typha latifolia	60%	Yes	OBL
2. Polygonum persicaria	5%	No	FACW
3. Ludwigia peploides	10%	No	OBL
4. Rumex crispus	2%	No	FACW
5. Mentha pulegium	2%	No	OBL
6.			
7.			
8.			
Total Cover: 79%			
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 8

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Deeply insised low-flow channel. Inundated. Not able to collect soil. Walnut Creek is perennial in nature so soils considered hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 36-60"

Water Table Present? Yes ✓ No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 4/14/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 8a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Upland data point

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. Elymus glaucus	5%	No	FACU
2. Raphanus raphanus	10%	No	UPL
3. Bromus diandrus	60%	Yes	UPL
4. Avena Sativa	20%	NO	UPL
5. Rumex crispus	10%	NO	FACW
6.			
7.			
8.			
Total Cover: 105%			
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: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 8a

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
0-14"	10YR 2/2	100%	—	—	—	—		Silty loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks: Dark soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ✓ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ✓ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ✓	Depth (inches): —
Water Table Present?	Yes ___	No ✓	Depth (inches): 7 14"
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): 7 14"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: High water floodplain area of walnut creek. Does not support wetlands. Indicators of high water flows in this area

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 9

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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. Paspalum dilatatum	80%	Yes	FACU
2. Ludwigia peploides	10%	No	OBL
3. Cyperus eragrostis	3%	No	FACW
4. Polygonum sp.	5%	No	FACW
5. Rumex crispus	2%	No	FACW
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 9

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"	10YR 2/1							Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): 6"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 9a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: upland datapoint

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. Cynodon dactylon	60%	Yes	FAC
2. Rhaphanus sp.	5%	no	UPL
3. Avena fatua	10%	no	UPL
4. Verbena sp	5%	no	UPL
5. Paspalum dilatatum	20%	Yes	FAC
6.			
7.			
8.			
Total Cover: 100%			
Woody Vine Stratum			
1. Hedera canariensis	40%	Yes	UPL
2.			
Total Cover: 40%			

% 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ 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: 9a

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
0-9"	10YR 2/2	100%	—	—	—	—		Sandy loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): 29"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 29"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 10

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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	70%	Yes	OBL
2. Juncus balticus	20%	Yes	OBL
3. Cyperus eragrostis	10%	No	FACW
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: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 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
0-4"	10YR 3/1	100%	—	-	-	-		loam
4-12"	10Y 2.5/1	100%	—	—	-	—		Gleyed clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): 4"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 4"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 10a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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:

upland data point.

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. Lolium multiflorum	40%	Yes	FAC
2. Avena fatua	40%	Yes	UPL
3. Bromus diandrus	10%	No	UPL
4. Lactuca serriola	5%	No	FAC
5. Medicago sativa	5%	No	UPL
6. Convolvulus arvensis	5%	No	UPL
7.			
8.			
Total Cover: 105%			

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% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species	45	x 3 = 135
FACU species		x 4 =
UPL species	60	x 5 = 300
Column Totals:	105 (A)	435 (B)

Prevalence Index = B/A = 4.14

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: 10a

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. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): >10"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): >10"

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 11

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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. Polypogon monspeliensis	5%	No	FACW
2. Ludwigia peploides	10%	No	OBL
3. Typha latifolia	60%	Yes	OBL
4. Cynodon dactylon	20%	Yes	FAC
5.			
6.			
7.			
8.			
Total Cover: 95%			
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% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 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: 11

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 2/1	100%	—	—	—	—		loam
3-12"	10Y 2.5/1	100%	—	—	—	—		gleyed clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ✓ No ___ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): surface

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: Concord Bridges City/County: Concord / Contra Costa Sampling Date: 7/27/2011

Applicant/Owner: City of Concord State: CA Sampling Point: 11a

Investigator(s): Mike Trueblood Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ NWI classification: _____

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 ✓	Is the Sampled Area within a Wetland? Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: upland datapoint

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. Avena fatua	90%	Yes	UPL
2. Convolvulus arvensis	10%	No	UPL
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: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species		x 4 =
UPL species		x 5 =
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 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: 11a

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"	10YR3/3	100%	—	—	—	—		Clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, 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.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Plowed Soils (C6)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Thin Muck Surface (C7)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): 28"

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): 28"

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

APPENDIX B – ARCHAEOLOGICAL SURVEY REPORT/HISTORIC PROPERTY SURVEY REPORT

[REDACTED TO PROTECT SENSITIVE CULTURAL RESOURCES]

Memorandum

Flex your power!
Be energy efficient!

To: BORIS DEUNERT
Senior Environmental Planner
Office of Local Assistance, District 4

Date: May 14, 2013

File: 04-CC
BPMP 5135 (039)
City of Concord
Bridge Preventative
Maintenance

Attn: Tom Holstein, Associate Environmental Planner

From: MAUREEN ZOGG
Local Assistance Archaeologist
Office of Local Assistance, District 4

Subject: Completion of Section 106 compliance for the City of Concord Bridge Preventative Maintenance project in the City of Concord, Contra Costa County, California.

The Historic Property Survey Report (HPSR) and Archaeological Survey Report (ASR) for the City of Concord Bridge Preventative Maintenance project have been received and approved. The State Historic Preservation Office (SHPO) has concurred with the finding of No Historic Properties Affected.

Enclosed please find one signed copy of each report. The National Historic Preservation Act Section 106 process will be concluded when we receive in our office two (2) CD versions.

If you have any question or comment regarding this review please contact Maureen Zogg at (510) 622-8767, e-mail maureen_zogg@dot.ca.gov.

cc: OLA Files

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P.O. BOX 23660
MAIL STATION 8-A
OAKLAND, CA 94623-0660
PHONE (510) 286-5900
FAX (510) 286-5903
TTY 711
www.dot.ca.gov

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April 11, 2013

Carol Roland-Nawi, Ph.D
State Historic Preservation Officer
Office of Historic Preservation
1725 23rd Street, Suite 100
Sacramento, CA 95816

BPMP 5135 (039)
City of Concord Bridge
Preventive Maintenance

Attention: Susan Stratton

Subject: Notification of No Historic Properties Affected for the City of Concord Bridge Preventive Maintenance Project, Contra Costa County

Dear Ms. Roland-Nawi:

The California Department of Transportation, (Caltrans) as assigned by the Federal Highway Administration (FHWA), is notifying the State Historic Preservation Officer (SHPO) of our finding regarding the proposed improvements on various bridges in the City of Concord. This notification is being submitted in accordance with the January 1, 2004 *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 (Section 106 PA).*

Caltrans is performing this notification as part of its NEPA assignment of federal responsibilities by the Federal Highway Administration (FHWA), effective October 1, 2012 and pursuant to 23 USC 326 and 327.

Enclosed you will find a Historic Property Survey Report (HPSR) and an Archaeological Survey Report (ASR) for the proposed undertaking. Under the Section 106 PA, Caltrans is responsible for ensuring the appropriateness of the Area of Potential Effects (APE) [Stipulation VIII.A] and the adequacy of historic property identification efforts [Stipulation VIII.B]. We are notifying you of our finding at the present time under Stipulation IX.A.2 of the Section 106 PA.

The project proposes to repair 16 bridges within the City of Concord, Contra Costa County, California. A full project scope description and depiction of the APE can be found on page 1 and Attachment 1 of the HPSR.

Consultation and identification efforts for the proposed undertaking (summarized on pages 2 – 4 in the enclosed HPSR) resulted in the identification of one property previously

determined eligible for inclusion in the National Register of Historic Places within the APE as follows:

- Contra Costa Canal, Concord

This letter serves as notification that Caltrans's finding for the undertaking, pursuant to Stipulation IX.A.2 of the Section 106 PA, is No Historic Properties Affected because although historic properties are present within the APE, the undertaking will have no effect on them. The Caltrans Division of Environmental Analysis is being provided with a concurrent copy of this documentation.

If you need any additional information, please do not hesitate to contact Caltrans District 4 Archaeologist Maureen Zogg (phone: (510) 622-8767; e-mail maureen.zogg@dot.ca.gov) or Caltrans District 4 Architectural Historian Douglas Bright (phone: (510) 286-5350; e-mail: Douglas_Bright@dot.ca.gov). Thank you for your assistance with this undertaking.

Sincerely,

Elizabeth Greene

for Elizabeth McKee
Chief, Office of Cultural Resource Studies
California Department of Transportation
District 4

HPSR, ASR Enclosed
c: Todd Jaffke, HRC

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: BORIS DEUNERT
Senior Environmental Planner
Office of Local Assistance, District 4

Date: May 13, 2013

File: 04-CC
BPMP 5135 (039)
City of Concord
Bridge Preventative
Maintenance Program

Attn: Tom Holstein, Associate Environmental Planner

From: MAUREEN ZOGG
Local Assistance Archaeologist
Office of Local Assistance, District 4

Subject: Addendum to the Historic Property Survey Report (HPSR) for the City of Concord Bridge Preventative Maintenance project in the City of Concord, Contra Costa County, California.

The HPSR completed for the City of Concord Bridge Preventative Maintenance project neglected to include bridge #28C0362. The Mount Diablo Creek Bridge, built in 1987, was previously evaluated and found ineligible for National Register of Historic Places (NRHP) listing under Category 5. The work slated to be performed on this bridge is on the deck only, and will entail the application of methacrylate sealant; there is no ground work involved that would raise a concern for impacts to potential archaeological deposits. No further analysis is therefore necessary and the HPSR finding of No Historic Properties Affected remains valid.

Please note that the assessments may change if there are alterations made to the proposed activities or the project boundaries. If you have any questions about this memo please contact Maureen Zogg at (510) 622-8767, e-mail maureen_zogg@dot.ca.gov.

cc: OLA Files

HISTORIC PROPERTY SURVEY REPORT FOR THE CITY OF CONCORD BRIDGE PREVENTATIVE MAINTENANCE PROJECT

CONCORD, CONTRA COSTA COUNTY, CALIFORNIA

CALTRANS DISTRICT 4

BMP 5135 (039)

Prepared for

Mario C. Camorongan, PE, CFM, QSD
Manager, Capital Improvement Projects
Community & Economic Development - Engineering
1435 Gasoline Alley
Concord, California 94520

Prepared by

Nichole Jordan, M.A., RPA # 989208
LSA Associates, Inc.
4200 Rocklin Road, Suite 11B
Rocklin, California 95677

LSA Project #AEM1101

March 20, 2013

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Figure 2: Project Area
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Attachment 2: Archaeological Survey Report

Attachment 3: Native American Heritage Commission Consultation Letters

Attachment 4: Native American Contacts Consultation Letters

Attachment 5: Historical Society Consultation Letters

Attachment 6: Structure Maintenance & Investigations: Historical Significance - Local Agency Bridges (Caltrans 2012: Contra Costa County)

Attachment 7: *Contra Costa Canal (P-07-002695)*: State Office of Historic Preservation finding of eligibility for listing in the National Register of Historic Places

HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Miles	Unit	E-FIS Project Number	Phase

District	*County*	*Funding Source*	*Federal-Aid Proj. No.*	*Location*	*E-FIS Proj. No*	*Phase*
4	CC	BPMP	5135 (039)	City of Concord		

`For Local Assistance projects off the highway system, use headers in italics)

Project Description:

The City of Concord, in cooperation with the California Department of Transportation, proposes the City of Concord Bridge Preventative Maintenance Project (Project) at 16 bridge's in the City of Concord, Contra Costa County, California (Attachment 1: Figures 1 and 2).

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 *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* (January 1, 2004); the Caltrans *Standard Environmental Reference, Environmental Handbook: Volume 2, Cultural Resources, Exhibit 5.1, Archaeological Survey Report (ASR) Format and Content Guide* (2012); and the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716) to address the Section 106 requirements of the National Historic Preservation Act of 1966, as amended, and regulations at 36 CFR §800.

The Area of Potential Effects (APE) is located in Caltrans District 4, at 16 bridge's throughout the City of Concord, Contra Coast County, California. The APE is located across four USGS topographic maps: *Clayton, Calif.*, USGS topographic Township 1 North/Range 1 North, Sections 3, 9 and 10; *Honker Bay, Calif.*, USGS topographic Township 2 North/Range 1 West, Section 20; *Walnut Creek, Calif.*, USGS topographic Township 1 North/Range 1 West, Section's 6 and 7, Township 1 North/Range 2 West, Section 12, Township 2 North/Range 1 West, Section 31, Township 2 North/Range 2 West, Section's 2 and 35; and, *Vine Hill, Calif.*, USGS topographic, Township 2 North/Range 1 West, Section 18. The APE is displayed on the accompanying topographic map (Attachment 1: Figure 2). The project consists of preventative maintenance at 16 bridge locations (bridge No. 28C0034, 28C0091L, 28C0091R, 28C0115, 28C0116, 28C0183, 28C0189L, 28C0189R, 28C0221, 28C0222, 28C0224, 28C0278, 28C0357, 28C0361, 28C0427, and, 28C0436) (Attachment 1: Figures 3a – 3o).

Project repairs vary greatly at each bridge location and include the following: repair of spalled concrete, abutment, pier and slope protection; streambed grading; sealing of bridge decks; replacement of timber abutments, joint seals, and exposed rebar; and constructing AC dike and drainage improvements. These improvements will cause minimal ground disturbance and the Project is unlikely to affect historic properties.

2. AREA OF POTENTIAL EFFECTS

The APE was established in consultation with Maureen Zogg, Professionally Qualified Staff (PQS); Chien Wu, Local Assistance Engineer; and Mario C. Camorongan, City of Concord Project Engineer, on April 17, 2012. The Project's archaeological and architectural APEs are coterminous. The APE at each bridge location encompasses the maximum extent of ground disturbance, including unpaved/ungraveled staging areas and access roads (Attachment 1: Figure 3a – 3o). Repair work to above-ground bridge components will entail minimal ground disturbance. Repair work to below-ground bridge components, such as rock slope protection, will take place at locations previously affected by bridge construction, with the exception of Saint Francis Drive at Galindo Creek Bridge, where soil nails will be embedded 6.25 feet deep. The maximum areal extent of ground disturbance in the entire APE is 227,018 square feet. There will be no permanent right-of-way acquisition.

See Attachment 2: Table 1 for a detailed description of proposed work at each bridge location.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

X Native American Tribes, Groups and Individuals

- On March 16, 2012, LSA sent letters describing the Project with maps depicting the APE to the Native American contacts on the list for Contra Costa County provided by the NAHC, asking for any information or concerns regarding cultural resources within the APE (Attachment 4).

  No responses to the letters were received within three weeks and LSA made follow-up telephone calls. A summary of these calls and additional correspondence is presented below:

  Andrew Galvan, The Ohlone Indian Tribe: On April 3, 2012, LSA left a message with Mr. Galvan asking him to contact LSA with any information or concerns regarding cultural resources within the APE. No response has been received to date.

  Katherine Erolinda Perez: During an April 3, 2012, telephone call Mrs. Perez stated that she would like copies of LSA's final HPSR and ASR. LSA will provide copies of the final HPSR and ASR to Ms. Perez.

  Ramona Garibay, Representative, Trina Marine Ruano Family: On April 3, 2012, LSA left a message with Ms. Garibay asking her to contact LSA with any information or concerns regarding cultural resources within the APE. No response has been received to date.

X Native American Heritage Commission

- On February 21, 2012, LSA sent a letter on describing the Project with maps depicting the APE to the Native American Heritage Commission (NAHC) in Sacramento asking the Commission to review their Sacred Lands File for any Native American cultural resources that might be affected by the Project. Also requested were the names of Native Americans who might have information or concerns about the APE. Debbie Pilas-Treadway, NAHC Environmental Specialist III, in a fax dated March 7, 2012, informed LSA that a records search of the Sacred Lands File did not "indicate the presence of Native American cultural resources in the immediate project area." Ms. Pilas-Treadway also provided a list of Native American contacts (Attachment 3).

X Local Historical Society / Historic Preservation Group

- On February 21, 2012, LSA sent a letter describing the Project with maps depicting the APE to the Concord Historical and Contra Costa Historical Societies (Attachment 5).

  Concord Historical Society: April 10, 2012, LSA spoke with the receptionist who stated she did not have any historical information related to the Project areas.

  Contra Costa County Historical Society: In a written response dated April 20, 2012, The Contra Costa County Historical Society was not able to identify historical resources in the APE. They stated that they do not have the resources needed to search their records at this time. Additionally, they stated that, upon request, the Historical Society would be pleased to search their records and attached a fee schedule for their services.

4. SUMMARY OF IDENTIFICATION EFFORTS

X	National Register of Historic Places	Month & Year: 1979-2002 & supplements
X	California Register of Historical Resources	Year: 1992 & supplemental information to date
X	California Inventory of Historic Resources	Year: 1976
X	California Historical Landmarks	Year: 1995 & supplemental information to date
X	California Points of Historical Interest	Year: 1992 & supplemental information to date
X	State Historic Resources Commission	Year: 1980-present, minutes from quarterly meetings
X	Caltrans Historic Highway Bridge Inventory	Year: 2006 & supplemental information to date

X Archaeological Site Records

- LSA conducted a records search (10-0917, 11-0908, and 11-0963) of the APE and a ¼ mile radius on March 23, 2011, February 20, 2012, and March 5, 2012, respectively, at the Northwest Information Center (NWIC) of the California Historical Resources Information System, California State University, Rohnert Park. The NWIC, an affiliate of the State of California Office of Historic Preservation, is the official state repository of cultural resource records and reports for Contra Costa County.

X Results:

- This study identified one previously identified National Register of Historic Places (NRHP)-eligible built-environment resource within the APE. The Contra Costa Canal (State of California designation P-07-002695) is within the APE at bridge No. 28C0436.

  For a detailed description of records search results at each bridge location see Attachment 2.

5. PROPERTIES IDENTIFIED

X **Bridges listed as Category 5** in the Caltrans Historic Highway Bridge Inventory are present within the APE. Appropriate pages from the Caltrans Historic Bridge Inventory are attached (Attachment 6)

X Properties **previously listed or determined eligible** for inclusion in the National Register of Historic Places are present within the Project APE.

Contra Costa Canal (P-07-2695) determined eligible for listing in the National Register of Historic Places, March 2005 by Steve Mikesell, for Wayne M. Donaldson (Attachment 7).

The following property was previously determined *eligible* for inclusion in the NRHP. This property is also a historical resource for the purposes of CEQA. Refer to Attachment 1: Figure 3k, for resource location.

Name	Address/Location	Community
Contra Costa Canal	Walnut Avenue passes over the Contra Costa Canal	City of Concord

6. LIST OF ATTACHED DOCUMENTATION

X Attachment 1: Project Location and Vicinity, Project Area, Area of Potential Effects

X Attachment 2: Archaeological Survey Report

X Attachment 3: Native American Heritage Commission Consultation Letters

X Attachment 4: Native American Contacts Consultation Letters

X Attachment 5: Historical Society Consultation Letters

X Attachment 6: Structure Maintenance & Investigations: Historical Significance - Local Agency Bridges (Contra Costa County: 2012)

X Attachment 7: *Contra Costa Canal (P-07-002695)*: State Office of Historic Preservation finding of eligibility for listing in the National Register of Historic Places

7. HPSR to File

X Not applicable.

8. HPSR to SHPO

X Properties **previously determined eligible** for inclusion in the National Register of Historic Places, in consultation with the SHPO, or formally determined eligible for inclusion in the National Register of Historic Places by the Keeper of the National Register are present within the Project APE. Copy of SHPO/Keeper correspondence is attached.

X As assigned by FHWA, Caltrans has determined a Finding of **No Historic Properties Affected**, according to Section 106 PA Stipulation IX.A and 36 CFR 800.4(d)(1), is appropriate for this undertaking, and is hereby notifying the SHPO of this finding.

The Contra Costa Canal (P-07-2695) was determined eligible for listing in the NRHP by the State

Office of Historic Preservation Officer in March 2005 (Attachment 7). The Canal is eligible at the state level under Criterion A for its association with the construction of the Central Valley Project, and at the local level under Criterion A for its association with the economic development of eastern Contra Costa County. Its period of significance is 1937-1951. Bridge no. 28C0436, Walnut Avenue over the Contra Costa Canal (Attachment 1: Figure 3k), is a Category 5 bridge (i.e., "not eligible for listing in the NRHP") and its construction post-dates the period of significance of the Canal by four years.

Planned work in this APE location involves stabilizing the canal and protecting the abutment of bridge no. 28C0436. Earthen voids behind the canal lining will be backfilled. A joint will be installed above the canal lining; this area above the canal lining will be capped with concrete slope paving which will divert storm water runoff away from the bridge abutment. This paving will not increase or alter the flow of surface runoff from the surrounding area into the canal. No work will be conducted within the canal.

The character-defining feature of the Canal that contributes to its significance within the APE is the concrete-lined channel segment. No work will be conducted within the concrete-lined channel segment. Consequently, the undertaking will not alter the characteristics that qualify the Canal for the National Register. Therefore, a determination of No Historic Properties Affected is appropriate.

9. Findings for State-Owned Properties

X Not applicable; project does not involve Caltrans right-of-way or Caltrans-owned property.

10. CEQA Impact Findings

X Not applicable; Caltrans is not the lead agency under CEQA.

11. HPSR Preparation and Department Approval

Prepared by:

	Nichole Jordan	3/20/2013
Consultant/discipline:	*Nichole Jordan, Principal Investigator Prehistoric and Historical Archaeology*	Date
Affiliation	*LSA Associates, Inc.*	

Reviewed for approval by:

	Maureen Zogg	4-4-13
District 4 Caltrans PQS discipline/level:	*Maureen Zogg, PQS Prehistoric Archaeology, Caltrans Office of Local Assistance, District 4*	Date
Approved by:	B. Deunert	4/8/13
District 4 EBC:	*Boris Deunert, Ph.D., Environmental Branch Chief, District 4*	Date

APPENDIX C - INITIAL SITE ASSESSMENT

CITY OF CONCORD
1455 Gasoline Alley
Concord, California 94520-4805
FAX: (925) 798-9692

Comm. and Econ. Dev. Dept - Engineering Services

Telephone: (925) 671-3361

Concord

CITY COUNCIL
Daniel C. Helix, Mayor
Timothy S. Grayson, Vice Mayor
Edi E. Birsan
Laura M. Hoffmeister
Ronald E. Leone

Thomas J. Wemling, City Treasurer

Valerie Barone, Interim City Manager

January 18, 2013

Tom Holstein
Associate Environmental Planner
California Office of Local Assistance – District 4
111 Grand Avenue
Oakland, CA 94623

SUBJECT: Initial Site Assessment (ISA) Checklist, ISA Determination Memo, and Attachments - City of Concord, Citywide Bridge Repair Program Federal Project No. BPMP-5135(039) City Project No. 2060

Dear Tom:

Attached is the Initial Site Assessment checklist, ISA determination Memo, including attachments for the subject project prepared by AECOM dated January 7, 2013.

Sincerely,

Mario C. Camorongan, PE, CFM, QSD
Capital Improvements Project Manager

Cc: Bob Fish, PE, SE - AECOM

Initial Site Assessment (ISA) Checklist

Project Information

District 4 County CC Route Var Post Mile Various EA 5135 (039)

Description City of Concord Bridge Preventative Maintenance Program (BPMP) project for seventeen (17) bridges

Is the project on the HW Study Minimal-Risk Projects List (HW1)? No

Project Manager Mario Camorongan, PE (City) phone # (925) 671-3021

Project Engineer Robert Fish, PE, SE (AECOM) phone # (916) 414-1570

Project Screening

Attach the project location map to this checklist to show location of all known and/or potential HW sites identified.

1. Project Features: New R/W? No Excavation? *yes Railroad Involvement? No

   Structure demolition/modification? *yes Subsurface utility relocation? No
   * see section 6, "Other Comments"

2. Project Setting Various City bridges carrying main roads and city streets over creeks.

   Rural or Urban Urban

   Current land uses mixed - includes residential and commercial

   Adjacent land uses mixed - includes residential and commercial
   (industrial, light industry, commercial, agricultural, residential, etc.)

3. Check federal, State, and local environmental and health regulatory agency records as necessary, to see if any known hazardous waste site is in or near the project area. If a known site is identified, show its location on the attached map and attach additional sheets, as needed, to provide pertinent information for the proposed project.

4. Conduct Field Inspection. Date 4-26-2011 Use the attached map to locate potential or known HW sites.

   STORAGE STRUCTURES / PIPELINES:

   Underground tanks _____ Surface tanks _____

   Sumps _____ Ponds _____

   Drums _____ Basins _____

   Transformers _____ Landfill _____

   Other None were observed.

Initial Site Assessment (ISA) Checklist

(continued)

CONTAMINATION: (spills, leaks, illegal dumping, etc.)

Surface staining _____ Oil sheen _____

Odors _____ Vegetation damage _____

Other None were observed.

HAZARDOUS MATERIALS: (asbestos, lead, etc.)

Buildings _____ Spray-on fireproofing _____

Pipe wrap _____ Friable tile _____

Acoustical plaster _____ Serpentine _____

Paint _____ Other None were observed.

5. Additional record search, as necessary, of subsequent land uses that could have resulted in a hazardous waste site. Use the attached map to show the location of potential hazardous waste sites.

6. Other comments and/or observations: _____

From section 1, "Project Features":
Excavation - of the 17 bridges, only one requires excavation. It is a minor amount to establish an embedded slope protection toe in the stream and is not near a hazardous site.
Demolition - only minor amounts of "demolition" are required at some bridges consisting of removing small areas of spalled concrete as necessary to provide a solid area for patching.

ISA Determination

Does the project have potential hazardous waste involvement? No If there is known or potential hazardous waste involvement, is additional ISA work needed before task orders can be prepared for the Investigation? _____ If "YES," explain; then give an estimate of additional time required: _____

Please see attached memo and records search in support of ISA Determination.

A brief memo should be prepared to transmit the ISA conclusions to the Project Manager and Project Engineer.

ISA Conducted by Robert Fish, PE, SE (AECOM) **Date** 12-15-2012

AECOM

AECOM
2020 L street, suite 300
Sacramento, CA 95811

[Phone] (916) 414-1570

Attachment A

Memorandum

To	Tom Holstein, Caltrans Environmental	Page 1
CC	Mario Camorongan, PE, City of Concord Manager	
Subject	ISA Determination	
From	Robert Fish, PE, SE	
Date	January 07, 2013	

Based on our research of potential hazardous sites near the 17 subject bridges using GeoTracker, our on-sight observations, and the maintenance work to be performed as shown on our preliminary plans, we believe that an ISA is not required. As shown on the attached GeoTracker data pages (Attachment B), only 6 bridges have potential hazardous sites within 1,000 feet of the bridge. For each of these bridges we have inserted a list of the maintenance work to be done, followed by our conclusion that the work has no potential of disturbing the nearby sites.

If, during the course of Construction, Hazardous materials, including lead and asbestos, are identified at locations of work, the Contractor will be required to immediately notify the City of Concord Engineer per Caltrans Standard Specifications, 2010, Section 14-11.02A, "Unanticipated Discovery of Asbestos and Hazardous Substances".

Sincerely yours,

Robert C Fish

Robert Fish, PE, SE
bob.fish@aecom.com

Attachment B

Project: City of Concord BPMP
Federal Number: BPMP 5135 (039)

This project contains 17 bridges. The following pages are a summary of the search for potential hazardous sites near each bridge as found in the GeoTracker system.

Following each bridge number are:

- Internet site location of data
- Findings of nearby sites
  - Listed as "No records found within 1,000 ft," or
  - Description of records found
- For bridges were sites were found:
  - Description of maintenance work to be performed at each bridge.
  - Conclusion of potential impact/disturbance to listed sites by work to be performed.

1. Bridge 28C0034

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-121.99836730957031&y=38.00972305430899&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=3000&searchaddr=Kinne Boulevard, Concord, CA

Findings:
11 records within 2500 feet
Concord Naval Weapons Station – 3 open sites (1 pending site assessment and 2 remediation) and 8 closed sites.

Maintenance work to be done:

1. Remove slope paving remnant and replace with full slope paving. (287 sqft)
2. Repair all spalls and incipient spalls on columns, piers and deck soffit. (21 cf)
3. Epoxy inject all cracks in piers and bridge deck. (297 lf)
4. Replace barrier railing. (2,128 lf)
5. Construct polymer concrete deck overlay. (27,842 sqft)

DURATION = 40 WD's

Conclusion:
No work shall be done within or near the above sites.

Project: City of Concord BPMP

2. **Bridge 28C0091L**
3. **and 28C0091R**

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.05111026763916&y=37.98043491604981&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1325 Concord Avenue, Concord, CA

Findings:
3 records within 1000 feet
1200 Concord Avenue – Closed LUST site
2550 Stanwell Drive – Other cleanup site - Open but Inactive
51 John Glenn Drive – Open LUST site – Site Assessment Pending

Maintenance work to be done:

1. Rehabilitate RSP at pier 4, the footing of which has been exposed. (292 cy)
2. Rehabilitate the retaining wall and bridge railing which has settled 7 inches on RH side of abutment 1.
3. Repair concrete spalls and incipient spalls in beam seats in the pier walls and abutments. (67cf)
4. Repair portions of PC/PS I-girders that exhibit spalling and incipient spalling possibly related to fire damage. Remove unsound concrete and replace to original dimensions of girder cross sections. (60 lf)
5. Clean and replace bridge deck joint seals. (137 lf)
6. Treat bridge deck with methacrylate sealant. (14,146 sqft)
7. Remove and reconstruct portions of sidewalk approaches. (4 cy)

DURATION = 32 WD's)

Conclusion:
Significant work will be done at ground level, but only to deposit scour protection (rocks). No work shall be done within or near the above site.

4. **Bridge 28C0115**

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-121.96742534637451&y=37.94632960839509&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=4500 Ygnacio Valley Road, Concord, CA

Findings:
1 record within 1000 feet
1024 Alberta Way – Closed LUST site

Maintenance work to be done:

1 Repair AC dike and construct overside drain to reroute roadway surface drainage (1 ton)
2. Repair concreted RSP on east side of upstream end of culvert. (5 cy)
3. Place RSP at both upstream and downstream ends of culvert, on west side of creek. (88 cy)
4. Core through downstream retaining walls and place tiebacks to limit displacements caused by tree roots. (3 ea)
5. Repair spalled surface areas. (1 cf)
DURATION = 16 WD's

Conclusion:

Some work will be done at ground level, primarily to repair scour protection (rocks). No work shall be done within or near the above site.

5. **Bridge 28C0116**

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-121.99965476989746&y=37.96125262956143&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1300 Cape Cod Way, Concord, CA

<u>No records found within 1000 feet</u>

6. **Bridge 28C0183**

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.05484390258789&y=37.96680146043496&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1238 Willow Pass Road, Concord, CA

Findings:
3 records within 1000 feet
1240 Willow Pass Road – LUST Closed
1231 Diamond Way – LUST Closed
1220 Diamond Way – LUST Closed

Maintenance work to be done:

1. Rehabilitate RSP to protect piers 3 and 4, and to control erosion from storm runoff from Iron Horse Regional Trail. (2,706 cy)
2. Repair concrete spalls on piers and girders. (24 cf)
3. Clean and replace joint seals. (466 lf)

4. Rehabilitate longitudinal joint between abutment 1 and pier 4. (15 lf)
5. Treat bridge deck with methacrylate sealant. (25,912 sqft)
6. Repair metal bridge railing. (48 lb)
7. Remove and reconstruct portions of sidewalk approaches. (5 cy)

DURATION = 34 WD's

Conclusion:

Significant work will be done at ground level, but only to deposit scour protection (rocks). No work shall be done within or near the above sites.

7. Bridge 28C0189L
8. and 28C0189R

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.05355644226074&y=37.969338895803894&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1942 Diamond Boulevard, Concord, CA

Findings:
1 record within 1000 feet
1240 Willow Pass Road – LUST Closed

Maintenance work to be done:

1. Seal utility openings at abutments. (8 cf)
2. Repair concrete spalls on pier walls and girders. (7 cf)
3. Clean and replace joint seals. (288 lf)
4. Treat bridge deck with methacrylate sealant. (7,822 sqft)
5. Repair metal bridge railing.
6. Remove and reconstruct portions of sidewalk approaches. (4 cy)

DURATION = 11 WD's

Conclusion:

No work shall be done within or near the above sites.

9. Bridge 28C0221

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.0341903&y=37.9427991&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1875 Risdon Road, Concord, CA

<u>No records found within 1000 feet</u>

Project: City of Concord BPMP

10. Bridge 28C0222

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.01385974884033&y=37.961658655794345&zl=16&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1178 St. Francis Drive, Concord, CA

No records found within 1000 feet

11. Bridge 28C0224

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.03832149505615&y=37.94490821017502&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=true&searchdist=1000&searchaddr=1800 Whitman Road, Concord, CA

No records found within 1000 feet

12. Bridge 28C0278

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.03012466430664&y=37.99585830339661&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=true&dtsc_cleanup=true&dtsc_permit=true&showdist=true&searchdist=1000&searchaddr=3300 Claudia Drive, Concord, CA

Findings:

2 records within 1000 feet
3399 Port Chicago Highway – Closed LUST site
2484 Olivia Road – Active permitted UST

Maintenance work to be done:

1. Remove and replace unsound concrete on the soffit and pier wall. (55 cf)
2. Remove and replace unsound concrete around utility opening in the northwest wing wall.
3. Replace portions of sidewalks that have been damaged by settlement. (3 cy)

DURATION = 13 WD's

Conclusion:

No work shall be done within or near the above sites.

Project: City of Concord BPMP

13. Bridge 28C0357

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.0232847&y=37.9556842&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=false&dtsc_cleanup=false&dtsc_permit=false&showdist=false&searchdist=1000&searchaddr=San Miguel Road, Concord, CA

No records found within 1000 feet

14. Bridge 28C0361

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.0168159&y=37.9486955&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=true&dtsc_cleanup=true&dtsc_permit=true&showdist=true&searchdist=1000&searchaddr=904 San Miguel Road, Concord, CA

No records found within 1000 feet

15. Bridge 28C0362

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-121.9670820236206&y=37.959425483733&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=true&dtsc_cleanup=true&dtsc_permit=true&showdist=true&searchdist=1000&searchaddr=1600 Ayers Road, Concord, CA

No records found within 1000 feet

16. Bridge 28C0427

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.03012466430664&y=37.99585830339661&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=true&dtsc_cleanup=true&dtsc_permit=true&showdist=true&searchdist=1000&searchaddr=3300 Claudia Drive, Concord, CA

No records found within 1000 feet

17. Bridge 28C0436

http://geotracker.swrcb.ca.gov/map/default.asp?global_id=&senate=&assembly=&x=-122.01626300811767&y=37.97407520718709&zl=15&ms=640,480&mt=m&geotracker_luft=true&geotracker_slic=true&geotracker_landfill=true&geotracker_dod=true&geotracker_ust=true&dtsc_cleanup=true&dtsc_permit=true&showdist=true&searchdist=1000&searchaddr=3250 Walnut Avenue, Concord, CA

No records found within 1000 feet