

INFORMATION HANDOUT

WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
WATER QUALITY CERTIFICATION NO. 34312WQ02

PERMITS

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME INCIDENTAL TAKE PERMIT
NOTIFICATION NO. 2081-2011-078-03

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME 1602 PERMIT
NOTIFICATION NO. 1600-2011-0298-R3

UNITED STATES ARMY CORPS OF ENGINEERS 404 PERMIT
FILE NO. 2009-00049S

AGREEMENTS

UNITED STATES FISH AND WILDLIFE SERVICE (Biological Opinion)
FILE NO.: 81420-2008-F-1995

UNITED STATES FISH AND WILDLIFE SERVICE (Amendment to the Biological Opinion)
FILE NO.: 81420-2008-F-1995-ROO1-3

MATERIALS INFORMATION

PORTIONS OF PRELIMINARY SITE INVESTIGATION REPORT

FOUNDATION REPORT FOR THE PROPOSED SOIL NAIL RETAINING WALLS NO. 1
AND NO. 2

FOUNDATION REPORT FOR THE PROPOSED RETAINING WALL NO. 3

FOUNDATION REPORT FOR THE PROPOSED RETAINING WALL NO. 4-GABION
GRAVITY RETAINING WALL

FOUNDATION REPORT, EXISTING REINFORCED BOX CULVERT (RCB) EXTENSION

ROUTE: 04-152-SCI-PM 16.2/R16.5, R18.5/R19.5



Matthew Rodriguez
Secretary for
Environmental Protection

California Regional Water Quality Control Board Central Coast Region

895 Aerovista Place, Suite 101, San Luis Obispo, California 93401-7906
(805) 549-3147 • FAX (805) 543-0397
<http://www.waterboards.ca.gov/centralcoast>



Edmund G. Brown Jr.
Governor

May 1, 2012

Fariba Zohoury
California Department of Transportation (Caltrans)
111 Grand Avenue
PO Box 23660
Oakland, CA 94612-3717
email: fariba_zohoury@dot.ca.gov

VIA ELECTRONIC MAIL

Dear Ms. Zohoury:

WATER QUALITY CERTIFICATION NUMBER 34312WQ02 FOR STATE ROUTE 152 AT LOVER'S LANE SAFETY IMPROVEMENT PROJECT, SANTA CLARA COUNTY

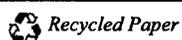
Thank you for the opportunity to review your February 9, 2012 application for water quality certification of the State Route 152 at Lover's Lane Safety Improvement Project (Project). The application was completed on March 15, 2012. The project, if implemented as described in your application and with the additional mitigation requirements and conditions required by this Certification, appears to be protective of beneficial uses of State waters. We are issuing the enclosed Standard Letter of Certification.

At this time, we do not anticipate issuing additional requirements based on your application. Should new information come to our attention that indicates a water quality problem, we may require additional monitoring and reporting, issue Waste Discharge Requirements, or take other action.

Your Section 401 Water Quality Certification application and California Environmental Quality Act (CEQA) documents indicate that project activities may affect beneficial uses and water quality. The Central Coast Regional Water Quality Control Board (Central Coast Water Board) issues this certification to protect water quality and associated beneficial uses from project activities. We need reports to determine compliance with this certification. All technical and monitoring reports requested in this certification, or anytime after, are required per Section 13267 of the California Water Code.

Your failure to submit reports required by this certification, or your failure to submit a report of technical quality acceptable to the Executive Officer, may subject you to enforcement action per Section 13268 of the California Water Code. The Central Coast Water Board will base enforcement actions on the date of certification. Any person affected by this Central Coast Water Board action may petition the State Water Resources Control Board (State Board) to review this action in accordance with California Water Code Section 13320; and Title 23, California Code of Regulations, Sections 2050 and 3867-3869. The State Board, Office of Chief Counsel, PO Box 100, Sacramento, CA 95812, must receive the petition within 30 days of the date of this certification. We will provide upon request copies of the law and regulations applicable to filing petitions.

California Environmental Protection Agency



If you have questions please contact Phil Hammer at phammer@waterboards.ca.gov or (805) 549-3882. Please mention the above certification number in all future correspondence pertaining to this project.

Sincerely,



Digitally signed by Phil Hammer
Date: 2012.05.01 14:32:45 -07'00'

for
Roger W. Briggs
Executive Officer

Enclosure: Action on Request for CWA Section 401 Water Quality Certification

cc: With enclosures

Cyrus Vafai
Caltrans
email: cyrus_vafai@dot.ca.gov

Jayshree Chauhan
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Scott Wilson
California Department of Fish and Game
Lake and Streambed Alteration
email: swilson@dfg.ca.gov

401 Program Manager
State Water Resources Control Board
Division of Water Quality
Stateboard401@waterboards.ca.gov

R9-WTR8-Mailbox@epa.gov

S:\Shared\Section 401 Certification\Certifications\Santa Clara\2012\R3_SR152LoversLaneSftyImprv_34312WQ02_final.doc

Action on Request for
Clean Water Act Section 401 Water Quality Certification
for Discharge of Dredged and/or Fill Materials

PROJECT: State Route 152 at Lover's Lane Safety Improvement Project

APPLICANT: Fariba Zohoury
California Department of Transportation (Caltrans)
111 Grand Avenue
PO Box 23660
Oakland, CA 94612-3717

ACTION:

1. Order for Standard Certification
2. Order for Technically-conditioned Certification
3. Order for Denial of Certification

STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment per section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed per 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license was being sought.
3. The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.
4. This certification is subject to the acquisition of all local, regional, state, and federal permits and approvals as required by law. Failure to meet any conditions contained herein or any conditions contained in any other permit or approval issued by the State of California or any subdivision thereof may result in the revocation of this Certification and civil or criminal liability.
5. In the event of a violation or threatened violation of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of Section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

6. In response to a suspected violation of any condition of this certification, the Central Coast Water Board may require the holder of any permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the Central Coast Water Board deems appropriate, provided that the burden, including costs, of the reports shall have a reasonable relationship to the need for the reports and the benefits obtained from the reports.
7. The total fee for this project is \$1780. **The remaining fee payable to the Central Coast Water Board is \$836.**

CENTRAL COAST WATER BOARD CONTACT PERSON:

Phil Hammer
(805) 549-3882
phammer@waterboards.ca.gov

Please refer to the above certification number when corresponding with the Central Coast Water Board concerning this project.

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from the State Route 152 at Lover's Lane Safety Improvement Project shall comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Central Coast Water Board's Water Quality Control Plan (Basin Plan).



Digitally signed by Phil Hammer
Date: 2012.05.01 14:33:11 -07'00'

for _____
Roger W. Briggs
Executive Officer
Central Coast Water Board

May 1, 2012
Date

PROJECT INFORMATION AND CONDITIONS

Application Date	Received: February 9, 2012 Completed: March 15, 2012
Applicant	Fariba Zohoury fariba_zohoury@dot.ca.gov (510) 286-7239 California Department of Transportation (Caltrans) 111 Grand Avenue PO Box 23660 Oakland, CA 94612-3717
Applicant Representatives	Cyrus Vafai cyrus_vafai@dot.ca.gov (510) 286-5585 Office of Water Quality, 14 th floor, MS 8F 111 Grand Avenue PO Box 23660 Oakland, CA 94612-3717
Project Name	State Route 152 at Lover's Lane Safety Improvement Project
Application Number	34312WQ02
Type of Project	Roadway improvements
Project Location	Gilroy Latitude: 36° 58' 58.80" N Longitude: 121° 27' 57.96" W Latitude: 36° 58' 53.60" N Longitude: 121° 26' 6.72" W
County	Santa Clara
Receiving Water(s)	Ortega and Holstein Creeks 305.30 Pajaro River Hydrologic Unit
Water Body Type	Streambed
Designated Beneficial Uses	Municipal and Domestic Supply (MUN) Agricultural Supply (AGR) Industrial Service Supply (IND) Ground Water Recharge (GWR) Water Contact Recreation (REC-1) Non-Contact Recreation (REC-2) Wildlife Habitat (WILD) Cold Fresh Water Habitat (COLD) Warm Fresh Water Habitat (WARM) Migration of Aquatic Organisms (MIGR) Spawning, Reproduction, and/or Early Development (SPWN) Freshwater Replenishment (FRSH) Commercial and Sport Fishing (COMM)
Project Description (purpose/goal)	The purpose of this project is to reduce the number of cross-centerline accidents along State Route 152 between Old Lake Road and Dunne Lane. Central Coast Regional Water Quality Control Board (Central Coast

	<p>Water Board) staff understands that the project includes the following activities:</p> <ul style="list-style-type: none"> • Constructing a left-turn pocket into Lover’s Lane; • Widening existing lanes at Lover’s Lane for left turn channelization; • Shoulder widening from Post Miles 16.2 to 16.5 and 18.5 to 19.5; • Saw cutting existing pavement and replacing with new pavement with added friction; • Filling and replacing ditches; and • Constructing three soil nail walls and two retaining walls.
<p>Preliminary Water Quality Issues</p>	<p>Central Coast Water Board staff finds the project has the potential to cause sedimentation, siltation, and pollutant release to the creek. Erosion could be caused by the construction activities or by the roadway improvements. Pollutants could be released from construction equipment (e.g., oil, gasoline, hydraulic fluid, and other liquid contaminants associated with earth-moving equipment) or from installing new pavement.</p> <p>Central Coast Water Board staff finds the project has the potential to cause a loss of wetland, streambed, and riparian functions.</p>
<p>Project Requirements</p>	<p><u>Project practices that are required to comply with 401 Water Quality Certification are as follows:</u></p> <ol style="list-style-type: none"> 1. Construction within the jurisdictional areas shall take place only during the dry season, beginning no earlier than June 1 and ending no later than October 1, and when there is no standing water in the work area. 2. Caltrans shall implement the project as described in the application and all associated submitted documents. 3. Runoff from 1.97 acres impervious surfaces shall be treated by biofiltration strips and/or swales designed to effectively treat the runoff generated by an hourly rainfall intensity of 0.2 in./hr. 4. Caltrans shall install environmentally sensitive area fencing along the perimeter of the project footprint where construction, access, and staging may occur and around waters of the State to preserve existing vegetation and habitat. 5. Caltrans shall use adequate Best Management Practices (BMPs) (e.g., revegetation, fiber rolls, erosion control blankets, hydromulching, compost, straw with tackifiers, temporary basins) in and around construction areas to intercept rain drop impacts, control the sources of erosion, and capture sedimentation. Caltrans shall implement washout, trackout, and dust control BMPs. 6. Caltrans shall apply approved plants and seed mixtures with adequate irrigation and soil stabilizers (e.g., compost, hydromulch, tackified straw) and/or erosion control blankets in planted and seeded areas for slope stabilization. 7. Any material stockpiled that is not actively being used during construction shall be covered with plastic unless reserved for seed banking, which requires alternative erosion and dust

	<p>control BMPs.</p> <ol style="list-style-type: none"> 8. All construction vehicles and equipment used on site shall be well maintained and checked daily for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials. 9. Caltrans shall retain a spill plan and appropriate spill control and clean up materials (e.g., oil absorbent pads) onsite in case spills occur. 10. Caltrans shall confine all trash and debris in appropriate enclosed bins and dispose of the trash and debris at an approved site at least weekly. 11. Caltrans shall designate a staging area for equipment and vehicle fueling and storage at least 100 feet away from waterways, in a location where fluids cannot flow into waterways. 12. All vehicle fueling and maintenance activity shall occur at least 100 feet away from waterways, and in designated staging areas. 13. No heavy equipment shall be operated in the active flow channel of any creek. 14. Dewatering and stream diversion measures are not authorized based on the application. If the project requires dewatering or diversion, Caltrans shall submit detailed dewatering/diversion plans at least 15-days prior to any dewatering or diversion. 15. All post-construction BMPs shall be implemented and functioning prior to completion of the project. 16. All construction-related equipment, materials, and any temporary BMPs no longer needed shall be removed and cleaned from the site upon completion of the project. 17. Central Coast Water Board staff shall be notified if mitigations as described in the 401 Water Quality Certification application for this project are altered by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. Caltrans shall inform Central Coast Water Board staff of any modifications that interfere with compliance with this certification.
<p>Area of Disturbance</p>	<p>Approximately 1.306 acres total Streambed: 0.003 acres permanent, 0.035 acres temporary Riparian Area: 0.3 acres permanent, 0.8 acres temporary Wetland: 0.003 acres permanent, 0.166 acres temporary</p>
<p>Fill/Excavation Area</p>	<p>Approximately 1.306 acres of temporary or permanent fill</p>
<p>Dredge Volume</p>	<p>N/A</p>
<p>U.S. Army Corps of Engineers Permit No</p>	<p>Nationwide Permit 14 – Linear Transportation Projects</p>
<p>Federal Public Notice</p>	<p>N/A</p>

Dept. of Fish and Game Streambed Alteration Agreement	The California Department of Fish and Game did not issue a Streambed Alteration Agreement in response to the Notification of Lake or Streambed Alteration Application No. 1600-2011-0298-R3 submitted by Caltrans on November 15, 2011.
Possible Listed Species	California red-legged frog, California tiger salamander, least Bell's vireo, San Joaquin kit fox
Status of CEQA Compliance	Mitigated Negative Declaration Lead Agency: Caltrans
Compensatory Mitigation Requirements	<p>The project shall include the following:</p> <ul style="list-style-type: none"> • 0.006 acre of permanent impacts to wetlands and streambed shall be mitigated at a 2:1 ratio through the restoration of 0.012 acre of riparian and wetland habitat. • 0.2 acre of temporary impacts to wetlands and streambed shall be mitigated at a 1:1 ratio through the restoration of 0.2 acre of wetland and streambed habitat. • 0.3 acre of permanent impacts to riparian areas shall be mitigated at a 2:1 ratio through restoration of 0.6 acre of riparian habitat. • 0.8 acre of temporary impacts to riparian areas shall be mitigated at a 1:1 ratio through the restoration of 0.8 acre of riparian habitat. • All mitigation shall occur onsite. • Caltrans shall submit a Final Mitigation and Monitoring Plan (Plan) by September 1, 2012 and prior to the start of construction. Upon approval by Central Coast Water Board staff, Caltrans shall implement the Plan. The Plan shall include: <ul style="list-style-type: none"> ○ Location and size of all mitigation sites; ○ Demonstration that Caltrans has access to mitigation sites; ○ Demonstration that property owners of mitigation sites (if other than Caltrans) will allow mitigation to persist after success criteria are achieved; ○ Demonstration that mitigation sites will be self-sustaining; ○ Habitat type that will be restored; ○ Species composition of mitigation; ○ Implementation schedule; ○ Success criteria; ○ Monitoring plan and schedule; and ○ Maintenance plan and schedule.
Total Certification Fee	\$1780
Additional Conditions	<p>Contact Central Coast Water Board staff when project begins to allow for a site visit.</p> <p>The Central Coast Water Board requires visual monitoring and six reports for this project, to be submitted in electronic format to RB3_401Reporting@waterboards.ca.gov:</p>

	<ul style="list-style-type: none">• Visually inspect the site after completion of the project and for five subsequent rainy seasons to ensure that the project is not causing excessive erosion or other water quality problems. If the project does cause water quality problems, contact the Central Coast Water Board staff member overseeing the project. You will be responsible for obtaining any additional permits necessary for implementing plans for restoration to prevent further water quality problems.• Within 30 days of project completion, submit a project completion report that contains a summary of daily activities, monitoring and inspection observations, and problems incurred and actions taken; include properly identified post-project photos.• Submit five annual reports complete with photos of revegetation efforts by December 31 of each monitoring year. Annual reports shall quantify growth and progress of restoration and determine to what extent performance criteria have been met. All areas of the revegetation site shall be assessed for percent cover, general health and stature, and signs of reproduction. The report shall also include photographs of revegetation progress over time.
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California Department of Fish and Game
Bay-Delta Region
7329 Silverado Trail
Napa, CA 94558

California Endangered Species Act
Incidental Take Permit No. 2081-2011-078-03

**STATE ROUTE 152 OLD LAKE ROAD TO DUNNE LANE (LOVERS LANE) SAFETY IMPROVEMENT PROJECT
SANTA CLARA COUNTY, CALIFORNIA**

Authority: This California Endangered Species Act (CESA) Incidental Take Permit (ITP) is issued by the Department of Fish and Game (DFG) pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and California Code of Regulations, Title 14, section 783.0 et seq. CESA prohibits the take¹ of any species of wildlife designated by the California Fish and Game Commission as an endangered, threatened, or candidate species.² DFG, however, may authorize the take of any such species by permit if the conditions set forth in Fish and Game Code section 2081, subdivisions (b) and (c) are met. (See also Cal. Code Regs., tit. 14, § 783.4).

Permittee: California Department of Transportation
Contact Person: Jeffrey Jensen, District Office Chief
Mailing Address: 111 Grand Avenue
Oakland, CA 94612

Effective Date and Expiration Date of this ITP:

This ITP shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of this ITP and returned to DFG's Bay Delta Region at the address listed in the Notices section of this ITP. Unless renewed by DFG, this ITP's authorization to take the Covered Species shall expire on **December 31, 2015**.

Notwithstanding the expiration date on the take authorization provided by this ITP, Permittee's obligations pursuant to this ITP do not end until DFG accepts as complete the Permittee's Final Mitigation Report required by Condition 7.8 of this ITP.

Project Location:

The project areas are in Santa Clara County on State Route (SR) 152, locally known as the Pacheco Pass Highway, where it passes along the southeastern edge of the Santa Clara Valley at the base of the foothills of the Diablo Range. The larger project area is located between Old Lake Road (Post Mile (PM)16.2) and Dunne Lane (PM19.58), also known as San Felipe Road, and shown in Figures 1 and 2. Work will take place in two segments of the larger area: between PM 16.2 and PM 16.5, hereafter known as Segment 1; and, between PM 18.5 and PM 19.5, hereafter known as Segment 2. The general location is on the San Felipe, California USGS 7.5-minute quadrangle, in Township 11 South, Range 5 East.

¹ Pursuant to Fish and Game Code section 86, "Take" means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill."

² "Candidate species" are species of wildlife that have not yet been placed on the list of endangered species or the list of threatened species, but which are under formal consideration for listing pursuant to Fish and Game Code section 2074.2.

Project Description:

Segment 1

The work on Segment 1 will be confined to the existing pavement, and will consist only of improvements to pavement friction. No mechanized equipment will be operated outside the existing pavement or shoulders. Work is anticipated to take 11 working days to complete.

Segment 2

Work within Segment 2 includes shoulder widening and the addition of a left-turn pocket at Lovers Lane. To accommodate pavement widening with minimal impact to aquatic resources, the alignment will be widened primarily to the north. Because widening to the north will require cutting into slopes, two retaining walls will be constructed in this segment. Traffic diversion, signage and some mobilization will begin at PM 18.3 and ground disturbing activities will take place between PM 18.5, concluding at PM 19.50.

Shoulder Widening

Shoulder widening will require excavation and fill to develop a new grade for expanding the shoulder. The existing pavement will be saw-cut, and the new pavement expanded outward from the cut to a maximum extent of 8 feet.

Left-Turn Pocket

Left-turn channelization at Lovers Lane will require widening the existing lanes to develop space for the pocket. The new pocket will be 12 feet wide and 550 feet long. Widening will require excavation, fill, saw-cutting the existing pavement, and adding new pavement. The overall widening of the highway will be 16 feet to the north and 4 feet to the south.

Retaining Walls

Two soil nail walls, one retaining wall and one gabion wall will be added in Segment 2. The locations and expected dimensions of the walls are as follows:

- *Soil Nail Wall 1*
Post Mile 18.66 to 18.70
Maximum Dimensions: 15 feet high and 209 feet long

- *Soil Nail Wall 2*
Post Mile 18.78 to 19.23
Maximum Dimensions: 20 feet, 6 inches high and 2,382 feet long

- *Type 1 Retaining Wall*
Post Mile 19.0 to 19.05
Maximum Dimensions: 10 feet high and 42.9 feet long

- *Gabion Wall*
Post Mile 18.90 to 19.30
Maximum Dimensions: 12 feet high and 685 feet long

Soil nail walls function as retaining walls. They are essentially vertical masonry slabs that are held against a hillside by means of long "nails" drilled horizontally into the ground. The construction of the soil nail walls will involve excavating the hillside, drilling holes and installing the soil nails, and providing connectivity with existing drainage systems. The equipment required for this work will include a drilling machine, pump, forklift, crane, backhoe, and materials, including wire mesh and soil nails (approximately 30 feet long). Air or water will be used during the drilling process to remove the loosened soil. The slurry that is produced by the use of water during drilling will be fully contained and will not be allowed to enter any drainage systems or waterways. The Contractor may use any of several methods for staging the construction of these walls. If the walls are built from the roadway, the hillside will be cut back using a long-armed backhoe; a crane might suspend the backhoe and/or drilling machine at the required height for earth moving and drilling, or an earthen berm might be built at the base of the wall for the backhoe and drilling machine to work from. Alternatively, construction could be staged from the hillside above the wall. Staging from above would cause temporary impacts to the hillside. Although it is unlikely that the walls would be staged from the hillside, potential temporary impacts to the hillsides above the two soil nail walls were included in the project impact assessment.

A Type 1 retaining wall is a poured in place, reinforced concrete wall with a spread footing. A standard Type 1 retaining wall will be constructed along the new private driveway on the southern side of SR 152 near the SR 152-Lovers Lane intersection. The wall height will be 10 feet and the standard footing depth will be one-foot, 4 inches. To ensure required bearing capacity, there will be a sub-excavation of 2.5 feet below the planned bottom of the proposed retaining wall footing, and one-foot to each side.

A standard gabion basket retaining wall will be constructed from PM 18.9 to PM 19.3 along the southern side of SR 152. The maximum wall height will be 12 feet, and it will be tapered at both ends. These gabions baskets will be 3 feet wide, 6 to 12 feet long, and one to 3 feet high. To ensure stability against scour, the bottom gabion baskets will be embedded two feet below the original ground level along the entire length of the wall.

Drainage System

There are a total of ten existing culverts crossing highway 152. Nine of these culverts (ranging from 18 to 24 inches in diameter and one 4-foot by 3-foot box culvert) will be extended or replaced by new culverts to accommodate the shoulder widening. The remaining 18-inch culvert will be abandoned. Three new culverts will be added. Ten additional drainage inlets along the final grade of the proposed retaining wall number 2 will be installed and connected with 18-inch culverts to inlets crossing SR 152. Two culverts crossing the private driveways on the north side of SR 152 will be replaced. Five new culverts will be added to the north side of SR 152 along the private driveways. One 72-inch culvert crossing Lovers Lane will be replaced by a 6-foot by 5-foot reinforced concrete box (RCB) about 75 feet long to accommodate shoulder widening.

Miscellaneous Activities

These activities include the construction of biofiltration strips/swales and small grading and paving areas to tie in to existing driveways and roads along the project length.

A biofiltration strip is an area planted with vegetation and/or enhanced with artificial filtration material to filter drainage. A biofiltration swale is an artificial swale graded to direct, contain and filter drainage, with the same filtration elements as a biofiltration strip. There will be a total of six strips, one swale and one combined strip/swale constructed for this project. The strips/swales will be of varying length and all in immediate proximity to the highway.

The tie-ins are areas where existing driveways and roads are joined seamlessly to the new highway pavement. One driveway, which currently parallels the highway and ties in to Lover's Lane from the east, will be realigned to accommodate the new highway width. There will be nine other minor driveway/road tie ins where minor asphalt placement will be done to connect the roads/driveways with the new road profile.

PG&E Utility Relocation

Pacific Gas and Electric Company (PG&E) will relocate four electric distribution poles in the Caltrans right-of-way in Segment 2. Poles 1 and 2 will be relocated to PM 18.31, and poles 3 and 4 will be relocated to PM 19.5. An auger mounted from a line truck will be used to excavate holes a maximum depth of 7 feet and approximately 24 inches in diameter. This activity will take approximately 3 weeks to complete, and will be scheduled prior to commencement of Caltrans project construction activities. The Permittee shall assume the mitigation and monitoring responsibilities during PG&E activities.

Covered Species Subject to Take Authorization Provided by this ITP:

This ITP covers the following species:

Name	CESA Status³
1. California tiger salamander (<i>Ambystoma californiense</i>)	Threatened (Cal. Code Regs. tit. 14 § 670.5, subd. (b)(3)(G).

This species and only this species is hereinafter referred to as the "Covered Species."

Impacts of the Taking on Covered Species:

Project activities and their resulting impacts are expected to result in the incidental take of individuals of California tiger salamander. The activities described above that could result in incidental take of individuals the Covered Species include grading, digging, raking, material compaction, vehicle movement, installation of fencing, and drilling (Covered Activities). Incidental take of individuals of the Covered Species may occur from Covered Activities in the form of mortality ("kill") from crushing, suffocation, handling, and poisoning from chemical contact. Incidental take of individuals of the Covered Species may also occur in the form of pursue, catch, capture, or attempt to do so from capture and relocation activities prescribed in this ITP. Take could occur between Old Lake Road and Dunne Lane (Project Area). The Project will cause the

³ Under CESA, a species may be on the list of endangered species, the list of threatened species, or the list of candidate species. All other species are "unlisted."

permanent loss of 2.03 acres of upland/dispersal/foraging habitat and the temporary loss of 6.19 acres of upland/dispersal/foraging habitat (Figure 3). Impacts of the proposed taking also include adverse impacts to Covered Species related to temporal losses, and the Project's incremental contribution to cumulative impacts (indirect impacts) such as stress resulting from noise and vibrations from drilling, grading and vehicle movement.

Incidental Take Authorization of Covered Species:

This ITP authorizes incidental take of the Covered Species and only the Covered Species. With respect to incidental take of the Covered Species, DFG authorizes the Permittee, its employees, contractors, and agents to take Covered Species incidentally in carrying out the Covered Activities, subject to the limitations described in this section and the Conditions of Approval identified below. This ITP does not authorize take of Covered Species from activities outside the scope of the Covered Activities, take of Covered Species outside of the Project Area, take of Covered Species resulting from violation of this ITP, or intentional take of Covered Species except for capture and relocation of Covered Species as authorized by this ITP.

Conditions of Approval:

Unless specified otherwise, the following measures shall pertain to all Covered Activities within the Project Area, including areas used for vehicular, ingress and egress, staging and parking and noise and vibration generating activities that may cause take. DFG's issuance of this ITP and Permittee's authorization to take the Covered Species are subject to Permittee's compliance with and implementation of the following Conditions of Approval:

1. **Legal Compliance:** Permittee shall comply with all applicable State, federal, and local laws in existence on the effective date of this ITP or adopted thereafter.
2. **CEQA Compliance:** Permittee shall implement and adhere to the mitigation measures related to the Covered Species in the Biological Resources section of the Mitigated Negative Declaration (SCH Number: 2009102085) adopted by the lead agency, California Department of Transportation for the Project pursuant to the California Environmental Quality Act (CEQA) on March 30, 2010.
3. **LSA Agreement Compliance:** Permittee shall implement and adhere to all measures intended to protect fish and wildlife in the Lake or Streambed Alteration Notification (1600-2011-0298-3), submitted to DFG August 2011, revised in November 2011 and for which DFG was unable to provide a draft Agreement to the California Department of Transportation within 60 days. The California Department of Transportation shall conduct the activities associated with this project as described in the Notification, including the measures in the Notification that are intended to protect fish and wildlife.
4. **ESA Compliance:** Permittee shall implement and adhere to the terms and conditions related to the Covered Species in the Biological Opinion on the Effects of the Proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project, Santa Clara County, California, 81420-2008-F-1995 and the amendment dated

Incidental Take Permit
No. 2081-2011-078-03
CALIFORNIA DEPARTMENT OF TRANSPORTATION
LOVER'S LANE SAFETY IMPROVEMENT PROJECT

December 7, 2011 (81420-2008-F-1995-R001-2) for the Project pursuant to the Federal Endangered Species Act (ESA), unless those terms and conditions are less protective of the Covered Species or conflict with the conditions of this ITP.

5. **ITP Time Frame Compliance:** Permittee shall fully implement and adhere to the conditions of this ITP within the time frames set forth below and as set forth in the Mitigation Monitoring and Reporting Program (MMRP), which is included as Attachment 1 to this ITP.

6. **General Provisions:**

- 6.1. **Designated Representative.** Before starting any Covered Activities, Permittee shall designate a representative (Designated Representative) responsible for communications with DFG and overseeing compliance with this ITP. Permittee shall notify DFG in writing before starting any Covered Activities of the Designated Representative's name, business address, and contact information, and shall notify DFG in writing if a substitute Designated Representative is selected or identified at any time during the term of this ITP.
- 6.2. **Designated Biologist.** Permittee shall submit to DFG in writing the names, qualifications, business addresses, and contact information of all biological monitors (Designated Biologists) at least 30 days before starting Covered Activities. Permittee shall ensure that the Designated Biologists are knowledgeable and experienced in the biology, natural history and handling of the Covered Species. The Designated Biologists shall be responsible for monitoring the Covered Activities to help minimize and fully mitigate or avoid the incidental take of individual Covered Species and to minimize disturbance of Covered Species' habitat. Permittee shall obtain DFG approval of the Designated Biologists in writing before starting Covered Activities. Additional biologists working on the project after the initial approval must meet the same qualifications and approval.
- 6.3. **Designated Biologist Authority.** To ensure compliance with the Conditions of Approval of this ITP, a Designated Biologists shall communicate to the Resident Engineer any activity that is not in compliance with this ITP and the Resident Engineer shall immediately stop the activity that is not in compliance with this ITP. This authority extends to activities conducted by PG&E.
- 6.4. **Education Program.** Permittee shall conduct an education program for all persons employed or otherwise working in the Project Area, including PG&E, before performing any work. The program shall consist of a presentation from a Designated Biologist that includes a discussion of the biology and general behavior of the Covered Species, information about the distribution and habitat needs of the Covered Species, sensitivity of the Covered Species to human activities, its status pursuant to CESA including legal protection, recovery efforts, penalties for violations and Project-specific protective measures described in this ITP. Permittee shall provide interpretation for non-English speaking workers, and the same instruction shall be provided for any new workers

before their performing work in the Project Area. Permittee shall prepare and distribute wallet-sized cards or a fact sheet handout containing this information for workers to carry in the Project Area. Upon completion of the program, employees shall sign a form stating they attended the program and understand all protection measures. This training shall be repeated at least once annually for long-term and/or permanent employees that will be conducting work in the Project Area.

- 6.5. Construction Monitoring Notebook. The Designated Biologist shall maintain a construction-monitoring notebook on-site throughout the construction period which shall include a copy of this ITP with attachments and a list of signatures of all personnel who have successfully completed the education program. Permittee shall ensure a copy of the construction-monitoring notebook is available for review at the Project site upon request by DFG.
- 6.6. Trash Abatement. Permittee shall initiate a trash abatement program before starting Covered Activities and shall continue the program for the duration of the Project. Permittee shall ensure that trash and food items are contained in closed (animal-proof) containers and removed regularly (at least once a week) to avoid attracting opportunistic predators such as ravens, coyotes, and feral dogs.
- 6.7. Dust Control. Permittee shall implement dust control measures during Covered Activities to facilitate visibility for monitoring of the Covered Species by the Designated Biologist. Permittee shall keep the amount of water used to the minimum amount needed, and shall not allow water to form puddles.
- 6.8. Erosion Control Materials. To protect wildlife, erosion control materials other than seeding only, shall consist of hydraulically applied erosion control products (HECP), organic mulches free of non-native seeds, organic mulch control nettings (MCN) with loose weave construction (the strands slide along cross strands) and openings over four centimeters, and staked in straw bales or temporary erosion control fencing. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials shall not be used.
- 6.9. Delineation of Property Boundaries. Before starting Covered Activities along each part of the route in active construction, Permittee shall clearly delineate the boundaries of the Project Area with fencing, stakes or flags. Permittee shall restrict all Covered Activities to within the fenced, staked or flagged areas. Permittee shall maintain all fencing, stakes and flags until the completion of Covered Activities in that area.
- 6.10. Delineation of Habitat. Permittee shall clearly delineate habitat of the Covered Species within the Project Area with posted signs, posting stakes, flags, and/or rope or cord, and place fencing as necessary to minimize the disturbance of Covered Species' habitat. See Condition 8.6.

- 6.11. Project Access. Project-related personnel shall access the Project Area using existing routes, or routes identified in the Project Description and shall not cross Covered Species' habitat outside of or en route to the Project Area. Permittee shall restrict Project-related vehicle traffic to established roads, staging, and parking areas. If Permittee determines construction of routes for travel are necessary outside of the Project Area, the Designated Representative shall contact DFG for written approval before carrying out such an activity. DFG may require an amendment to this ITP if additional take of Covered Species may result from Project modification.
- 6.12. Staging Areas. Equipment and materials staging will be located within the project footprint. A designated Biologist will work with the contractor and resident engineer to ensure that any staging area is not in a biologically sensitive location. In Segment 1, staging will occur in existing pull-outs along SR 152 and no equipment will be stored in the pull-outs overnight. In Segment 2, staging will occur within the existing right of way or within temporary construction easements within the project footprint. After construction ends, the staging areas will be stabilized and revegetated, where appropriate.
- 6.13. Hazardous Waste. In the event of any fuel or hazardous waste leaks or spills, Permittee shall immediately stop work and clean up the spill. Spills or leaks shall be cleaned by qualified parties following pertinent State and federal statutes and regulations for repair and clean of spills. Cleaning shall take place at the time of occurrence, or as soon as it is safe to do so. To the extent feasible, Permittee shall exclude the storage and handling of hazardous materials from the Project Area and shall properly contain and dispose of any unused or leftover hazardous products off-site.
- 6.14. DFG Access. Permittee shall provide DFG staff with reasonable access to the Project and shall otherwise fully cooperate with DFG efforts to verify compliance with or effectiveness of mitigation measures set forth in this ITP.
- 6.15. Refuse Removal. Upon completion of Covered Activities, Permittee shall remove from the Project Area and properly dispose of all temporary fill and construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes.

7. Monitoring, Notification and Reporting Provisions:

- 7.1. Notification Before Commencement. The Designated Representative shall notify DFG 14 calendar days before starting Covered Activities and shall provide documentation of compliance with all pre-Project Conditions of Approval to DFG before starting Covered Activities.
- 7.2. Notification of Non-compliance. The Designated Representative shall immediately notify DFG in writing if he or she determines that the Permittee is not in compliance with any Condition of Approval of this ITP, including but not limited to any actual or

anticipated failure to implement measures within the time periods indicated in this ITP and/or the MMRP. The Designated Representative shall report any non-compliance with this ITP to DFG within 24 hours.

- 7.3. Compliance Monitoring. A Designated Biologist shall be present daily when Covered Activities occur. Each Designated Biologist shall conduct compliance inspections to (1) minimize incidental take of the Covered Species; (2) prevent unlawful take of species; (3) check for compliance with all measures of this ITP; (4) check all exclusion zones; and (5) ensure that signs, stakes, and fencing are intact, and that Covered Activities are only occurring in the Project Area. The Designated Representative or Designated Biologist shall prepare daily written observation and inspection records summarizing: oversight activities and compliance inspections, observations of Covered Species and their sign, survey results, and monitoring activities required by this ITP.
- 7.4. Photographic Documentation of Covered Activities. Prior to commencement of work, Permittee shall flag a minimum of one photo point every 1/8 of a mile along the Project alignment. The photo points shall provide comprehensive views of the Project Area and Covered Species habitat that will be impacted by the Project. Prior to construction, Permittee shall photograph the Project Area from each of the flagged points, noting the direction and magnification of each photo. On a monthly basis, Permittee shall photograph construction activities from flagged photo points using the same direction and magnification as pre-construction photos. Labeled copies of photographs taken at each photo point shall be sent to DFG as a component of required Quarterly Compliance Reports (see Condition 7.5).
- 7.5. Quarterly Compliance Report. The Designated Representative or Designated Biologist shall compile the observation and inspection records identified in Condition 7.3 into a Quarterly Compliance Report and submit it to DFG along with a copy of the MMRP table with notes showing the current implementation status of each mitigation measure. Quarterly Compliance Reports shall be submitted to DFG's Regional Office at the office listed in the Notices section of this ITP and via e-mail to DFG's Regional Representative. At the time of this ITP's approval, the DFG Regional Representative is Melissa Escaron (mescaron@dfg.ca.gov or (707) 339-0334). DFG may at any time increase the timing and number of compliance inspections and reports required under this provision depending upon the results of previous compliance inspections. If DFG determines the reporting schedule must be changed, DFG will notify Permittee in writing of the new reporting schedule.
- 7.6. Annual Status Report. Permittee shall provide DFG with an Annual Status Report (ASR) no later than January 31 of every year beginning with issuance of this ITP and continuing until DFG accepts the Final Mitigation Report identified below. Each ASR shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports for that year identified in Condition 7.5; (2) a general description of the status of the Project Area and Covered Activities, including actual or projected completion dates, if known; (3) a copy of the table in the MMRP with notes showing the current

implementation status of each mitigation measure; (4) an assessment of the effectiveness of each completed or partially completed mitigation measure in avoiding, minimizing and mitigating Project impacts; (5) all available information about Project-related incidental take of the Covered Species; (6) an accounting of the number of acres subject to both temporary and permanent disturbance, both for the prior calendar year, and a total since ITP issuance; and, if appropriate; (7) information about other Project impacts on the Covered Species.

- 7.7. CNDDDB Observations. The Designated Biologist shall submit all observations of Covered Species to DFG's California Natural Diversity Database (CNDDDB) within 60 calendar days of the observation and the Designated Biologist shall include copies of the submitted forms with the Annual Status Report.
- 7.8. Final Mitigation Report. No later than 45 days after completion of all mitigation measures, Permittee shall provide DFG with a Final Mitigation Report. A Designated Biologist shall prepare the Final Mitigation Report which shall include, at a minimum: (1) a summary of all Quarterly Compliance Reports and all Annual Status Reports; (2) a copy of the table in the MMRP with notes showing when each of the mitigation measures was implemented; (3) all available information about Project-related incidental take of the Covered Species; (4) information about other Project impacts on the Covered Species; (5) beginning and ending dates of Covered Activities; (6) an assessment of the effectiveness of this ITP's Conditions of Approval in minimizing and fully mitigating Project impacts of the taking on Covered Species; (7) recommendations on how mitigation measures might be changed to more effectively minimize take and mitigate the impacts of future projects on the Covered Species; and (8) any other pertinent information.
- 7.9. Notification of Take or Injury. Permittee shall immediately notify a Designated Biologist if a Covered Species is taken or injured by a Project-related activity, or if a Covered Species is otherwise found dead or injured within the vicinity of the Project. The Designated Biologist or Designated Representative shall provide initial notification to DFG by calling the Regional Office at (707) 944-5500. The initial notification to DFG shall include information regarding the location, species, number of animals taken or injured, and the ITP Number. Following initial notification, Permittee shall provide DFG a written report within two calendar days. The report shall include the date and time of the finding or incident, location of the animal or carcass, and if possible provide a photograph, explanation as to cause of take or injury, and any other pertinent information.

8. Take Minimization Measures:

The following requirements are intended to ensure the minimization of incidental take of Covered Species in the Project Area during Covered Activities. Permittee shall implement and adhere to the following conditions to minimize take of Covered Species:

- 8.1. To the extent practicable, construction activities will not occur during the wet season. Other than vegetation clearing activities not resulting in ground disturbance (necessary to minimize nesting birds from constraining project work during the dry season), construction work will be limited to the period from April 15 to October 15 of any year.
- 8.2. At least 60 working days prior to the date of initial in-water, or ground- or vegetation-disturbing activities, Permittee shall prepare a relocation plan for moving any Covered Species discovered in harm's way while carrying out any Covered Activities. The plan shall identify a specific area or area where Covered Species can be relocated. The draft plan shall be submitted to the DFG representative for approval prior to commencing any Covered Activities.
- 8.3. Permittee shall maintain on-site an aquarium or similar holding tank to temporarily keep Covered Species found in harm's way. The aquarium shall contain moist soil and cover material and be kept in a safe, cool location. Healthy individuals temporarily kept in the tank shall be relocated in accordance with the plan described in 8.2 as soon as the Covered Species can be safely relocated.
- 8.4. If an injured Covered Species is found during the project term, the individual shall be evaluated by a Designated Biologist and then moved to the aquarium described in 8.3. The Designated Biologist shall contact the DFG representative and discuss the condition of the injured salamander. The general protocol will be the following: if the injury is minor and the Covered Species is likely to survive, it shall be released in accordance with the plan described in 8.2. If the injury appears severe or mortal, the Covered Species shall be kept in the aquarium until it recovers sufficiently to be released or it expires. During this time, food must be provided.
- 8.5. No more than three (3) calendar days prior to any ground or vegetation disturbance, pre-construction surveys shall be conducted by a Designated Biologist for Covered Species within all portions of the project area considered potential habitat. These surveys shall consist of walking surveys of the project limits to investigate all potential cover sites and clear the construction area. This includes investigation of mammal burrows to the extent feasible. Any Covered Species encountered shall be relocated in accordance with the plan described in 8.1.
- 8.6. Permittee will install exclusion fencing for the Covered Species around any work area within Covered Species' habitat immediately following pre-construction surveys, and a Designated Biologist will be present to monitor installation of the exclusion fencing. Exclusionary fencing will consist of taut fabric or mesh such as Ertec E-fence, at least 24 inches in height, staked at 10-foot intervals, with the bottom buried 6 inches below grade. Exclusion fencing will be maintained so that it is intact at all times while Covered Activities are taking place.

- 8.7. Environmentally Sensitive Areas within the project site will be delineated with high-visibility temporary Environmentally Sensitive Area fencing at least 4 feet in height, flagging, or other barrier to prevent encroachment of construction personnel and equipment into any sensitive areas during project work activities. A Designated Biologist shall perform Covered Species pre-construction clearance surveys and monitoring in areas where Covered Species' habitat is present during the installation of the Environmentally Sensitive Area and silt fencing. Such fencing will be inspected daily by a Designated Biologist until completion of the project. The fencing will be removed only when all construction equipment is removed from the site. Actions within the project area will be limited to vehicle and equipment operation on existing roads unless otherwise approved by DFG. No project activities will occur outside the delineated project construction area.
- 8.8. Only Designated Biologists with the appropriate State and federal handling permits, who are familiar with the biology and ecology of the Covered Species, will capture or handle Covered Species.
- 8.9. Nets or bare hands may be used to capture Covered Species. Approved biologist will not use soaps, oils or creams, lotions, repellents, or solvents of any sort on their hands within two hours before and during periods when they are capturing and relocating Covered Species. To avoid transferring disease or pathogens between aquatic habitats during the course of surveys or handling Covered Species, the approved biologist will follow the Declining Amphibian Populations Task Force's "Code of Practices." Approved biologist will limit the duration of handling and captivity of Covered Species. While in captivity, individual Covered Species shall be kept in a cool, moist, aerated environment, such as a bucket containing a damp sponge. Containers used for holding or transporting adults of this species shall not contain any standing water.
- 8.10. Designated Biologists shall be on-site to monitor the initial ground-disturbing activities. A clearance survey shall be carried out immediately prior to the initial ground disturbance. A Designated Biologist should also investigate areas of disturbed soil for signs of listed species within 30 minutes following the initial disturbance of that given area.
- 8.11. At all times, there shall be sufficient Designated Biologists on-site to observe all areas within the project area where take of Covered Species could occur at that moment.
- 8.12. To prevent inadvertent entrapment of Covered Species during construction, all excavated, steep-walled holes or trenches more than six inches deep will be covered at the close of each working day by plywood or similar material, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they must be thoroughly inspected for trapped animals. If at any time a trapped Covered Species is discovered, a Designated Biologist will relocate the Covered Species in accordance with the plan described in 8.1.

9. Habitat Management Land Acquisition and Restoration:

DFG has determined that permanent protection and perpetual management of compensatory habitat is necessary and required pursuant to CESA to fully mitigate Project-related impacts of the taking on the Covered Species that will result with implementation of the Covered Activities. This determination is based on factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and DFG's estimate of the acreage required to provide for adequate compensation.

To meet this requirement, the Permittee shall either purchase 12.9 acres of Covered Species credits from a DFG-approved mitigation or conservation bank (Condition 9.2) OR shall provide for the permanent protection and management of 12.9 acres of Habitat Management (HM) lands by recordation of a conservation easement pursuant to Government Code 65965, along with calculation and deposit of the management funds (Condition 9.3). Permanent protection and perpetual management of compensatory habitat must be complete before starting Covered Activities, or within 18 months of the effective date of this ITP if Security is provided pursuant to Condition 10 below.

- 9.1. Cost Estimates. DFG has estimated the cost of acquisition, protection, and perpetual management of the HM lands and restoration of temporarily disturbed habitat as follows:
 - 9.1.1. Land acquisition costs for HM lands identified in Condition 9.3 below, estimated at \$19,360/acre for 12.9 acres: **\$249,744**. Land acquisitions costs are estimated using local fair market current value for lands with habitat values meeting mitigation requirements;
 - 9.1.2. Start-up costs for HM lands, including initial site protection and enhancement costs as described in Condition 9.3.5 below, estimated at **\$15,000**;
 - 9.1.3. Interim management period funding as described in Condition 9.3.6 below, estimated at **\$17,000**;
 - 9.1.4. Long-term management funding as described in Condition 9.4 below, estimated at \$5,640.00/acre for 12.9 acres: **\$72,756**. The long-term management endowment fund is estimated initially for the purpose of providing Security to ensure implementation of HM land management.
 - 9.1.5. Related transaction fees including but not limited to account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM Lands to DFG as described in Condition 9.5, estimated at **\$6,000**.

- 9.1.6. The on-site restoration of temporarily impacted areas is estimated at \$30,000/acre for 6.19 acres: **\$185,700.**
- 9.2. Covered Species Credits. Prior to initiating Covered Activities, or no later than 18 months from the issuance of this ITP if Security is provided pursuant to Condition 10 below, the Permittee shall purchase 12.9 acres of Covered Species credits from a DFG-approved mitigation or conservation bank.
- OR:
- 9.3. Habitat Acquisition and Protection. To provide for the acquisition and protection of the HM lands, the Permittee shall:
- 9.3.1. Fee Title/Conservation Easement. Transfer fee title to the HM lands to DFG pursuant to terms approved by DFG within 18 months of the effective date of this ITP. Alternatively, DFG, in its sole discretion, may authorize a special district, non-profit organization, for-profit entity, person, or other entity to hold title to the property provided that the district, organization, entity, or person meets the requirements of Government Code section 65965, et seq., as amended. If DFG does not hold fee title to the HM lands, DFG shall act as grantee for a conservation easement over the HM lands or shall, in its sole discretion, approve a non-profit entity, public agency, or Native American tribe to act as grantee for a conservation easement over the HM lands provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If DFG does not hold the conservation easement, DFG shall be named third-party beneficiary. The Permittee shall obtain DFG approval of any conservation easement before its recordation;
- 9.3.2. HM Lands Approval. Within 6 months of the effective date of this ITP obtain DFG approval of the HM lands before acquisition and/or transfer of the land by submitting, a formal Proposed Lands for Acquisition Form (see Attachment 2B) identifying the land to be purchased or property interest conveyed to an approved entity as mitigation for the Project's impacts on Covered Species;
- 9.3.3. HM Lands Documentation. Within 6 months of the effective date of this ITP provide a recent preliminary title report, initial hazardous materials survey report, and other necessary documents (see Attachment 2A). All documents conveying the HM lands and all conditions of title are subject to the approval of DFG, and if applicable, the Wildlife Conservation Board and the Department of General Services;
- 9.3.4. Land Manager. Within 6 months of the effective date of this ITP provide documentation from the HM lands landowner agreeing to be the responsible party (Land Manager) for HM lands management. The HM lands landowner may identify, with approval by DFG, the conservation easement grantee or

other party to act as on their behalf for HM lands management. Documents related to land management shall identify the landowner as the Land Manager. Permittee shall notify DFG of any subsequent changes in the Land Manager within 30 days of the change. If DFG will hold fee title to the mitigation land, DFG will also act as long-term Land Manager unless otherwise specified;

- 9.3.5. Start-up Activities. Provide for the implementation of start-up activities, including the initial site protection and enhancement of HM lands, once the HM lands have been approved by DFG. Start-up activities include, at a minimum: (1) conducting a baseline biological assessment and land survey report within four months of recording or transfer; (2) developing and transferring Geographic Information Systems (GIS) data if applicable; (3) installing signage; (4) installation of fencing; and (5) litter removal;
- 9.3.6. Interim Management (Initial and Capital). Provide for the interim management of the HM lands and provide a development plan (if necessary) for site enhancements. The Permittee shall ensure that the interim land manager implements the interim management of the HM Lands as described in the final long-term management plan and conservation easement approved by DFG. The interim management period shall be a minimum of three years from the date of HM land acquisition and protection and full funding of the Endowment and includes expected management following start-up activities. Interim management period activities shall include but not be limited to; fence repair, continuing trash removal, site monitoring, and vegetation and invasive species management. Permittee shall either (1) provide a security to DFG for the minimum of three years of interim management that the land owner, Permittee, or land manager agrees to manage and pay for at their own expense, or, (2) establish an escrow account with instructions to pay the land manager annually in advance, or, (3) establish a short-term enhancement account with DFG for annual payment to the land manager.
- 9.3.7. Long-term Management Plan (LTMP). Permittee shall submit for DFG approval a LTMP before starting Covered Activities, or within 12 months of the effective date of this ITP if Security is provided pursuant to Condition 10 below. The LTMP shall describe all necessary tasks and funding, including, but not limited to: Land Manager and Resource Manager (rangeland manager) responsibilities and land management tasks; biological surveys and monitoring; adaptive management strategy and remedial measures and costs; and endowment amount. (see <http://www.dfg.ca.gov/habcon/conplan/mitbank/>)
- 9.4. Endowment Fund. The Permittee shall ensure that the HM lands are perpetually managed, maintained, and monitored by the long-term land manager as described in the final management plan and conservation easement approved by DFG. After obtaining DFG approval of the HM lands, Permittee shall provide long-term management funding for the in-perpetuity management of the HM lands by

establishing a long-term management fund (Endowment Fund). The Endowment Fund is a sum of money, held in a DFG-authorized trust fund that provides funds for the perpetual management, maintenance, monitoring, and other activities on the HM lands consistent with the LTMP required by Condition 9.3.7. Endowment Fund as used in this ITP shall refer to the endowment deposit and all interest, dividends, other earnings, additions and appreciation thereof. The endowment fund shall be fully funded within 18 months of the effective date of this ITP.

After the interim management period, Permittee shall ensure that the designated long-term land manager implements the management and monitoring of the HM lands according to the LTMP. The long-term land manager shall be obligated to manage and monitor the HM lands in perpetuity to preserve their conservation values in accordance with this ITP, the conservation easement, and the LTMP. Such activities shall be funded through the Endowment Fund.

9.4.1. Identify an Endowment Fund Manager. The Endowment Fund shall be held by the Endowment Fund Manager, which shall be either DFG or an entity qualified pursuant to Government Code section 65965, et seq., as amended, and designated in writing by DFG in its sole discretion. DFG shall designate the Endowment Fund Manager within 180 days of the effective date of this ITP. If Permittee seeks to transfer the funds for the Endowment Fund prior to DFG's designation of an Endowment Fund Manager, Permittee shall transfer the funds to an escrow account (Endowment Escrow Account) pursuant to written escrow instructions to be approved in advance in writing by DFG. All interest, dividends, and other earnings, additions, and appreciation on the Endowment Fund accrued while it is held in the Endowment Escrow Account shall be added to the Endowment Fund and transferred to the Endowment Fund Manager once designated by DFG;

9.4.2. Calculate the Endowment Funds Deposit. After obtaining DFG approval of the HM lands, LTMP, and Endowment Fund Manager, Permittee shall prepare a Property Analysis Record (PAR) or PAR-equivalent analysis (hereinafter "PAR") to calculate the amount of funding necessary to ensure the long-term management of the HM lands (Endowment Deposit Amount). The Permittee shall submit to DFG for review and approval the results of the PAR before transferring funds to the Endowment Fund Manager.

9.4.2.1. Capitalization Rate and Fees. Permittee shall obtain the capitalization rate from the selected Endowment Fund Manager for use in calculating the PAR and adjust for any additional administrative, periodic, or annual fees. If the funds for the Endowment Fund will be placed in an Endowment Escrow Account, the capitalization rate and PAR shall be calculated to take account of the reasonably anticipated rate of return for the funds while held in escrow.

9.4.2.2. Endowment Buffers/Assumptions. Permittee shall include in PAR assumptions the following buffers for endowment establishment and use that will substantially ensure long-term viability and security of the Endowment Fund:

9.4.2.2.1. 10 Percent Contingency. A 10 percent contingency shall be added to each endowment calculation to hedge against underestimation of the fund, unanticipated expenditures, inflation, or catastrophic events.

9.4.2.2.2. Three Years Delayed Spending. The endowment shall be established assuming spending will not occur for the first three years after full funding.

9.4.2.2.3. Non-annualized Expenses. For all large capital expenses to occur periodically but not annually such as fence replacement or well replacement, payments shall be withheld from the annual disbursement until the year of anticipated need or upon request to Endowment Fund Manager and DFG.

9.4.3. Transfer Long-term Endowment Funds. Permittee shall transfer the long-term endowment funds to the Endowment Fund Manager upon DFG approval of the Endowment Deposit Amount identified above and no later than 18 months following ITP issuance. The approved Endowment Fund Manager may pool the Endowment Fund with other endowments for the operation, management, and protection of HM lands for local populations of the Covered Species but shall maintain separate accounting for each Endowment Fund.

9.5. Reimburse DFG. Permittee shall reimburse DFG for all reasonable expenses incurred by DFG such as transaction fees, account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM Lands to DFG.

9.6. Adjustment for Inflation. Until the Endowment Fund is fully funded, the total Endowment Deposit Amount shall adjust annually, on January 2 of each year (each such date is referred to as an "Adjustment Date"), by a percentage equal to the percentage increase, if any, in the California Consumer Price Index, All Items (1982-1984 = 100), for All Urban Consumers for California (the "CPI"), published by the California Department of Industrial Relations, Division of Labor Statistics and Research. Adjustment of the Endowment Deposit Amount is the percentage increase of the CPI published most immediately preceding the Adjustment Date, as compared to the CPI published most immediately preceding the date of approval of HM Lands. The adjustment shall be applied to the Endowment Deposit Amount that the Permittee shall provide to the Endowment Fund Manager.

9.7. Restoration of Temporary Disturbance. Where temporary soil disturbance occurs, Permittee shall place stockpiled native topsoil and regrade to match the existing topography. Permittee shall revegetate with native grass species no later than October 31 of the year of the impact to be considered a temporary impact. Within 6 months of execution of this ITP, the Permittee shall prepare a Vegetation Restoration Plan for DFG review and approval, to revegetate the 6.19 acres of temporary disturbance.

10. Performance Security

The Permittee may proceed with Covered Activities only after the Permittee has ensured funding (Security) to complete any activity required by [Condition 9] that has not been completed before Covered Activities begin. Permittee shall provide Security as follows:

10.1. Security Amount. The Security shall be in the amount of **\$546,200**. This amount is based on the cost estimates identified in Condition 9.1 above;

10.2. Security Form. The Security shall be in the form of a funding assurance letter signed by the Deputy District Directors of Environmental Planning and Engineering and Project Management or another form of Security, approved in advance in writing by DFG's Office of the General Counsel or another mechanism approved in advance in writing by DFG's Office of the General Counsel.;

10.3. Security Timeline. The Security shall be provided to DFG before Covered Activities begin or within 30 days after the effective date of this ITP, whichever occurs first;

Even if Security is provided, the Permittee must complete the required acquisition, protection and transfer of all HM lands and record any required conservation easements or provide proof of purchase of Covered Species credits at a DFG-approved mitigation or conservation bank no later than 18 months from the effective date of this ITP. DFG may require the Permittee to provide additional HM lands and/or additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the Permittee does not complete these requirements within the specified timeframe.

Amendment:

This ITP may be amended as provided by California Code of Regulations, Title 14, section 783.6, subdivision (c), and other applicable regulations and law. This ITP may also be amended without the concurrence of the Permittee as required by law, including if DFG determines that continued implementation of the Project under existing ITP conditions would jeopardize the continued existence of the Covered Species or that Project changes or changed biological conditions necessitate an ITP amendment to ensure that impacts to the Covered Species are minimized and fully mitigated.

Stop-Work Order:

DFG may issue Permittee a written stop-work order to suspend any activity covered by this ITP for an initial period of up to 25 days to prevent or remedy a violation of any ITP condition(s) (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. Permittee shall comply with the stop-work order immediately upon receipt thereof. DFG may extend a stop-work order under this provision for a period not to exceed 25 additional days, upon written notice to the Permittee. DFG may commence the formal suspension process pursuant to California Code of Regulations, Title 14, section 783.7 within five working days of issuing a stop-work order. Neither the Designated Biologist nor DFG shall be liable for any costs incurred in complying with stop-work orders.

Compliance with Other Laws:

This ITP contains DFG's requirements for the Project pursuant to CESA. This ITP does not necessarily create an entitlement to proceed with the Project. Permittee is responsible for complying with all other applicable State, federal, and local laws.

Notices:

The Permittee shall deliver a fully executed duplicate original ITP by registered first class mail or overnight delivery to the following address:

Scott Wilson, Acting Regional Manager
California Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558

Written notices, reports and other communications relating to this ITP shall be delivered to DFG by registered first class mail at the following addresses, or at addresses DFG may subsequently provide the Permittee. Notices, reports, and other communications shall reference the Project name, Permittee, and ITP Number (2081-2011-078-03) in a cover letter and on any other associated documents.

Original cover with attachment(s) to:

Scott Wilson, Acting Regional Manager
California Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
Telephone (707) 944-5517

Incidental Take Permit
No. 2081-2011-078-03
CALIFORNIA DEPARTMENT OF TRANSPORTATION
LOVER'S LANE SAFETY IMPROVEMENT PROJECT

Copy of cover without attachment(s) to:

Office of the General Counsel
California Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

And:

Habitat Conservation Planning Branch
California Department of Fish and Game
1416 Ninth Street, Suite 1260
Sacramento, CA 95814

Unless Permittee is notified otherwise, DFG's Regional Representative for purposes of addressing issues that arise during implementation of this ITP is:

Melissa Escaron
California Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
Telephone: (707) 339-0334

Compliance with CEQA:

DFG's issuance of this ITP is subject to CEQA. DFG is a responsible agency pursuant to CEQA with respect to this ITP because of prior environmental review of the Project by the lead agency, the California Department of Transportation. (See generally Pub. Resources Code, §§ 21067, 21069). The lead agency's prior environmental review of the Project is set forth in the Lover's Lane Safety Improvement Project Mitigated Negative Declaration, (State Clearinghouse #2009012085) dated January 2009 that the California Department of Transportation adopted on March 30, 2010. At the time the lead agency adopted the Mitigated Negative Declaration and approved the Project, it also adopted all mitigation measures described in the Mitigated Negative Declaration as conditions of Project approval.

In fulfilling its obligations as a responsible agency, DFG's obligations pursuant to CEQA are more limited than those of the lead agency. DFG, in particular, is responsible for considering only the effects of those Project activities that it is required by law to carry out or approve, and mitigating or avoiding only the direct or indirect environmental effects of those parts of the Project that it decides to carry out, finance, or approve [Pub. Resources Code, § 21002.1, subd. (d); CEQA Guidelines, §§ 15041, subd. (b), 15096, subds. (f)-(g)].⁴ Accordingly, because DFG's exercise of discretion is limited to issuance of this ITP, DFG is responsible for considering only the environmental effects that fall within its permitting authority pursuant to CESA.

⁴ The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

This ITP, along with DFG's CEQA findings for this ITP and Project, which are available as a separate document, provide evidence of DFG's consideration of the lead agency's Mitigated Negative Declaration for the Project and the environmental effects related to issuance of this ITP [CEQA Guidelines, § 15096, subd. (f)]. DFG finds that issuance of this ITP will not result in any previously undisclosed potentially significant effects on the environment or a substantial increase in the severity of any potentially significant environmental effects previously disclosed by the lead agency. Furthermore, to the extent the potential for such effects exists, DFG finds adherence to and implementation of the Conditions of Project Approval adopted by the lead agency, as well as adherence to and implementation of the Conditions of Approval imposed by DFG through the issuance of this ITP, will avoid or reduce to below a level of significance any such potential effects. DFG consequently finds that issuance of this ITP will not result in any significant, adverse impacts on the environment.

Findings Pursuant to CESA:

These findings are intended to document DFG's compliance with the specific findings requirements set forth in CESA and related regulations. [Fish and Game Code § 2081, subs. (b)-(c); Cal. Code Regs., tit. 14, §§ 783.4, subds. (a)-(b), 783.5, subd. (c)(2)].

DFG finds based on substantial evidence in the ITP application, the Mitigated Negative Declaration for the Lover's Lane Safety Improvement Project, the draft construction documents, the Biological Opinion prepared by the United States Fish and Wildlife Service, the results of a site visit and the administrative record of proceedings, that issuance of this ITP complies and is consistent with the criteria governing the issuance of ITPs pursuant to CESA:

- (1) Take of Covered Species as defined in this ITP will be incidental to the otherwise lawful activities covered under this ITP;
- (2) Impacts of the taking on Covered Species will be minimized and fully mitigated through the implementation of measures required by this ITP and as described in the MMRP. Measures include: (1) permanent habitat protection; (2) establishment of avoidance zones; (3) worker education; and (4) Monthly Compliance Reports. DFG evaluated factors including an assessment of the importance of the habitat in the Project Area, the extent to which the Covered Activities will impact the habitat, and DFG's estimate of the acreage required to provide for adequate compensation. Based on this evaluation, DFG determined that the protection and management in perpetuity of 12.9 acres of compensatory habitat that is contiguous with other protected Covered Species habitat and is of equal quality than the habitat being destroyed by the Project, along with the minimization, monitoring, reporting, and funding requirements of this ITP minimizes and fully mitigates the impacts of the taking caused by the Project;
- (3) The take avoidance and mitigation measures required pursuant to the conditions of this ITP and its attachments are roughly proportional in extent to the impacts of the taking authorized by this ITP;

- (4) The measures required by this ITP maintain Permittee's objectives to the greatest extent possible;
- (5) All required measures are capable of successful implementation;
- (6) This ITP is consistent with any regulations adopted pursuant to Fish and Game Code sections 2112 and 2114;
- (7) Permittee has ensured adequate funding to implement the measures required by this ITP as well as for monitoring compliance with, and the effectiveness of, those measures for the Project; and
- (8) Issuance of this ITP will not jeopardize the continued existence of the Covered Species based on the best scientific and other information reasonably available, and this finding includes consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of (1) known population trends; (2) known threats to the species; and (3) reasonably foreseeable impacts on the species from other related projects and activities. Moreover, DFG's finding is based, in part, on DFG's express authority to amend the terms and conditions of this ITP without concurrence of the Permittee as necessary to avoid jeopardy and as required by law.

Attachments:

FIGURE 1	Location Map
FIGURE 2	Project Vicinity/Limits
FIGURE 3	Impacts to CTS Habitat
ATTACHMENT 1	Mitigation Monitoring and Reporting Program
ATTACHMENT 2A, 2B	Habitat Management Lands Checklist; Proposed Lands for Acquisition Form
ATTACHMENT 3	Mitigation Payment Transmittal Form

ISSUED BY THE CALIFORNIA DEPARTMENT OF FISH AND GAME

on 6/11/12

Scott Wilson

Scott Wilson, Acting Regional Manager
BAY DELTA REGION

ACKNOWLEDGMENT

The undersigned: (1) warrants that he or she is acting as a duly authorized representative of the Permittee, (2) acknowledges receipt of this ITP, and (3) agrees on behalf of the Permittee to comply with all terms and conditions

By: *Carie S. Modera for Jeffrey G. Jensen*

Date: 6/22/12

Printed Name: CARIE S. MODERA

Title: *Senior Environmental Planner/
Acting Office Chief, Biological
Sciences & Permits*

Incidental Take Permit
No. 2081-2011-078-03

CALIFORNIA DEPARTMENT OF TRANSPORTATION
LOVER'S LANE SAFETY IMPROVEMENT PROJECT



State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5520
www.dfg.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



January 31, 2012

Fariba Zohoury
California Department of Transportation
111 Grand Avenue
Oakland, CA 94612

Subject: Notification of Lake or Streambed Alteration No. 1600-2011-0298-R3
State Route 152 Old Lake Road to Dunne Lane Improvement Project Impacting Ortega
Creek and Hostein Creek, Tributary to San Felipe Lake

Dear Applicant:

The Department had until November 16, 2011 to submit a draft Lake or Streambed Alteration Agreement ("Agreement") to you or inform you that an Agreement is not required. The Department did not meet that date. As a result, by law, you may now complete the project described in your notification without an Agreement.

Please note that pursuant to Fish and Game Code section 1602(a)(4)(D), if you proceed with this project, it must be the same as described and conducted in the same manner as specified in the notification and any modifications to that notification received by the Department in writing prior to November 16, 2011. This includes completing the project within the proposed term and seasonal work period and implementing all avoidance and mitigation measures to protect fish and wildlife resources specified in the notification. If the term proposed in your notification has expired, you will need to re-notify the Department before you may begin your project. Beginning or completing a project that differs in any way from the one described in the notification may constitute a violation of Fish and Game Code section 1602.

Also note that while you are entitled to complete the project without an Agreement, you are still responsible for complying with other applicable local, state, and federal laws. These include, but are not limited to, the state and federal Endangered Species Acts and Fish and Game Code sections 5650 (water pollution) and 5901 (fish passage).

Finally, if you decide to proceed with your project without an Agreement, you must have a copy of this letter and your notification with all attachments available at all times at the work site. If you have any questions regarding this matter, please contact Dave Johnston, Environmental Scientist, at (831) 464-6870 or djohnston@dfg.ca.gov.

Sincerely,

Dr. CJ Weightman

Liam Davis
Senior Environmental Scientist
Bay Delta Region

cc Monica Gan
Lieutenant Nores
Warden Quintal-Thomson
Dave Johnston

Revised

FOR DEPARTMENT USE ONLY				
Date Received	Amount Received	Amount Due	Date Complete	Notification No.
1/17/11	\$4,482.75	\$		1600-2011-0298-3



Alt 082-062108
 CA Dept of Transportation

STATE OF CALIFORNIA
 DEPARTMENT OF FISH AND GAME

Johnson
 Quetta Thomas
 Wiles



NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Fish & Game

Name	Fariba Zohoury	NOV 15 2011
Business/Agency	California Department of Transportation	Yountville
Street Address	111 Grand Avenue	
City, State, Zip	Oakland, CA 94612	
Telephone	(510) 286-7239	Fax (510) 622-5460
Email	fariba_zohoury@dot.ca.gov	

2. CONTACT PERSON (Complete only if different from applicant)

Name	Monica Gan	
Street Address	Same as applicant	
City, State, Zip		
Telephone	(510) 622-0795	Fax
Email	monica_gan@dot.ca.gov	

3. PROPERTY OWNER (Complete only if different from applicant)

Name	NA	
Street Address		
City, State, Zip		
Telephone		Fax
Email		

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name		State Route 152 Old Lake Rd. to Dunne Lane Safety Improvement Project		
B. Agreement Term Requested		<input checked="" type="checkbox"/> Regular (5 years or less) <input type="checkbox"/> Long-term (greater than 5 years)		
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (year)	Ending (year)	Start Date (month/day)	End Date (month/day)	
2012	2016	04/15	10/31	455.00

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.

A.	<input checked="" type="checkbox"/> Standard (Most construction projects, excluding the categories listed below)
B.	<input type="checkbox"/> Gravel/Sand/Rock Extraction (Attachment A) Mine I.D. Number: _____
C.	<input type="checkbox"/> Timber Harvesting (Attachment B) THP Number: _____
D.	<input type="checkbox"/> Water Diversion/Extraction/Impoundment (Attachment C) SWRCB Number: _____
E.	<input type="checkbox"/> Routine Maintenance (Attachment D)
F.	<input type="checkbox"/> DFG Fisheries Restoration Grant Program (FRGP) FRGP Contract Number: _____
G.	<input type="checkbox"/> Master
H.	<input type="checkbox"/> Master Timber Harvesting

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. **Note: The Department may not process this notification until the correct fee has been received.**

	A. Project	B. Project Cost	C. Project Fee
1	State Route 152 Old Lake Rd to Dunne Lane Safety Improvement Project	\$11,800,000.00	\$4,482.75
2			
3			
4			
5			
		D. Base Fee (if applicable)	
		E. TOTAL FEE ENCLOSED	

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

Yes (Provide the information below) No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

No Yes (Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.)

Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

8. PROJECT LOCATION

A. Address or description of project location. <i>(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)</i>				
The proposed project is located in Santa Clara County on SR 152, locally known as the Pacheco Pass Highway, between Old Lake Road (PM 16.2) and Dunne Lane, also known as San Felipe Lane (PM 19.58) (See attached Figure 1 and Figure 2). It is located between 8.5 to 9.5 miles east of Gilroy on Hwy. 152 with the eastern end of the proposed project located near the small town of San Felipe, while the western end is near San Felipe Lake, on Hwy. 152. The project occurs in the San Felipe, California USGS 7.5-minute quadrangle, in Township 11 South, Range 5 East.				
<input type="checkbox"/> Continued on additional page(s)				
B. River, stream, or lake affected by the project.		Ortega Creek, Holstein Creek		
C. What water body is the river, stream, or lake tributary to?			San Felipe Lake	
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?			<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
E. County Santa Clara				
F. USGS 7.5 Minute Quad Map Name		G. Township	H. Range	I. Section
San Felipe		11S	5 E	NA
<input type="checkbox"/> Continued on additional page(s)				
K. Meridian (check one)		<input type="checkbox"/> Humboldt <input checked="" type="checkbox"/> Mt. Diablo <input type="checkbox"/> San Bernardino		
L. Assessor's Parcel Number(s)				
57659, 56960, 56964, 60737, 61998, 62000, 62001, 62002, 62005, 62010, 62012, 62013, 62014, 62015, 62355				
<input type="checkbox"/> Continued on additional page(s)				
M. Coordinates (If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)				
Latitude/Longitude		Latitude: 36.975945		Longitude: -121.435853
		<input type="checkbox"/> Degrees/Minutes/Seconds	<input checked="" type="checkbox"/> Decimal Degrees	<input type="checkbox"/> Decimal Minutes
UTM		Easting:	Northing:	<input checked="" type="checkbox"/> Zone 10 <input type="checkbox"/> Zone 11
Datum used for Latitude/Longitude or UTM		<input type="checkbox"/> NAD 27 <input checked="" type="checkbox"/> NAD 83 or WGS 84		

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bank stabilization – rip-rap/retaining wall/gabion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat dock/pier	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boat ramp	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bridge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Channel clearing/vegetation management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Culvert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Debris basin	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dam	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diversion structure – weir or pump intake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filling of wetland, river, stream, or lake	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical survey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Habitat enhancement – revegetation/mitigation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Levee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low water crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Road/trail	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sediment removal – pond, stream, or marina	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Storm drain outfall structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Temporary stream crossing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Utility crossing : Horizontal Directional Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Jack/bore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open trench	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

The proposed project is located in Santa Clara County on State Route (SR) 152, locally known as the Pacheco Pass Highway, between Old Lake Road (post mile (PM) 16.2) and San Felipe Lane (PM R19.5). To address the high rate of cross-centerline accidents, this project proposes to improve sight distance, upgrade shoulders to standard widths, improve pavement friction, and provide left-turn channelization in the westbound direction at the intersection of SR 152 and Lovers Lane. The existing alignment is a two-lane highway with 12-ft. lanes in both directions and shoulders ranging from 1 to 6 ft. wide within the project limits. There is an existing 2-ft.-wide soft median barrier. In addition to left-turn channelization, the proposed new alignment will provide standard 8-ft.-wide shoulders on both sides of the highway from PM R18.5 to PM R19.5, improve pavement friction and add a rolled shoulder rumble strip to the outside shoulders. The project will include horizontal curve realignment and will conform to existing driveways to meet the new shoulder grade. The existing access road at the Lovers Lane will be realigned to accommodate the project improvements.

Please see attached supplemental document.

Continued on additional page(s)

B. Specify the equipment and machinery that will be used to complete the project.

The equipment needed for the left turn pocket construction, shoulder widening, soil nail walls construction, drainage system construction, pavement friction and rumble strip construction work includes: blade, backhoe, paver, roller, spreader, drilling machine, pump, forklift, crane, water truck and pick-up truck

Continued on additional page(s)

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).

Yes No (Skip to box 11)

D. Will the proposed project require work in the wetted portion of the channel?

Yes (Enclose a plan to divert water around work site)

No

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

Segment 2 of the project is within the Ortega Creek Watershed and has two intermittent drainage features that pass through it: Holstein Creek and Ortega Creek. Holstein Creek drains west from the hills north of Segment 2, and passes under SR 152 at Holstein Creek Bridge to join Ortega Creek outside of the BSA. Ortega Creek has its source just east of the BSA, on the south side of SR 152.

Please see attached supplement document.

Continued on additional page(s)

B. Will the project affect any vegetation? Yes (Complete the tables below) No

Vegetation Type	Temporary Impact	Permanent Impact
Please see attached supplemental document	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
Please see attached supplemental document		

Continued on additional page(s)

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

Yes (List each species and/or describe the habitat below) No Unknown

Please see attached supplemental document

Continued on additional page(s)

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

Biological Assessment (Caltrans 2009), Natural Environment Study (Caltrans 2009)
Biological Opinion (March 2010)- Biological Opinion Amendment (April 2011)

Continued on additional page(s)

E. Has a biological study been completed for the project site?

Yes (Enclose the biological study) No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

Yes (Enclose the hydrological study) No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

12. MEASURES TO PROTECT FISH, WILDLIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

Please see attached supplemental document...

Continued on additional page(s)

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

Please see attached supplemental document...

Continued on additional page(s)

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

Please see attached supplemental document...

Continued on additional page(s)

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

- A. RWQCB 401 Clean Water Certification, USACE 404 Nationwide Permit Applied Issued
- B. Incidental Take Permit Applied Issued
- C. USFWS Biological Opinion Applied Issued
- D. Unknown whether local, state, or federal permit is needed for the project. (Check each box that applies)

Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

16. DIGITAL FORMAT

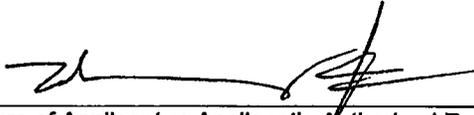
Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

Yes (Please enclose the information via digital media with the completed notification form)

No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.



Signature of Applicant or Applicant's Authorized Representative

8/4/11

Date

Fariba Zouhoury

Print Name



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET, 16TH FLOOR
SAN FRANCISCO, CALIFORNIA 94103-1398

APR 10 2012

Regulatory Division

SUBJECT: File Number 2009-00049S

Mr. Jeffrey Jensen
California Department of Transportation
111 Grand Avenue
P.O. Box 23660
Oakland, California 94623

Dear Mr. Jensen:

This correspondence is in reference to your submittal of March 28, 2012, concerning Department of the Army (DA) authorization to implement safety improvements located along State Route 152 (aka Pacheco Pass Highway) between Old Lake Road (post mile 16.2) and Dunne Lane (post mile 19.5) in Santa Clara County, California (36.975945, -121.435853). Work within U.S. Army Corps of Engineers' (Corps) jurisdiction would include shoulder widening and the addition of a left-turn pocket at Lover's Lane. Shoulder widening will result in the need to extend 10 culverts, add four new culverts, add two culverts within private driveways north of SR 152, and replace five new culverts. Retaining walls (soil nail walls and gabion walls) will be constructed to stabilize hill slopes adjacent to the roadway. Work within Corps jurisdiction will result in permanent effects to 0.008 acre and temporary effects to 0.206 acre of jurisdictional features including Other Waters of the U.S. and wetlands.

Section 404 of the Clean Water Act generally regulates the discharge of dredged or fill material below the plane of ordinary high water in non-tidal waters of the United States, below the high tide line in tidal waters of the United States, and within the lateral extent of wetlands adjacent to these waters. Section 10 of the Rivers and Harbors Act generally regulates construction of structures and work, including excavation, dredging, and discharges of dredged or fill material, occurring below the plane of mean high water in tidal waters of the United States; in former diked baylands currently below mean high water; outside the limits of mean high water but affecting the navigable capacity of tidal waters; or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States. Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide; and/or all waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce. An authorized jurisdictional determination was completed and dated certified November 28, 2011.

Based on a review of the information in your submittal, the project qualifies for authorization under Department of the Army Nationwide Permit (NWP) 14 for *Linear Transportation Projects*, Fed. Reg. 10, February 21, 2012, pursuant to Section 404 of the Clean Water Act (CWA) of 1972, as amended, 33 U.S.C. § 1344 *et seq.* The project must be in

compliance with the terms of the NWP, the general conditions of the Nationwide Permit Program, and the San Francisco District regional conditions cited in enclosure 1. You must also be in compliance with any special conditions specified in this letter for the NWP authorization to remain valid. Non-compliance with any term or condition could result in the revocation of the NWP authorization for your project, thereby requiring you to obtain an Individual Permit from the Corps. This NWP authorization does not obviate the need to obtain other State or local approvals required by law. All work shall be completed in accordance with the plans and drawings titled "USACE File #2009-00049S, SCL 152 Safety Improvement Project, Santa Carla County, Old Lake Road to Dunne Lane California Department of Transportation PM 16.2/16.5 and PM 18.5/19.5, November 28, 2011, Figures 1 to 8" provided as enclosure 2.

This verification will remain valid for two years from the date of this letter. Activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon an NWP will remain authorized provided the activity is completed within 12 months of the date of an NWP's expiration, modification, or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend, or revoke the authorization in accordance with 33 CFR 330.4(e) and 33 CFR 330.5 (c) or (d). The Chief of Engineers will periodically review NWPs and their conditions and will decide to either modify, reissue, or revoke the permits. If an NWP is not modified or reissued within five years of its effective date, it automatically expires and becomes null and void. It is incumbent upon you to remain informed of any changes to the NWPs. Changes to the NWPs would be announced by Public Notice posted on our website (<http://www.spn.usace.army.mil/regulatory/index.html>). Upon completion of the project and all associated mitigation requirements, you shall sign and return the Certification of Compliance, enclosure 3, verifying that you have complied with the terms and conditions of the permit.

This authorization will not be effective until you have obtained a Section 401 water quality certification from the Central Coast Region, Regional Water Quality Control Board. If the RWQCB fails to act on a valid request for certification within two (2) months after receipt of a complete application, the Corps will presume a waiver of water quality certification has been obtained. You shall submit a copy of the certification to the Corps prior to the commencement of work.

General Condition 17 stipulates that project authorization under a NWP does not allow for the incidental take of any federally-listed species in the absences of a biological opinion (BO) with incidental take provisions. As the principal federal lead agency for this project, Caltrans initiated consultation with the United States Fish and Wildlife Service (USFWS) to address project related impacts to list species, pursuant to Section 7(a) of the Endangered Species Act of 1973, as amended (16 U.S.C. Section 1531 *et seq.*). By letter of March 3, 2010, USFWS issued a BO (81420-2088-F-1995) cited in enclosure 4, with an incidental take statement for California red-legged frog and California tiger salamander. Within the same BO the USFWS determined

that the project was not likely to adversely affect least-bell's Vireo and San Joaquin kit fox and designated critical habitat for these species.

In order to ensure compliance with this NWP authorization, the following special conditions shall be implemented:

1. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
2. All work occurring below the plane of ordinary high water shall be confined to the low-flow period, during summer months to avoid excessive sedimentation of creek waters.
3. All construction work shall incorporate appropriate best management practices, including stabilizing and seeding exposed upland slopes, to control and minimize bank erosion, sediment input, and turbidity in the affected creek.
4. Authorized discharges of fill material occurring below ordinary high water shall consist solely of sand, gravel, cobble, boulder, rock or other inert riprap materials that are free of toxic pollutants.
5. Areas of temporary vegetation removal or bare ground shall be seeded with native plant seed mix following project completion or after the completion of each portion of dry season construction. Plantings will occur in the fall and winter, either just prior to or during the beginning of the rainy season.
6. To remain exempt from the prohibitions of Section 9 of the Endangered Species Act, the non-discretionary Terms and Conditions for incidental take of federally-listed California red-legged frog and California tiger salamander shall be fully implemented as stipulated in the Biological Opinion entitled, "*Biological Opinion on the Effects of the Proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project Santa Clara County California (Caltrans EA 2A4400) on the Endangered Least-Bell's Vireo, Threatened California Red-Legged Frog, Threatened California Tiger Salamander, Central Valley Distinct Population Segment, Endangered San Joaquin Kit Fox, and Designated Critical Habitat for the California Tiger Salamander, and Conference Report for Proposed Critical Habitat for the California Red-Legged Frog*" (pages 1 to 50) dated March 3, 2010. Project authorization under the NWP is conditional upon compliance with the mandatory

terms and conditions associated with incidental take. Failure to comply with the terms and conditions for incidental take, where a take of a federally-listed species occurs, would constitute an unauthorized take and non-compliance with the NWP authorization for your project. The USFWS is, however, the authoritative federal agency for determining compliance with the incidental take statement and for initiating appropriate enforcement actions or penalties under the Endangered Species Act.

7. Avoidance measures established to ensure protection of Least-Bell's Vireo and San Joaquin Kit Fox shall be fully implemented as stipulated in the USFWS letter and BO 81420-2008-F-1995 (pages 1-50) dated March 2, 2010.

You may refer any questions on this matter to Paula Gill of my Regulatory staff by telephone at 415-503-6776 or by e-mail at Paula.C.Gill@usace.army.mil. All correspondence should be addressed to the Regulatory Division, South Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner, while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website: <http://www.spn.usace.army.mil/regulatory/>.

Sincerely,



Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copies furnished (w/o enclosures):

US EPA, San Francisco, CA
US FWS, Sacramento, CA
CA DFG, Monterey, CA
CA RWQCB, San Luis Obispo, CA

Enclosure 1:

Nationwide Permit 14 - Linear Transportation Projects

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate. This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 31.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. **Navigation.** (a) No activity may cause more than a minimal adverse effect on navigation. (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.
2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
16. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
18. **Endangered Species.** (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed. (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs. (e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills

or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. (f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the U.S. Fish and Wildlife Service's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied. (b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary. (c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed. (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps. (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment. (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWP's 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters. (b) For NWP's 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWP's only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332. (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment. (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered. (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided. (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWP's. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWP's.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. **Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
- (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(f)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either: (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information: (1) Name, address and telephone numbers of the prospective permittee; (2) Location of the proposed project; (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans); (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate; (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan. (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level. (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will

consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5. (3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act. (4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

San Francisco District's Regional Conditions

A. General Regional Conditions that apply to all NWPs in the Sacramento, San Francisco, and Los Angeles Districts:

1. When pre-construction notification (PCN) is required, the permittee shall notify the U.S. Army Corps of Engineers, San Francisco District (Corps) in accordance with General Condition 31 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. In addition, the PCN shall include:
 - a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;
 - b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity, as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for activities located within the boundaries of the Los Angeles District shall comply with the September 15, 2010 Special Public Notice: *Map and Drawing Standards for the Los Angeles District Regulatory Division*, (available on the Los Angeles District Regulatory Division website at www.spl.usace.army.mil/regulatory/); and
 - c. Numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the site, and all waters of the U.S. proposed to be avoided on and immediately adjacent to the activities site. The compass angle and position of each photograph shall be identified on the plan-view drawing(s) required in subpart b of this Regional Condition.
2. The permittee shall submit a PCN, in accordance with General Condition 31, For all activities located in areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council (i.e., all tidally influenced areas - Federal Register dated March 12, 2007, 72 C.F.R. 11,092, in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. Examples of EFH habitat assessments can be found at: <http://www.swr.noaa.gov/efh.htm>.
3. For activities in which the Corps designates another Federal agency as the lead for compliance with Section 7 of the Endangered Species Act (ESA) of 1973 as amended, 16 U.S.C. §§ 1531-1544, Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (EFH), 16 U.S.C. § 1855(b)(4)(B) and/or Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, 16 U.S.C. §§ 470-470h, the lead Federal agency shall provide all relevant documentation to the appropriate Corps demonstrating any previous consultation efforts, as it pertains to the Corps Regulatory permit area (for Section 7 and EFH compliance) and the Corps Regulatory area of potential effect (APE) (for Section 106 compliance). For activities requiring a PCN, this information shall be submitted with the PCN. If the Corps does not designate another Federal agency as the lead for ESA, EFH and/or NHPA, the Corps will initiate consultation for compliance, as appropriate.
4. For all activities in waters of the U.S. that are suitable habitat for Federally-listed fish species, the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed unless determined to be impracticable by the Corps.

5. The permittee shall complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity, except when specifically determined to be impracticable by the Corps. When mitigation involves use of a mitigation bank or in-lieu fee program, the permittee shall submit proof of payment to the Corps prior to commencement of construction of the authorized activity.
6. Any requests to waive the 300 linear foot limitation for intermittent and ephemeral streams for NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51 and 52, or to waive the 500 linear foot limitation along the bank for NWP 13, must include the following:
 - a. A narrative description of the stream. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the waterbody and characteristics observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the adjacent areas (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information;
 - b. An analysis of the proposed impacts to the waterbody, in accordance with General Condition 31;
 - c. Measures taken to avoid and minimize losses to waters of the U.S., including other methods of constructing the proposed activity(s); and
 - d. A compensatory mitigation plan describing how the unavoidable losses are proposed to be offset, in accordance with 33 CFR 332.

B. General Regional Conditions that apply to all NWPs in the San Francisco District:

1. Notification to the Corps (in accordance with General Condition No. 31) is required for any activity permitted by NWP if it will take place in waters or wetlands of the U.S. that are within the **San Francisco Bay diked baylands** (see figure 1) (undeveloped areas currently behind levees that are within the historic margin of the Bay. Diked historic baylands are those areas on the Nichols and Wright map below the 5-foot contour line, National Geodetic Vertical Datum (NGVD) (see Nichols, D.R., and N. A. Wright. 1971. Preliminary map of historic margins of marshland, San Francisco Bay, California. U.S. Geological Survey Open File Map)). The notification shall explain how avoidance and minimization of losses of waters or wetlands are taken into consideration to the maximum extent practicable (see General Condition 23).
2. Notification to the Corps (in accordance with General Condition No. 31) is required for any activity permitted by NWP if it will take place in waters or wetlands of the U.S. that are within the **Santa Rosa Plain** (see figure 2). The notification will explain how avoidance and minimization of losses of waters or wetlands are taken into consideration to the maximum extent practicable in accordance with General Condition No. 23.
3. Notification to the Corps (in accordance with General Condition No. 31), including a compensatory mitigation plan, habitat assessment, and extent of proposed-project impacts to Eelgrass Beds are required for any activity permitted by NWP if it will take place within or adjacent to **Eelgrass Beds**.

14. LINEAR TRANSPORTATION PROJECTS:

1. Notification to the Corps (in accordance with General Condition No. 30) is required for all projects filling greater than 300 linear feet of channel. For projects involving greater than 300 linear feet of bank stabilization, the project proponent shall address the effect of the bank stabilization on the stability of the opposite side of the streambank (if it is not part of the stabilization activity), and on adjacent property upstream and downstream of the activity.

2. This permit does not authorize construction of new airport runways and taxiways.
3. If this NWP has been used to authorize previous project segments within the same linear transportation project, justification must be provided demonstrating that the cumulative impacts of the proposed and previously authorized project segments do not result in more than minimal impacts to the aquatic system.
4. To the maximum extent practicable, any new or additional bank stabilization required for the crossing must incorporate structures or modifications beneficial to fish and wildlife (e.g., soil bioengineering or biotechnical design, root wads, large woody debris, etc.). Where these structures or modifications are not used, the applicant shall demonstrate why they were not considered practicable. Bottomless and embedded culverts are encouraged over traditional culvert stream crossings.

Encl. 2

DIST. COUNTY	ROUTE	POST MILEAGE	SHEET NO.	TOTAL SHEETS
04 SCI	152	16.27/16.5	11	11
REGISTERED CIVIL ENGINEER	DATE	APPROVED FOR THE STATE OF CALIFORNIA		
<i>[Signature]</i>	09-23-19			
PLANS APPROVAL DATE: 09-23-19 BY DATE OF REVIEW OF THE OFFICE: 09-23-19 THE ASSAULT TO COMPLETION OF PLANNED WORKS IS NOT GUARANTEED.				

LEGEND:

PAVEMENT STRUCTURAL SECTION NUMBER

CURVE DATA NUMBER

OVERLAY WITH HOT ASPHALT MIX (OPEN GRADED)

REMOVE BASE AND SURFACING

DRIVEWAY CONFORM

NOTE:

SEE STAGE CONSTRUCTION AND TRAFFIC HANDLING PLANS FOR ENVIRONMENTALLY SENSITIVE AREAS.

ABBREVIATIONS:

AMA ARCHAEOLOGICAL MONITORING AREA

DE DRAINAGE EASEMENT

SE SLOPE EASEMENT

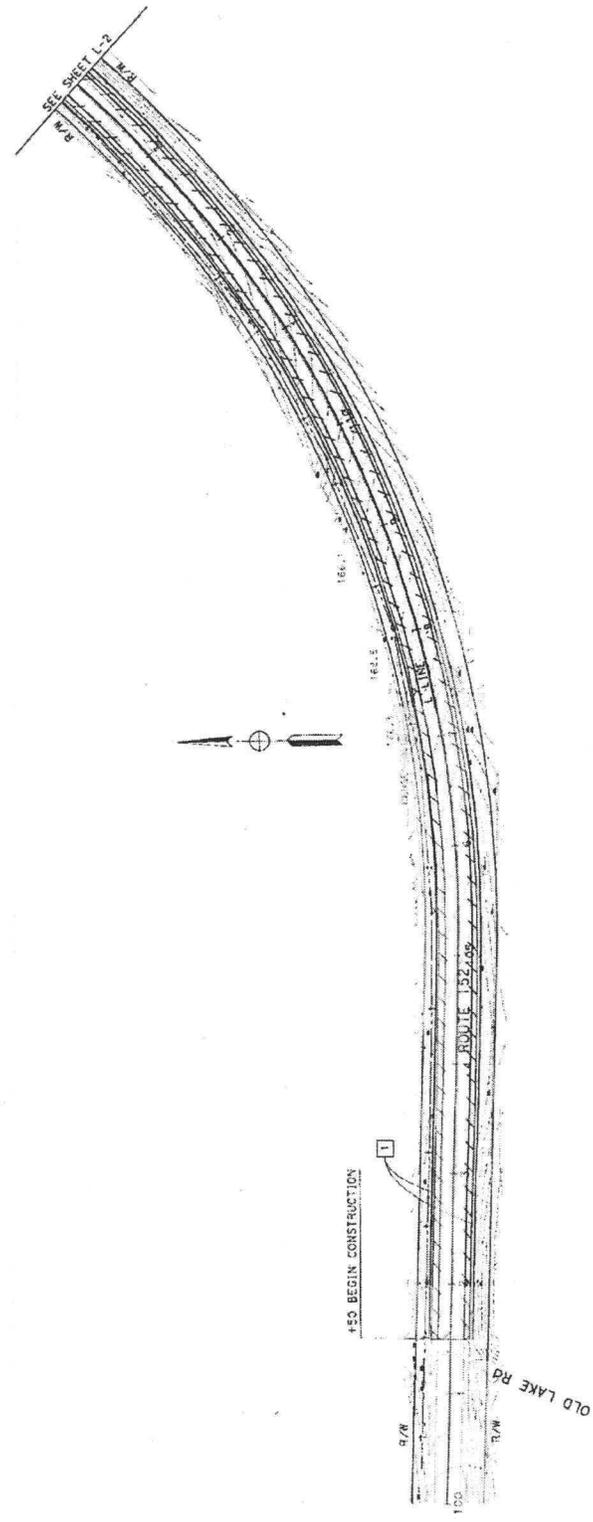
SNM SOIL NAIL WALL EASEMENT

TCE TEMPORARY CONSTRUCT EASEMENT

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	MOHTEZA AZIMI	CHECKED BY	ALMED MAHMOUD	REVISOR BY	AR	DATE REVISED	9/22/17
FUNCTIONAL SURVEYOR				ALMED MAHMOUD	DESIGNED BY	AR		
				ALMED MAHMOUD	DATE REVISED	9/22/17		



SCALE: 1" = 50'

PROJECT NUMBER: 5-49-15E

UNIT: FT/IN

DATE PRINTED: 9/22/17

PROJECT NO: 152.009

PROJECT NAME: ROUTE 152.009

PROJECT LOCATION: CALIFORNIA COUNTY, CALIFORNIA

PROJECT OWNER: CALIFORNIA COUNTY, CALIFORNIA

PROJECT ENGINEER: MOHTEZA AZIMI

PROJECT DATE: 09/23/19

LAYOUT

SCALE 1" = 50'

L-1

PROJECT NUMBER 5-49-15E

RELATIVE NUMBER 152.009

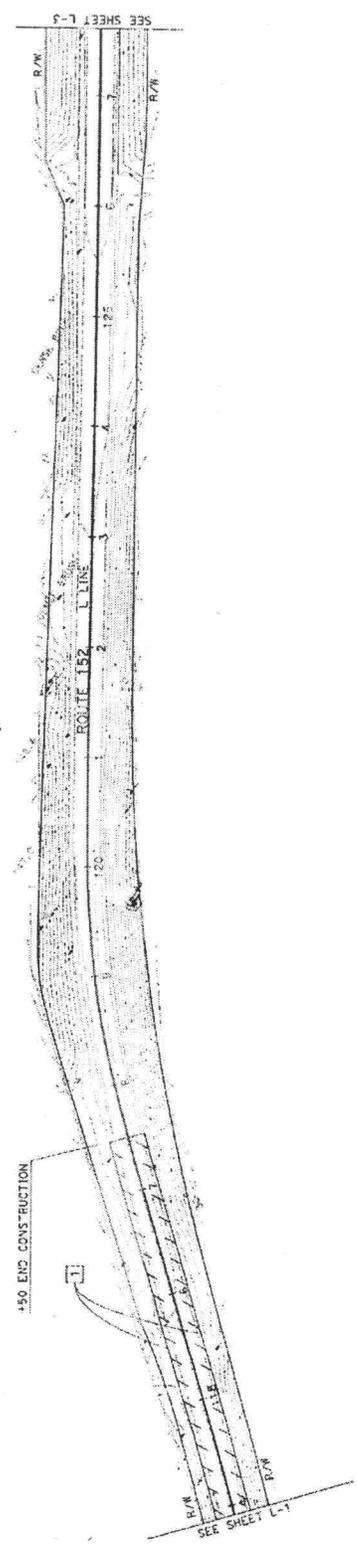
REVISION 152.009

STATE COUNTY DISTRICT SHEET NO. SHEETS
 DISTRICT NO. PROJECT NO. SHEETS
 DISTRICT NO. PROJECT NO. SHEETS
 DISTRICT NO. PROJECT NO. SHEETS

REGISTERED CIVIL ENGINEER DATE
 ENGINEER'S NAME
 ENGINEER'S NO.
 ENGINEER'S EXPIRES

PLANS APPROVAL DATE
 APPROVAL NO.
 APPROVAL EXPIRES

NOTE:
 FOR ACCURATE RIGHT-OF-WAY DATA, CONTACT
 RIGHT-OF-WAY ENGINEERS AT THE DISTRICT OFFICE.



SCALE: 1" = 50'
 LAYOUT
 PROJECT NUMBER 3 PHASE
 UNIT 5106

L-2

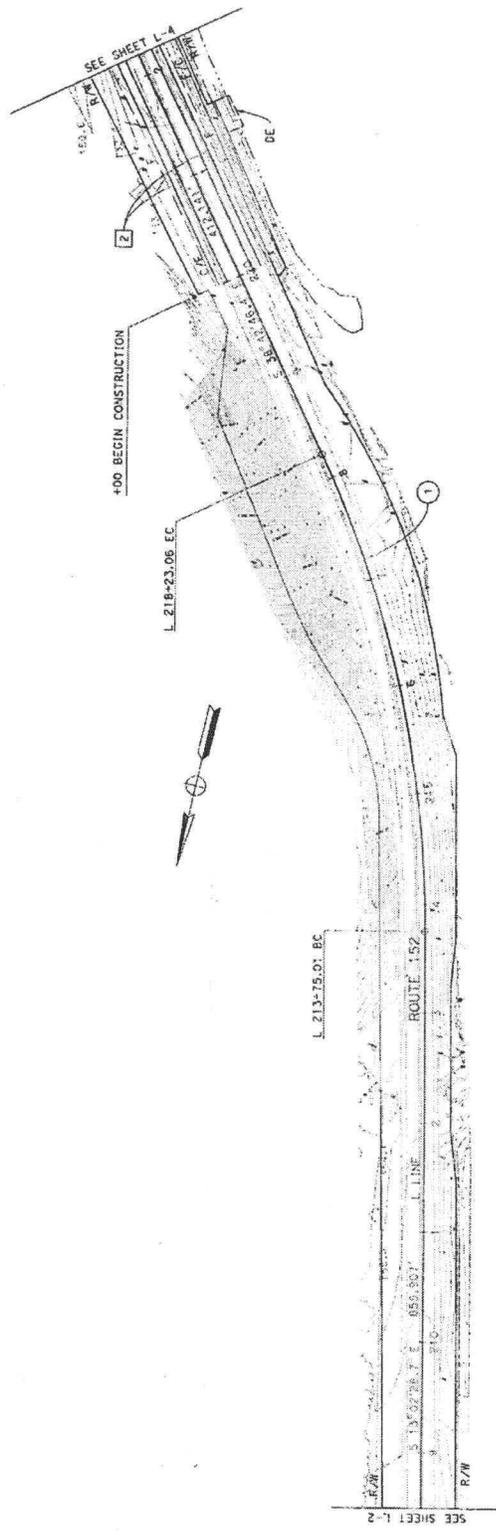
DESIGN	DATE REVISION	REVISION BY	DATE REVISION	REVISION BY
10/17/11	AR	AMWED BAHID	10/17/11	AR
10/17/11	AR	CALVIN FRAY	10/17/11	AR
10/17/11	AR	AMWED BAHID	10/17/11	AR
10/17/11	AR	CALVIN FRAY	10/17/11	AR
10/17/11	AR	AMWED BAHID	10/17/11	AR

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 CALIFORNIA HIGHWAYS
 PROJECT NUMBER 3 PHASE
 UNIT 5106
 SHEET NO. 152 OF 152
 DATE 10/17/11
 DRAWN BY AMWED BAHID
 CHECKED BY CALVIN FRAY
 DATE 10/17/11
 SCALE 1" = 50'
 LAYOUT
 PROJECT NUMBER 3 PHASE
 UNIT 5106
 SHEET NO. 152 OF 152
 DATE 10/17/11
 DRAWN BY AMWED BAHID
 CHECKED BY CALVIN FRAY
 DATE 10/17/11

NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA						
NO.	R	Δ	T	L	N	E
1	1000'	25°40'18"	227.85'	448.05'	18°55'19.59"	6288819.17'

DIST. COUNTY	ROUTE	DATE	SHEET NO.
04 SCI	152	18/27/16	1
REGISTERED CIVIL ENGINEER		DATE	NO. OF SHEETS
Zhi Zhi		04/23/17	1
PLANS APPROVAL DATE			
04/23/17			
BY: [Signature]			
FOR THE DISTRICT OFFICE OF THE DISTRICT ENGINEER			
CONTRACT NO. 152-00000-01			



DESIGNED BY: [Name]
CHECKED BY: [Name]
DATE: [Date]

LAYOUT
SCALE: 1" = 50'

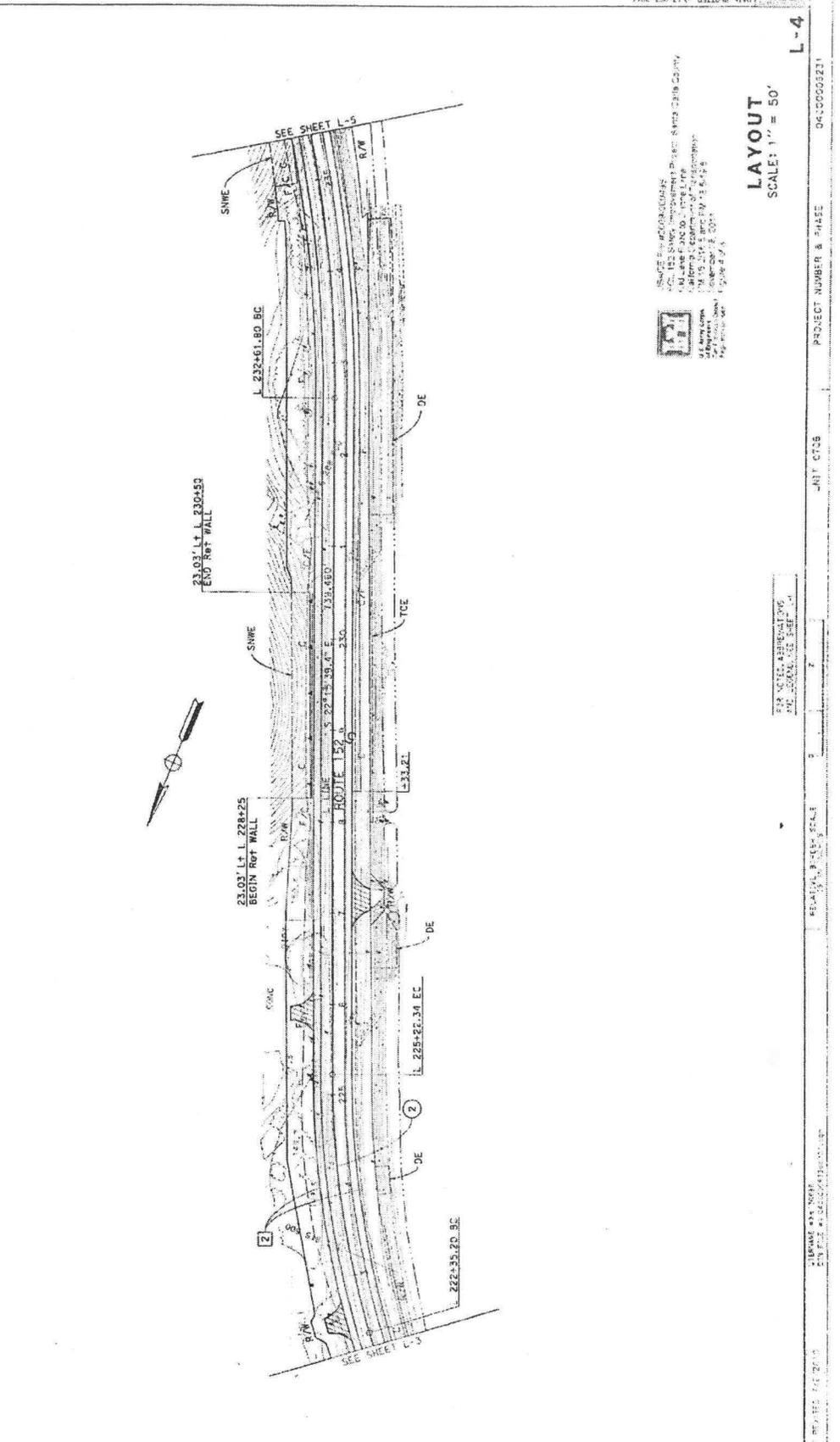
L-3

STATE OF CALIFORNIA	DEPARTMENT OF TRANSPORTATION	DESIGN
PROJECT NO. 152-00000-01	SUBPROJECT SUPERVISION	MONITOR A/J/M
DESIGNED BY	CHECKED BY	DATE REVIEWED
AMAD RAHID	CALVIN TRAN	
REVIEWED BY	DATE REVIEWED	

DIST. COUNTY ROUTE POST MILEAGE SHEET TOTAL
 04 SC 152 R 18.5/219.5
 REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL JANE
 STATE OF CALIFORNIA
 REGISTERED CIVIL ENGINEER
 NO. 11110
 EXPIRES 12-31-12
 REGISTERED CIVIL ENGINEER
 NO. 11110
 EXPIRES 12-31-12

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

DESIGNED BY	AMROD RAYHO	DATE REVISION	10/17/11
CHECKED BY	CAVIN TRAN	DATE REVISION	
DESIGNED BY	MORTZA AZIZI	DATE REVISION	
CHECKED BY		DATE REVISION	



ENGINEER
 MORTZA AZIZI
 1715 214th Ave SW
 Everett, WA 98201
 (206) 835-1001
 (206) 835-1002

LAYOUT
 SCALE: 1" = 50'

PROJECT NUMBER & NAME: 0430000231
 SHEET NUMBER: 7
 TOTAL SHEETS: 7
 DATE: 10/17/11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 FUNCTIONAL SUPERVISION: MORTZA AZIZI
 DESIGN: AMROD RAYHO
 DATE REVISION: 10/17/11

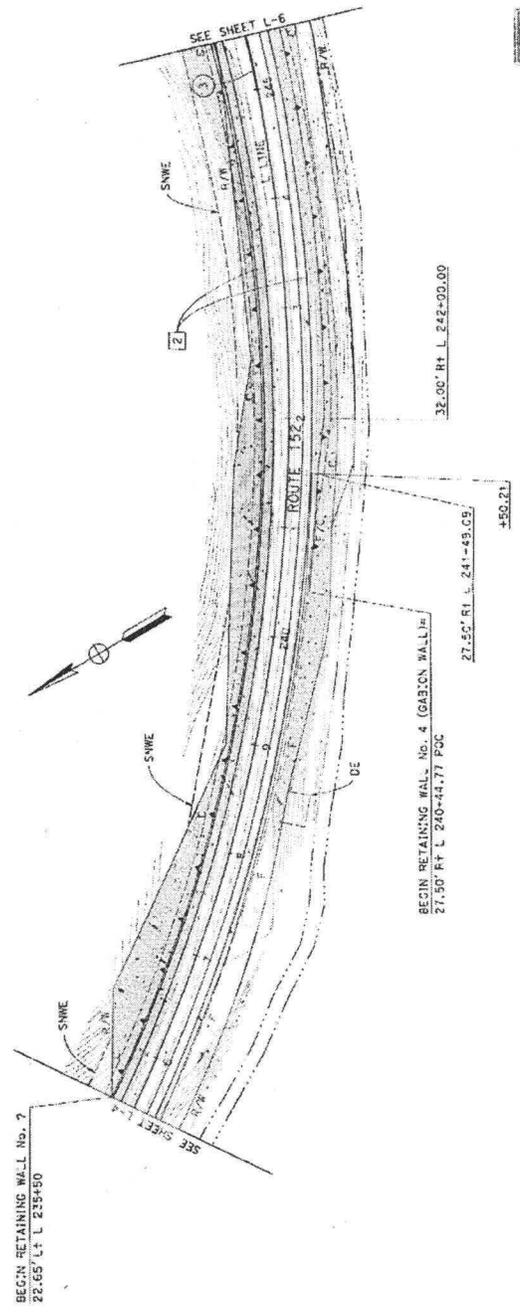
DIST. COUNTY ROUTE 152 RIB. 3/21/95
 REGISTERED CIVIL ENGINEER DATE
 PLANE APPROVAL DATE
 THE STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 SAN JOSE OFFICE
 1000 CALIFORNIA STREET
 SAN JOSE, CALIF. 95128

CURVE DATA

No.	R	Δ	T	L	N	E
③	1460'	92°58'04"	1290.96'	2114.17'	1815194.83	6288973.13

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SURVEYOR	MORTEZA AZIMI	CHECKED BY	CALVIN TRAN	DATE REVISION	9/22/11
		DESIGNED BY	AHMED RAHID	REVISION	AR		



SCALE: 1" = 50'
 L-5
 PROJECT NUMBER & PHASE
 0400000231

LAYOUT
 SCALE: 1" = 50'

FOR MORE INFORMATION
 CONTACT THE ENGINEER

PROJECT NUMBER & PHASE
 0400000231

STATE OF CALIFORNIA	DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SURVEYOR	MONTAZA AZIMI	CHECKED BY	CALVIN TRAN	DATE REVISED	9/22/11
			DESIGNED BY	MARCO RAYNO	REVISED BY	AR		

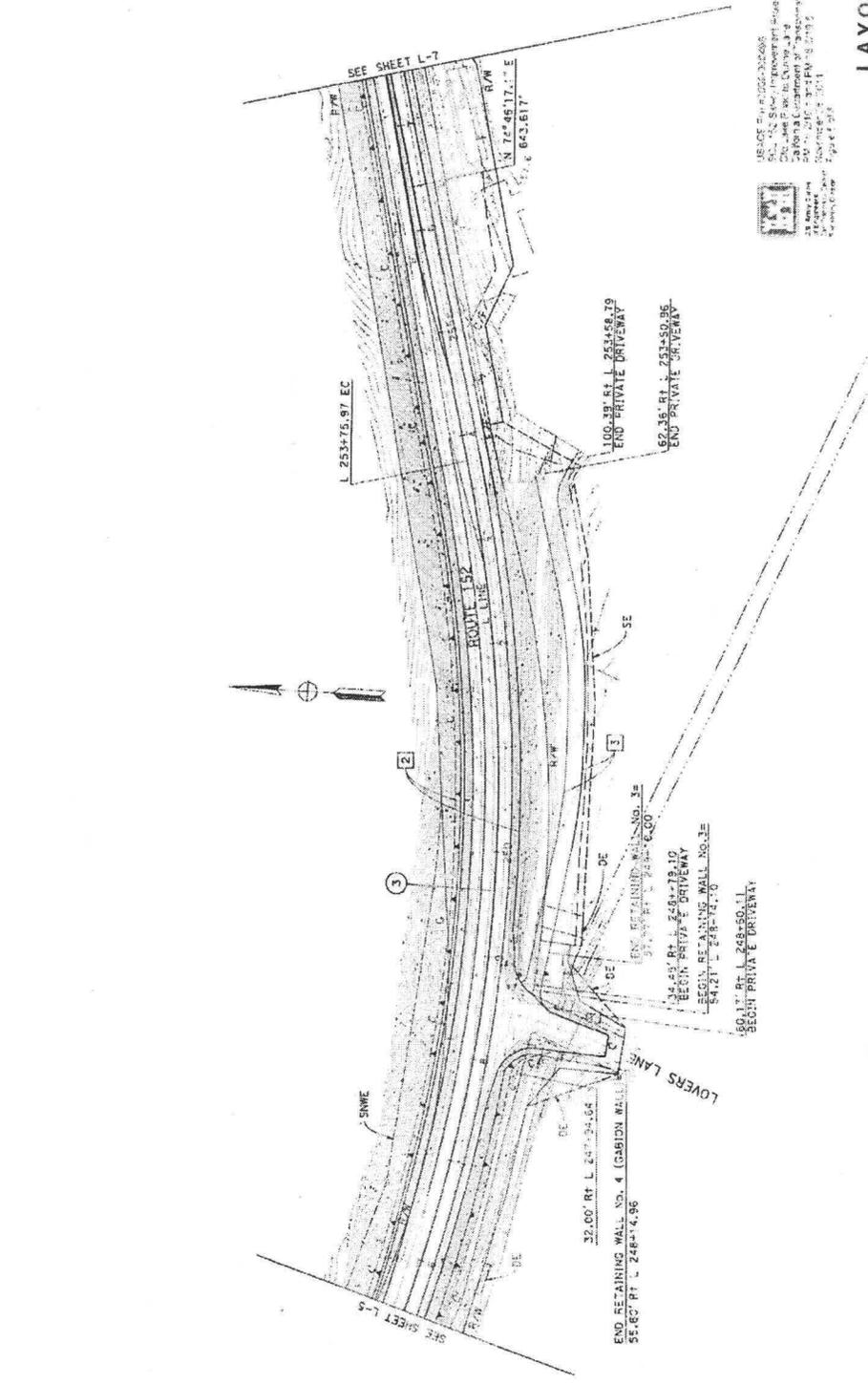
NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA

No.	R	Δ	T	L	N	E
①	1460'	82°59'04"	1290.96'	2114.17'	1815194.83'	6286873.13'

STATE COUNTY	ROUTE	POST MILES	SHEET
04	152	15.2	15
REGISTERED CIVIL ENGINEER	DATE	APP. NO.	EXPIRES
APPROVED	10/15/11	15000	10/15/12

FOR STATE OF CALIFORNIA
OFFICE OF THE REGISTERED PROFESSIONAL ENGINEERS
CONTRACTS AND PERMITS DIVISION



LAYOUT
SCALE: 1" = 50'

L-6

PROJECT NUMBER 87-15F

UNIT 0735

FOR STATE SURVEYING AND RECORDS

DATE OF SURVEY

DATE OF REVISION

DATE OF REVISION

DATE OF REVISION

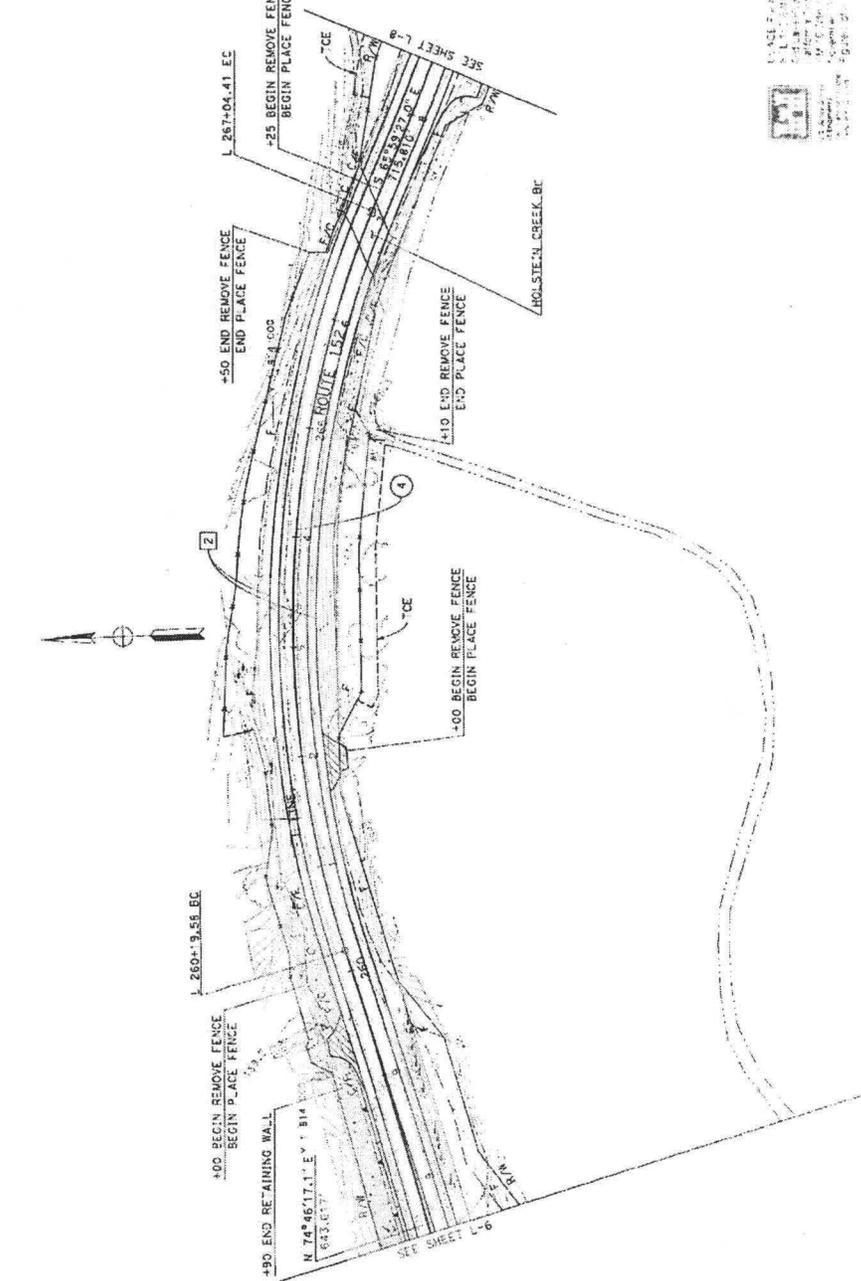
DISTRICT COUNTY ROUTE
 04 SCI '52
 16.27/16.5
 18.5/219.5
 REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL DATE
 PROJECT NO. 7888
 DATE 02-21-13
 PROJECT NAME: STATE ROUTE 162
 COUNTY OF SAN DIEGO

CURVE DATA

NO.	R	Δ	T	L	N	E
1	1000'	39°14'5"	356.46'	684.03'	1672990.27'	6291140.32'

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 SURVEYOR OF THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	WORTH AZUVA	CHECKED BY	CAVIN TRAN	DATE REVIEWED	9/22/11
		CALCULATOR		DESIGNED BY	ARMED RAHMD	REVIEWED BY	AR



LAYOUT
 SCALE: 1" = 50'

L-7

PROJECT NUMBER & PHASE

UNIT SIZE

SCALE: 1" = 50'

DATE: 02/21/13

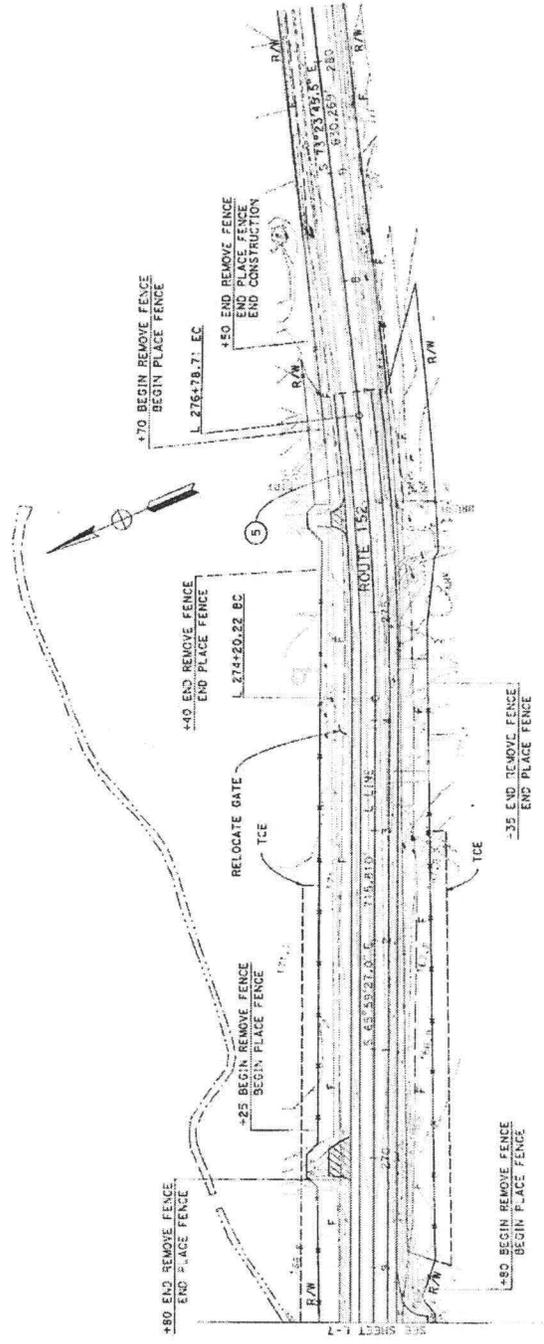
PROJECT NUMBER & PHASE

DIST. COUNTY ROUTE TOTAL PROJECT SHEET TOTAL
 04 SCI 152 818.5/119.5
 9/22/11
 REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL DATE
 THE DATE OF CHANGING OR THE EXTENSION OF THE CONTRACT SHALL BE THE DATE OF THE LAST REVISION TO THE CONTRACT.

CURVE DATA

NO.	R	Δ	T	L	N	E
5	2000'	7°22'19"	129.42'	288.48'	1815439.44'	529304.84'

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SCALE: 1" = 50'
 L-8
 PROJECT NUMBER & PHASE
 UNIT PRICE
 3-000000023

DESIGNED BY	APPROVED BY	DATE IN FIELD	DATE IN FIELD
DESIGNED BY	APPROVED BY	DATE IN FIELD	DATE IN FIELD
DESIGNED BY	APPROVED BY	DATE IN FIELD	DATE IN FIELD
DESIGNED BY	APPROVED BY	DATE IN FIELD	DATE IN FIELD

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 NORTON AZIMI
 CHECKED BY
 CALVIN TRAN
 DATE IN FIELD 9/22/11
 APPROVED BY
 AR
 DATE IN FIELD 9/22/11
 PROJECT NUMBER & PHASE
 UNIT PRICE
 3-000000023

Enclosure 3:

Permittee: Caltrans, Mr. Jeffery Jensen

File Number: 2009-00049S

**Certification of Compliance
for
Nationwide Permit**

"I hereby certify that the work authorized by the above referenced File Number and all required mitigation have been completed in accordance with the terms and conditions of this Nationwide Permit authorization."

(Permittee)

(Date)

Return to:

Paula Gill
U.S. Army, Corps of Engineers
San Francisco District
Regulatory Division, CESP-N-R-S
1455 Market Street
San Francisco, CA 94103-1398



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846



In Reply Refer To:
81420-2008-F-1995

MAR 03 2010

Mr. Jim Richards
Attn: Katie Thoreson
Office of Biological Sciences and Permits
California Department of Transportation
P.O. Box 23660
Oakland, California 94623-0660

Subject: Biological Opinion on the Effects of the Proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project, Santa Clara County, California (Caltrans EA 2A4400) on the Endangered Least-Bell's Vireo, Threatened California Red-Legged Frog, Threatened California Tiger Salamander Central Valley Distinct Population Segment, Endangered San Joaquin Kit Fox, and Designated Critical Habitat for the California Tiger Salamander, and Conference Report for Proposed Critical Habitat for the California Red-Legged Frog

Dear Mr. Richards:

This letter responds to a letter from the California Department of Transportation (Caltrans) dated February 26, 2009, which requested formal consultation for the proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project in Santa Clara County, California. Your letter was received by the U.S. Fish and Wildlife Service (Service) on March 2, 2009. This document represents the Service's biological opinion on the effects of the project on the threatened California red-legged frog (*Rana aurora draytonii*), threatened California tiger salamander (*Ambystoma californiense*) Central Valley Distinct Population Segment, endangered least Bell's vireo (*Vireo bellii pusillus*), endangered San Joaquin kit fox (*Vulpes macrotis mutica*), designated critical habitat for the California tiger salamander, and conference report on proposed critical habitat for the California red-legged frog. This letter issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation (23 U.S.C. 327) allows the Secretary of the U.S. Department of Transportation (USDOT) acting through the Federal Highway Administration (FHWA) to establish a Surface Transportation Project Delivery Pilot Program, whereby a State may assume the FHWA responsibilities under the National Environmental Policy Act (NEPA) for environmental review, agency consultation and other actions pertaining to the review or approval of a specific project. Caltrans assumed these responsibilities for the FHWA on July 1, 2007

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through a Memorandum of Understanding (MOU) within the State of California:
http://www.dot.ca.gov/ser/downloads/MOUs/nepa_delegation/sec6005mou.pdf.

Based on the information provided in the February 2009 biological assessment, the letter from Caltrans to the Service dated April 24, 2009, and email and phone correspondence between the Service and Caltrans, the Service has determined that the project, as proposed, is not likely to adversely affect the least Bell's vireo and San Joaquin kit fox. Habitat evaluated for the least Bell's vireo is limited to a narrow, isolated band of mixed willow riparian forest along Ortega Creek west of the northernmost portion of Segment 2, but located within the action area. The riparian corridor is characterized by a patchy mix of willow, blackberry and poison oak with scattered overstory of black cottonwood, valley oak and California black walnut. The riparian corridor lacks the structurally diverse canopy and dense, early to mid-successional, shrub cover with dense stands of cottonwood/willow, oak woodland, and mulefat scrub utilized by this species. Habitat within the action area evaluated for the San Joaquin kit fox is comprised of California annual grasslands, remnant mixed oak woodland, ruderal agricultural and mixed willow riparian forest adjacent to SR 152. The majority of the area being affected is within the paved roadway and road verge and is unlikely to be used by kit fox.

This biological opinion and conference report is based on: (1) the *Biological Assessment: State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project* dated February 2009; (2) letter from Caltrans to the Service dated April 24, 2009 and accompanying exhibits; (3) site visits conducted by the Service and Caltrans on June 12, 2008; (4) miscellaneous correspondence and electronic mail concerning the proposed action between Caltrans and the Service; and (5) other information available to the Service.

Consultation History

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| February 25, 2008 | The Service received a request from Jessie Golding of URS Corporation for technical assistance to determine which Fish and Wildlife Service Field Office (Sacramento or Ventura) will take jurisdiction over the proposed project. |
| March 11, 2008 | The Service informed Jessie Golding of URS Corporation that the Sacramento Field Office will take jurisdiction for the project. |
| June 12, 2008 | The Service attended a meeting with Alison Graff of Caltrans, and Melissa Escaron of the California Department of Fish and Game to review the proposed project and discuss the preliminary biological findings, effects determination, project timing and scheduling, and avoidance and minimization measures. |
| February 2, 2009 | The Service received the Initial Study with Proposed Mitigated Negative Declaration dated January 2009, and the Notice of Intent to Adopt a Mitigated Negative Declaration dated January 29, 2009. |
| March 2, 2009 | The Service received a letter from Caltrans dated February 26, 2009 requesting the initiation of formal consultation for the proposed project. Accompanying the initiation letter, Caltrans submitted the biological assessment dated February 2009. |

- March 11, 2009 The Service attended a meeting with Melissa Escaron of the California Department of Fish and Game, and Alison Graff and Margaret Gabil of Caltrans to discuss the proposed project, biological findings, effects determination, project timing and scheduling, and avoidance and minimization measures.
- May 29, 2009 The Service received an update to the project description and exhibits identifying changes to the project effects acreages for listed species dated April 24, 2009.
- December 9, 2009 The Service attended a site visit at Doan Ranch with Melissa Escaron of the California Department of Fish and Game, Patrick Congdon of the Santa Clara County Open Space Authority, and Katie Thoreson, Decie Boone and Margaret Gabil of Caltrans. The purpose of the site visit was to evaluate the site as off-site compensation habitat for project effects to the California red-legged frog, California tiger salamander and San Joaquin kit fox.
- December 21, 2009 The Service issued a draft biological opinion to Caltrans.
- January 15, 2010 The Service received comments from Caltrans on the draft biological opinion.
- February 25, 2008 - January 20, 2010 Electronic and phone correspondence between Jessie Golding of URS Corporation, Alison Graff, Katie Thoreson and Margaret Gabil of Caltrans, Melisa Escaron of CDFG, and Jerry Roe of the Service.

BIOLOGICAL OPINION

Description of the Proposed Action

The following project description, inclusive of the proposed compensation and proposed conservation measures, was provided by Caltrans and is an excerpt from the February 2009 Biological Assessment and letter from Caltrans dated April 24, 2009 with minor modifications for reasons of clarity and accuracy provided by the Service. A comprehensive description of the project is available in the February 2009 biological assessment (Caltrans 2009a,b).

Project Description

The proposed project is in Santa Clara County on SR 152, locally known as the Pacheco Pass Highway, between Old Lake Road (PM 16.2) and Dunne Lane (aka San Felipe Lane, PM 19.58). The project occurs in the San Felipe, California USGS 7.5-minute quadrangle, in Township 11 South, Range 5 East. The existing alignment is a two-lane highway with 12-foot lanes in both directions, and shoulders ranging from 1 to 6 feet wide within the project limits. The existing soft median barrier is 2 feet wide, and consists of texturing that makes a loud sound when tires pass over it.

To address the high rate of cross-centerline accidents, this project is proposed to improve sight distance, provide standard 8-foot-wide shoulders where necessary, improve pavement friction,

and provide left-turn channelization in the westbound direction at the intersection of SR 152 and Lovers Lane. A rolled shoulder rumble strip, very similar in design and function to the soft median barrier, will be added to the outside shoulders to alert drivers who have strayed outside the defined lane. In addition, the project will conform to existing driveways to meet the new shoulder grade and extend existing culverts to accommodate roadway widening. The proposed improvements will be in two spot locations between PM 16.2 and PM 16.5, hereafter known as Segment 1, and between PM 18.5 and PM 19.58, hereafter known as Segment 2.

Segment 1

Segment 1 skirts the edge of San Felipe Lake (aka Soap Lake). To avoid effects to the lake and sensitive cultural resources, the work on Segment 1 will be confined to the existing pavement and will consist only of improvements to pavement friction. No mechanized equipment will be operated outside the existing pavement. Work will begin at PM 16.2 and conclude at PM 16.5.

Segment 2

Shoulder widening, improving sight distance, and the addition of a left-turn pocket at Lovers Lane will require ground disturbance along Segment 2. To accommodate these activities with minimal effects to aquatic resources, the alignment will be widened primarily to the north. Given the steep slopes along some of the project area north of the existing alignment, three retaining walls will be constructed to develop embankment on that side of SR 152. Roadway construction, described in more detail below, will begin at PM 18.5 and conclude at PM 19.58.

Several aquatic resources exist along Segment 2. The roadway traverses Holstein Creek on a bridge constructed over a 7-foot-high by 14-foot-wide double box culvert. In the same area, a seasonal wetland that is a former breeding location for California tiger salamander occurs on the northern side of SR 152 west of Holstein Creek, and Ortega Creek enters the project area at Lovers Lane and parallels the roadway all the way to the western end of the segment. The project has been designed so that the effect to aquatic resources is a 0.02-acre permanent and 0.01-acre temporary effect to a channelized section of Holstein Creek and a roadside ditch that drains to it.

The maximum limit of the project footprint on Segment 2 is 185 feet north and 85 feet south of the proposed centerline. The current project description and plans represent the greatest expected project footprint and effects to listed species and other sensitive resources. The plans may be refined in details during subsequent stages of project planning. If the project description changes, Caltrans will coordinate with the Service to determine whether reinitiation of formal consultation is required.

Construction Activities

Shoulder Widening

Shoulder widening will require excavation and fill to develop new surface for expanding the shoulder. The existing pavement will be saw cut and the new pavement expanded outward from the cut. The equipment required for this work will include a blade, backhoe, paver, roller, and spreader. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck.

For widening next to Ortega Creek, silt fence will be placed at the toe of the proposed slope to prevent fill from invading the channel. Fill will proceed incrementally to prevent slippage, with

each layer compacted before the next layer is placed. The final slope above the channel will be constructed at 2:1 (horizontal:vertical) in an effort to remain as far from the edge of the creek as possible.

Left-turn Pocket

Left-turn channelization at Lovers Lane will require widening the existing lanes to develop standard transitions, and adding a left-turn pocket and acceleration lane in the westbound lane. The turn pocket will be 12 feet wide and 550 feet long and the acceleration lane will be 12 feet wide and 200 feet long. Widening will require excavation and fill, grading, saw cutting the existing pavement, and adding new pavement. The equipment required for this work includes a blade, backhoe, paver, roller, and spreader. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck. Widening to create the left-turn pocket will require the removal of an estimated 31 eucalyptus trees.

Soil Nail Walls

Three soil nail walls will be added within Segment 2 between PM 18.5 and PM 19.3. Following are the locations and expected dimensions of the walls:

- Soil Nail Wall 1: Station 228+25 to 230+25
 Maximum Dimensions: 15 feet high and 200 feet long
- Soil Nail Wall 2: Station 235+50 to 246+75
 Maximum Dimensions: 20 feet high and 1,125 feet long
- Soil Nail Wall 3: Station 249+80 to 252+80
 Maximum Dimensions: 20 feet high and 300 feet long

Soil nail walls function as retaining walls. They are essentially vertical masonry slabs that are held against a hillside by means of long “nails” drilled horizontally into the ground. The nails are about 0.7 to 1.5 times as long as the height of the wall, depending on the soil condition of the site. They are placed in rows at 5-foot intervals, starting about 2 feet below the top of the wall, and are driven in at a 15° to 20° downwards angle using horizontal drilling equipment. Air or water is used during the drilling process to remove the loosened soil.

The construction of the soil nail walls will involve excavating the hillside, drilling holes, installing the soil nails, and connecting new storm water drains to the existing drainage systems. The equipment required for this work will include a drilling machine, pump, forklift, crane, backhoe, and materials including wire mesh and soil nails (about 30 feet long). The slurry that is produced by the use of water during drilling will be fully contained and disposed of at an approved facility and will not be allowed to enter any drainage systems or waterways.

The contractor may stage the construction of these walls from the roadbed or from the hillside above the wall. In either case, a long-armed backhoe will be used to cut back the hillside. If the walls are built from the roadway, a crane could suspend the backhoe and drilling machine at the required height for earth moving and drilling, or an earthen berm could be built at the base of the wall for the backhoe and drilling machine to work from. If construction is staged from above the wall, an area on the hillside will be temporarily affected by operating the equipment. Although it is unlikely that the walls will be staged from the hillside, potential temporary effects to the

hillsides above the three soil nail walls have been included in the proposed project footprint and effects analysis.

Drainage System

In addition to the two large box culverts that form the existing Holstein Creek Bridge, a total of 13 culverts cross under SR 152 in Segment 2. No culverts occur in Segment 1. The diameters of the culverts range from 18 in to 24 in, except for one 4-foot by 3-foot reinforced concrete box culvert at PM 19.25 (station 262+60). The approximate locations, types, and dimensions of these culverts are given in Table 1 and are shown on the project plans provided in Appendix B of the biological assessment.

Existing culverts will be extended either to the north or to the south of the road embankment as required. New toe-of-the-slope gutters along both sides of the road embankment will be provided as required to be consistent with the existing drainage pattern. Top-of-the-wall gutters will also be provided as required for proper drainage above the soil nail walls. All drainage work is confined within the existing excavation and fill boundary. The equipment required for this work will include a backhoe. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck.

Table 1: Existing Culverts That Cross under SR 152 within the Project Footprint

STATION	TYPE ¹	SIZE ²	APPROXIMATE LENGTH
221+50	CSP	18 in	75 ft
226+60	CSP	18 in	58 ft
231+77	CSP w/ FES	18 in	60 ft
234+32	RPC	24 in	No data
238+66	RPC w/ DI & FES	18 in	44 ft
245+91	CSP w/ HW	18 in	No data
251+60	CSP or RCP w/ DI HW (buried)	18 in	47 ft
255+99	CSP w/ DI & HW	18 in	60 ft
262+60	Concrete Box	48 x 36 in	62 ft
269+70	PPC w/ FES	18 in	50 ft
278+42	CSP w/ FES	18 in	48 ft
282+84	CSP w/ FES	18 in	46 ft
285+93	CSP w/ HW	18 in	67 ft

¹ Type

CSP	corrugated steel pipe	RCP	reinforced concrete pipe
FES	flared end section	PPC	plastic pipe culvert
DI	drainage inlet	HW	head wall

² Size

Diameter, unless otherwise indicated

Pavement Friction and Rumble Strips

On both Segments 1 and 2, open grade asphalt concrete will be used for overlay to improve surface friction. Rolled shoulder rumble strips will be added to the shoulders. The equipment required for this work will include a paver, roller, and spreader. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck.

Equipment Staging

The contractor will determine the location of the equipment staging area in coordination with the Caltrans resident engineer and biologist. The biologist will work with the contractor and resident engineer to ensure that equipment is not staged in a biologically sensitive area to the extent feasible. In Segment 1, the proposed staging area is a 150 foot by 75 foot area (0.258-acre) located in the southeastern corner of the intersection of Old Lake Road and SR 152. This area consists of upland ruderal-agricultural vegetation. In Segment 2, a 150 foot by 75 foot staging area (0.258-acre) is proposed on the northern side of SR 152 at PM 18.70, close to the soil nail walls. A patch of remnant mixed oak woodland will be removed at this location to accommodate shoulder widening. The area outside of the remnant mixed oak woodland consists of California annual grassland. After the completion of construction, the staging areas will be stabilized and revegetated with appropriate native plant species.

Access Roads

No access roads outside of the temporary construction easements and staging areas shown on the plans will be required.

Construction Schedule

Roadway construction is scheduled to begin in February 2011 and conclude by October 30, 2012. Work windows will be established to protect sensitive biological resources.

Site Preparation

Site preparation activities will include: (1) installation of environmentally sensitive area (ESA) fencing, (2) installation of wildlife exclusion fencing, and (3) vegetation removal during the non-nesting season for the prevention of bird nesting. These activities are described in the following subsections:

Environmentally Sensitive Area Fencing

Prior to the start of construction, Environmentally Sensitive Areas (ESA), comprising high-visibility orange construction fencing, will be installed along the perimeter of the project footprint where sensitive habitat occurs. The fencing will clearly delineate the areas within the project footprint where construction, access and staging may occur and will prevent the encroachment of construction equipment/personnel into sensitive habitats supporting special-status species. The specific locations of wetlands and Waters of the U.S./State within or directly adjacent to the project footprint will be verified by the U.S. Army Corps of Engineers and will be included on construction drawings. The final project plans will depict the locations where and how the ESA fencing will be installed. The bid solicitation package special provisions will provide clear language regarding acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within ESA.

Wildlife Exclusion Fencing

Wildlife exclusion fencing for California red-legged frogs and California tiger salamanders will be installed prior to any ground disturbing activities along the perimeter of Segment 1 and around the staging area (PM 16.0) as well as the perimeter of Segment 2 (from PM 18.4

to 19.5) where work will occur. The fencing will be installed along the perimeter of the Segment 2 with a 25 foot buffer around the work area. The fencing will remain throughout the duration of the work activities, and be regularly inspected and maintained, and will be completely removed following project completion.

Vegetation Removal

Vegetation removal will be limited to the maximum extent possible and, if possible, will occur between August 15 to October 15, i.e. outside of the migratory bird nesting season and prior to the onset of the fall rains to avoid disturbance to nesting birds and prior the breeding season of California red-legged frogs and California tiger salamanders. Shrubs and trees will be cut above soil level except in areas that will be excavated for roadway construction. This will allow plants that reproduce vegetatively (e.g., willows) to resprout after construction. All cleared vegetation will be removed from the project and disposed of at a licensed commercial waste facility to prevent establishment of an attractive nuisance for small animals. A Service-approved biologist will be present during all grubbing and vegetation clearing activities. If at any point California red-legged frogs, California tiger salamanders or other listed species are discovered during these activities, the Service-approved biologist through the Resident Engineer or their designee, will halt all work within 50 feet of the animal and contact the Service to determine how to proceed. After project completion, all temporarily affected areas will be regraded to original contours wherever feasible, protected with erosion control measures, and revegetated with native species appropriate for the region and habitat communities on site.

Site Clean-up and Restoration

All construction-related materials including the ESA fencing will be removed after construction activities are completed. All disturbed areas will be recontoured to original grade to the maximum extent feasible and treated with permanent erosion control, including soil stabilization measures such as coir netting and a hydroseed mix made up of appropriate native species.

After the application of permanent erosion control, disturbed areas will be further revegetated with appropriate native species to re-establish baseline habitat values where feasible. Due to the Caltrans safety requirement for a 30-foot clear recovery zone from the edge-of-traveled-way, the areas cleared within this distance of the new alignment will be replanted with native herbaceous species only, even if they originally supported woody species. This applies to the mixed willow riparian, remnant oak woodland, and blue-gum eucalyptus communities. Areas outside the 30-foot distance that originally supported woody vegetation will be replanted with shrub and tree species appropriate to the site. A Restoration and Revegetation Plan will be submitted to the Service within 60 days prior to construction. Upland species that are currently found on the site and that may be used in the erosion control mix and planting plan include: *Artemisia californica*, *Eschscholtzia californica*, *Grindelia camporum*, *Juglans californica*, *Leymus triticoides*, *Nassella pulchra*, *Quercus agrifolia*, and *Quercus lobata*. All restored areas will be inspected and maintained during a monitoring period established in the Restoration and Revegetation Plan.

Project Operation and Maintenance

The completed project's operation will be identical to the current roadway's operation, except for the presence of a left-turn pocket at Lovers Lane. Capacity will not be increased and there will

be no new turnouts or maintenance vehicle pullouts. Maintenance of the completed project will include culvert inspection and clean-out and periodic debris cleanup.

Proposed Conservation Measures

The scope of the proposed project has been reduced to avoid effects to sensitive biological and cultural resources occurring along SR 152. The project limits were reduced from the original 2.9 mile of improvements to 1.38 mile in two spot locations. Within the reduced length of the project, two design options were considered: (A) Widening of the Holstein Creek Bridge, and (B) No Widening of the Holstein Creek Bridge.

The Bridge Widening Option A required five retaining walls: The three soil nail walls plus a retaining wall by the bridge and another one right next to the seasonal wetland. The double box culvert that forms the bridge would have been extended 3 m downstream, which would have required staging equipment in the bed of Holstein Creek during the dry season. The retaining wall next to the seasonal wetland would have required equipment access through a portion of the seasonal wetland.

The No Bridge Widening Option B eliminated extension of the box culvert at the bridge and therefore the need to stage equipment in the creek bed. With no widening at the bridge, neither the retaining wall near the bridge nor the one next to the seasonal wetland were necessary. To minimize effects to aquatic resources and the listed species associated with them, the No Bridge Widening Option B was chosen.

All work next to San Felipe Lake in Segment 1 was confined to the existing pavement to avoid potential effects to sensitive cultural resources and wetland areas along the edge of this hydrologically important feature. To avoid effects to Ortega Creek in Segment 2, the roadway is being widened primarily to the north.

Widening has been kept to the minimum necessary to provide safety improvements to the highway. Design exceptions were received that allow: (1) shoulders to be upgraded less than the required 8 feet in some locations, and (2) the roadway embankment next to Ortega Creek to be steeper than normally required. By building that embankment at a 2:1 slope rather than the normal 4:1 slope, Caltrans was able to increase the distance between the toe of the embankment slope and the edge of the active creek channel.

Proposed Compensation

Caltrans is proposing to compensate for habitat affected by the proposed project in accordance with FHWA policies on natural habitat loss. Compensation will be provided at Doan Ranch, a 572-acre property owned by the Santa Clara County Open Space Authority in southern Santa Clara County, at a ratio of 3:1 for permanent effects and 1.1:1 for temporary effects (Table 2). Caltrans is currently preparing a habitat assessment of the property that will be provided to the Service. The ranch supports California annual grassland and mixed oak woodland, and has several ponds and riparian corridors.

Table 2: Proposed Compensation for Temporary and Permanent Effects

Species	Effects						Total Compensation
	Temporary (acres)			Permanent (acres)			
	Impact	Compensation		Impact	Compensation		
	Ratio	Need		Ratio	Need		
California red-legged frog	6.61	1.1:1	7.27	2.60	3:1	7.80	15.07
California tiger salamander	6.59	1.1:1	7.25	1.91	3:1	5.73	12.98

General Conservation Measures

To reduce potential effects to sensitive biological resources, Caltrans proposes to incorporate construction Best Management Practices and avoidance and minimization measures into the proposed roadway construction project. These measures will be communicated to the contractor through the use of special provisions included in the contract bid solicitation package. These measures include the following:

1. **Seasonal Avoidance.** To the extent practicable, construction will not occur during the wet season, when California red-legged frogs and California tiger salamanders are most active. Except for limited vegetation clearing (necessary to minimize nesting birds from constraining project work during the dry season), work will be limited to the period from April 15 to October 15.
2. **Onsite Construction Personnel Education Program.** Before the onset of construction activities, a qualified biologist will conduct an education program for all construction personnel. At a minimum the training will include a description of least Bell's vireo, California red-legged frog, California tiger salamander, San Joaquin kit fox, and other listed species and their habitats; the occurrence of these species within the action area; an explanation of the status of these species and protection under the Act; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction crews and project personnel entering the project footprint. Upon completion of the program, personnel will sign a form stating that they attended the program and understand all the avoidance and minimization measures and implications of Act.
3. **Implementation of BMPs.** Storm Water Pollution Prevention Plans (SWPPP) and erosion control best management practices (BMPs) will be developed and implemented to minimize any wind or water-related erosion (Appendix B of the biological assessment). The SWPPP will provide guidance for design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize storm water and non-storm water discharges. Protective measures will include, at a minimum:
 - a. No discharge of pollutants from vehicle and equipment cleaning is allowed into any storm drains or water courses.

- b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses, except at established commercial gas stations or established vehicle maintenance facility.
 - c. Concrete wastes are collected in washouts and water from curing operations is collected and disposed of and not allowed into water courses.
 - d. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, covering temporary access road entrances and exits with rock (rocking), and covering temporary stockpiles when weather conditions require.
 - e. Coir rolls or straw wattles will be installed along or at the base of slopes during construction to capture sediment.
 - f. Protection of graded areas from erosion using a combination of silt fences, fiber rolls along toes of slopes or along edges of designated staging areas, and erosion control netting (such as jute or coir) as appropriate on sloped areas.
 - g. Incorporate the use of bio-filtration strips and swales to receive storm water discharges from the highway, or other impervious surfaces.
4. **Construction Site Restrictions.** The following site restrictions will be implemented to avoid or minimize adversely affecting sensitive habitats and harm or harassment to listed species:
- a. A speed limit of 15 miles per hour (mph) in the BSA in unpaved areas will be enforced to reduce dust and excessive soil disturbance.
 - b. Construction access, staging, storage, and parking areas, will be located within the project ROW outside of any designated ESA or outside of the ROW in areas environmentally cleared by the contractor. Access routes and the number and size of staging and work areas will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.
 - c. All food and food-related trash items will be enclosed in sealed trash containers and removed completely from the site at the end of each day.
 - d. No pets from project personnel will be allowed anywhere in the BSA during construction.
 - e. No firearms will be allowed on the project site except for those carried by authorized security personnel, or local, State or Federal law enforcement officials.
 - f. All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils or solvents and a Spill Response Plan will be prepared. Hazardous materials such as fuels, oils, solvents, etc. will be stored in

sealable containers in a designated location that is at least 50 feet from wetlands and aquatic habitats.

- g. Servicing of vehicles and construction equipment including fueling, cleaning, and maintenance will occur at least 50 feet from any aquatic habitat unless separated by topographic or drainage barrier or unless it is an already existing gas station. Staging areas may occur closer to the project activities as required.
5. **Avoidance of Entrapment.** To prevent inadvertent entrapment of animals during construction, all excavated, steep-walled holes or trenches more than 1 foot deep will be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled they must be thoroughly inspected for trapped animals. All replacement pipes, culverts, or similar structures stored in the action area overnight will be inspected before they are subsequently moved, capped and/or buried. If at any time a listed species is discovered, the Resident Engineer and Service-approved biologist will be immediately informed. The Service-approved biologist will determine if relocating the species is necessary and will work with the Service and CDFG prior to handling or relocating unless otherwise authorized.
6. **Avoidance of Impacts to Nesting Birds.** Migratory birds could nest and/or roost within the box culvert at Holstein Creek crossing in Segment 2. Although no federally listed birds have the potential to occur in the BSA, occupied nests and eggs of native migratory birds are protected by California Fish and Game Code Sections 3503 and 3503.5 and the Federal Migratory Bird Treaty Act.
 - a. Exclusion methods will be used to prevent migratory birds from nesting within the culvert. Such methods may include the use of small mesh netting, which will be placed within the culvert prior to the nesting season, which begins February 1, to prevent nesting and roosting in the work zone.
 - b. Additionally, unoccupied nests, i.e. nests without birds or eggs, will be removed to deter birds from establishing nests within the culvert.
 - c. If occupied nests (nests with birds or eggs) are present within the action area, work within nest vicinity will be avoided and the Service and CDFG will be contacted.
7. **Reduce Spread of Invasive Species.** To reduce the spread of invasive non-native plant species and minimize the potential decrease of palatable vegetation for wildlife species, Caltrans will comply with Executive Order 13112. This order is provided to prevent the introduction of invasive species and provide for their control in order to minimize the economic, ecological, and human health impacts. In the event that high- or medium-priority noxious weeds are disturbed or removed during construction or construction-related activities, the contractor will contain the plant material associated with these noxious weeds and dispose of it in a manner that will not promote the spread of the species. The contractor will be responsible for obtaining all permits, licenses and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance will be replanted with fast-growing native grasses or a

native erosion control seed mixture. If seeding is not possible, the area should be covered to the extent practicable with heavy black plastic solarization material until the end of the project.

8. **Revegetation.** All slopes or unpaved areas affected by the proposed project will be re-seeded with native grasses and shrubs to stabilize the slopes and bare ground against erosion. Following construction, native (and non-native if appropriate) plant species will be installed at the disturbed area. Furthermore, native trees with a diameter of 6 inches or greater removed during project construction shall be re-established within the BSA, as allowed by Caltrans Standard Specifications regarding the Clear Recovery Zone, at the replacement rate specified by CDFG, or applicable tree ordinances, typically at ratios ranging from 1:1 to 3:1 (mitigation to effect) depending on the quality of the habitat impacted.

California Red-Legged Frog and California Tiger Salamander Protective Measures

9. **Proper Use of Erosion Control Devices.** To prevent California red-legged frogs and California tiger salamanders from becoming entangled or trapped in erosion control materials, plastic mono-filament netting (erosion control matting) or similar material will not be used within the action area. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
10. **Preconstruction Surveys.** Preconstruction surveys will be conducted by a Service-approved biologist immediately prior to the initiation of any ground disturbing activities within or adjacent to suitable California red-legged frog or California tiger salamander habitat. These surveys will comprise walking transects while conducting visual encounter surveys within areas that will be subject to vegetation clearing, grubbing, grading, cut and fill, or other ground disturbing activities. All fossorial mammal burrows will be inspected for signs of frog or salamander usage to the maximum extent practicable. If it is determined that a burrow may be occupied by a California red-legged frog and/or California tiger salamander, the burrow will be excavated by hand, if possible, and the individual(s) relocated in accordance with the observation and handling protocol outlined below.
11. **Biological Monitoring.** A Service-approved biologist will be present onsite to monitor for California red-legged frogs and California tiger salamanders. Through communication with the Resident Engineer or their designee, the biologist may stop work if deemed necessary for any reason to protect listed species and will advise the Resident Engineer or designee on how to proceed accordingly. The biologist will be present during all construction activities where a listed species could occur. The biologist will conduct clearance surveys at the beginning of each day within or adjacent to suitable frog and salamander habitat and regularly throughout the workday when construction is occurring within or adjacent to suitable frog and salamander habitat.
12. **Protocol for Species Observation and Handling.** If California red-legged frogs or California tiger salamanders are encountered in the action area, work within 50 feet of the animal will cease immediately and the Resident Engineer and Service-approved biologist will be notified. Based on the professional judgment of the Service-approved biologist, if

project activities can be conducted without harming or injuring the animal(s), it may be left at the location of discovery and monitored by the Service-approved biologist. All project personnel will be notified of the finding and at no time shall work occur within 50 feet of the animal without a biological monitor present. If it is determined by the Service-approved biologist that relocating the California red-legged frog(s) or California tiger salamander(s) is necessary, the following steps will be followed:

- a. Prior to handling and relocation the Service-approved biologist will take precautions to prevent introduction of amphibian diseases in accordance with the *Revised Guidance on Site Assessments and Field Surveys for the California Red-legged Frog* (Service 2005a) and *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* (Service 2003). Disinfecting equipment and clothing is especially important when biologists are coming to the action area to handle amphibians after working in other aquatic habitats.
- b. California red-legged frogs and California tiger salamanders will be captured by hand, dipnet or other Service-approved methodology, transported by hand, dipnet or temporary holding container, and released as soon as practicable the same day of capture. Handling of California red-legged frogs and California tiger salamanders will be minimized to the maximum extent practicable. Holding/transporting containers and dipnets will be thoroughly cleaned and disinfected prior to transporting to the action area and will be rinsed with freshwater onsite immediately prior to usage unless doing so would result in the injury or death of the animal(s) due to the time delay.
- c. California red-legged frogs and California tiger salamanders will be relocated to the nearest suitable habitat outside of the area where actions would not result in harm or harassment, and released on the same side of SR 152 where they were discovered. The individual(s) will be released within suitable habitat in the Caltrans right-of-way or another property acceptable to the property owner, and the Service/CDFG will be notified. If suitable habitat cannot be identified, the Service/CDFG should be contacted to determine an acceptable alternative. If salamanders are captured from burrows, they will be relocated to the nearest active burrow network outside of the work zone. The release burrow(s) will be actively occupied by ground squirrels, since inactive burrows can collapse if not maintained. No more than two juvenile or adult salamanders will be released into the same burrow. Transporting California red-legged frogs and California tiger salamanders to a location other than the location described herein will require written authorization of the Service.

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed action, the Service considers the action area to comprise the 0.3-mile segment (Segment 1) of State Route 152 from post mile (PM) 16.2 to PM 16.5, and the 1.08-mile segment (Segment 2) from PM 18.5 to PM 19.58 in Santa Clara County, California. The action area

encompasses the project footprint, equipment staging areas, access routes, Caltrans right-of-way (ROW) limits, project-specific construction easements within the ROW, and adjacent lands in some cases extending several hundred feet from the project footprint depending on the nature of the disturbance and sensitivity of the species to disturbance, that may result in take of listed due to disturbance from noise, vibration, heavy equipment operation and increased human activity. Habitat within the action area is, in part, comprised of California annual grassland, mixed willow riparian forest, remnant mixed oak woodland, blue-gum eucalyptus, ruderal-agricultural and urban vegetation communities. Two creeks, Ortega Creek and Holstein Creek parallel SR 152 to the west, the latter of which crosses under SR 152 near the eastern terminus of Segment 2. San Felipe Lake is located within the action area just south of SR 152 in Segment 1. Remaining land within the action area is comprised of rural residences and outbuildings; land use comprises farming of row crops and cattle grazing.

Analytical Framework for Jeopardy and Adverse Modification Analyses

Jeopardy Determinations

In accordance with policy and regulation, the jeopardy analysis in this Biological Opinion relies on four components: (1) *Status of the Species* and (2) *Environmental Baseline*, which evaluates the California red-legged frog and California tiger salamander range-wide conditions, the factors responsible for that condition, and their survival and recovery needs; and evaluates the condition of these species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of these species; (3) *Effects of the Action*, which determines the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities on these species; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on them.

In accordance with policy and regulation, this jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the California red-legged frog and California tiger salamander current status, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of these species in the wild.

The jeopardy analysis in this Biological Opinion places an emphasis on consideration of the range-wide survival and recovery of the California red-legged frog and California tiger salamander and the role of the action area in the survival and recovery of species as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Adverse Modification Determination

This biological opinion on the critical habitat for the California tiger salamander and conference report on the proposed critical habitat for the California red-legged frog does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR § 402.02. Instead, we have relied upon the statutory provisions of the Act to complete the following analysis with respect to the critical habitat.

In accordance with policy and regulation, the adverse modification analysis in this Biological Opinion relies on four components: (1) *Status of Critical Habitat* and (2) *Environmental Baseline*

of the critical habitat, which evaluates the range wide condition of designated critical habitat for the California red-legged frog and California tiger salamander in terms of primary constituent elements (PCEs), the factors responsible for that condition, and the intended recovery function of the critical habitat overall; and evaluates the condition of critical habitat in the action area, the factors responsible for that condition, and the recovery role of the critical habitat in the action area; (3) *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on PCEs and how that will influence the recovery role of affected critical habitat units; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on the PCEs and how that will influence the recovery role of affected critical habitat units.

For purposes of the adverse modification determination, the effects of the proposed Federal action on California red-legged frog and California tiger salamander critical habitat are evaluated in the context of the range-wide condition of the critical habitat, taking into account any cumulative effects, to determine if the critical habitat range-wide would remain functional (or would retain the current ability for the PCEs to be functionally established in areas of currently unsuitable but capable habitat) to serve its intended recovery role for these species.

The analysis in this Biological Opinion and Conference Report places an emphasis on using the intended range-wide recovery function of California red-legged frog and California tiger salamander critical habitat and the role of the action area relative to that intended function as the context for evaluating the significance of effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the adverse modification determination.

Status of the Species and Environmental Baseline

California Red-legged Frog

Listing Status: The California red-legged frog was listed as a threatened species on May 23, 1996 (61 FR 25813). Critical Habitat was designated for this species on April 13, 2006 (71 FR 19244) and a proposed revision was published on September 16, 2008 (73 FR 53492). A recovery plan was published for the California red-legged frog on September 12, 2002 (Service 2002).

Description: The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background color. Dorsal spots usually have light centers (Stebbins 2003), and dorsolateral folds are prominent on the back. Larvae (tadpoles) range from 0.6 to 3.1 inches in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

Distribution: The historic range of the red-legged frog extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Fellers 2005; Jennings and Hayes 1985; Hayes and Krempels 1986). The red-legged frog was historically documented in 46 counties but the taxa now remains in 238 streams or drainages within 23 counties,

representing a loss of 70 percent of its former range (Service 2002). Red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the central coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast, and northern Transverse Ranges. The species is believed to be extirpated from the southern Transverse and Peninsular ranges, but is still present in Baja California, Mexico (CDFG 2009).

Status and Natural History: California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and manmade ponds, and ephemeral drainages in valley bottoms and foothills up to 4,921 feet in elevation (Jennings and Hayes 1994, Bulger *et al.* 2003, Stebbins 2003). However, red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. California red-legged frogs breed between November and April in still or slow-moving water at least 2.3 feet in depth with emergent vegetation, such as cattails (*Typha* spp.), tules (*Scirpus* spp.) or overhanging willows (*Salix* spp.) (Hayes and Jennings 1988). Red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986). Female frogs deposit egg masses on emergent vegetation so that the egg mass floats on or near the surface of the water (Hayes and Miyamoto 1984). Red-legged frogs breed from November through March with earlier breeding records occurring in southern localities (Storer 1925). Individuals occurring in coastal drainages are active year-round (Jennings *et al.* 1992), whereas those found in interior sites are normally less active during the cold season.

During other parts of the year, habitat includes nearly any area within 1-2 miles of a breeding site that stays moist and cool through the summer (Fellers 2005). According to Fellers (2005), this can include vegetated areas with coyote brush (*Baccharis pilularis*), California blackberry thickets (*Rubus ursinus*), and root masses associated with willow (*Salix* species) and California bay (*Umbellularia californica*) trees. Sometimes the non-breeding habitat used by red-legged frogs is extremely limited in size. For example, non-breeding red-legged frogs have been found in a 6-foot wide coyote brush thicket growing along a tiny intermittent creek surrounded by heavily grazed grassland (Fellers 2005). Sheltering habitat for red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned sheds, or hay stacks may also be used. Incised stream channels with portions narrower and depths greater than 18 inches also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

California red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adult frogs are often associated with permanent bodies of water. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5-mile, with a few individuals moving up to 1-2 miles (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005).

In a study of California red-legged frog terrestrial activity in a mesic area of the Santa Cruz Mountains, Bulger *et al.* (2003) categorized terrestrial use as migratory and non-migratory. The

latter occurred from one to several days and was associated with precipitation events. Migratory movements were characterized as the movement between aquatic sites and were most often associated with breeding activities. Bulger reported that non-migrating frogs typically stayed within 200 feet of aquatic habitat 90% of the time and were most often associated with dense vegetative cover, i.e. California blackberry, poison oak and coyote brush. Dispersing frogs in northern Santa Cruz County traveled distances from 0.25-mile to more than 2 miles without apparent regard to topography, vegetation type, or riparian corridors (Bulger *et al.* 2003).

In a study of California red-legged frog terrestrial activity in a xeric environment, Tatarian (2008) noted that a 57% majority of frogs fitted with radio transmitters in the Round Valley study area in eastern Contra Costa County stayed at their breeding pools, whereas 43% moved into adjacent upland habitat or to other aquatic sites. This study reported a peak of seasonal terrestrial movement occurring in the fall months, with movement commencing with the first 0.2-inch of precipitation. Movements away from the source pools tapered off into spring. Upland movement activities ranged from 3 to 233 feet, averaging 80 feet, and were associated with a variety of refugia including grass thatch, crevices, cow hoof prints, ground squirrel burrows at the bases of trees or rocks, logs, and a downed barn door; others were associated with upland sites lacking refugia (Tatarian 2008). The majority of terrestrial movements lasted from 1 to 4 days; however, one adult female was reported to remain in upland habitat for 50 days (Tatarian 2008). Uplands closer to aquatic sites were used more often and frog refugia were more commonly associated with areas exhibiting higher object cover, e.g. woody debris, rocks, and vegetative cover. Subterranean cover was not significantly different between occupied upland habitat and non-occupied upland habitat.

California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Egg masses containing 2,000 to 5,000 eggs are attached to vegetation below the surface and hatch after 6 to 14 days (Storer 1925, Jennings and Hayes 1994). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings *et al.* 1992). Eggs exposed to salinity levels greater than 4.5 parts per thousand results in 100 percent mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3½ to 7 months following hatching and reach sexual maturity 2 to 3 years of age (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1985, 1990, 1994). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Sexual maturity normally is reached at 3 to 4 years of age (Storer 1925; Jennings and Hayes 1985). Red-legged frogs may live 8 to 10 years (Jennings *et al.* 1992). Populations of red-legged frogs fluctuate from year to year. When conditions are favorable red-legged frogs can experience extremely high rates of reproduction and thus produce large numbers of dispersing young and a concomitant increase in the number of occupied sites. In contrast, red-legged frogs may temporarily disappear from an area when conditions are stressful (e.g., drought).

The diet of California red-legged frogs is highly variable and changes with the life history stage. The diet of larval California red-legged frogs is not well studied, but is likely similar to that of other ranid frogs, feeding on algae, diatoms, and detritus by grazing on the surface of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b, 1997). Hayes and Tennant (1985) analyzed the diets of California red-legged frogs from Cañada de la Gaviota in Santa Barbara County during the winter of 1981 and found invertebrates (comprising 42 taxa) to be the most common

prey item consumed; however, they speculated that this was opportunistic and varied based on prey availability. They ascertained that larger frogs consumed larger prey and were recorded to have preyed on Pacific tree frogs, three-spined stickleback (*Gasterosteus aculeatus*) and to a limited extent, California mice (*Peromyscus californicus*), which were abundant at the study site (Hayes and Tennant 1985, Fellers 2005). Although larger vertebrate prey was consumed less frequently, it represented over half of the prey mass eaten by larger frogs suggesting that such prey may play an energetically important role in their diets (Hayes and Tennant 1985). Juvenile and subadult/adult frogs varied in their feeding activity periods; juveniles fed for longer periods throughout the day and night, while subadult/adults fed nocturnally (Hayes and Tennant 1985). Juveniles were significantly less successful at capturing prey and all life history stages exhibited poor prey discrimination; feeding on several inanimate objects that moved through their field of view (Hayes and Tennant 1985).

Threats: Habitat loss, non-native species introduction, and urban encroachment are the primary factors that have adversely affected the red-legged frog throughout its range. Several researchers in central California have noted the decline and eventual local disappearance of California and northern red-legged frogs in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish (*Procambarus clarkii*), signal crayfish (*Pacifastacus leniusculus*), and several species of warm water fish including sunfish (*Lepomis* spp.), goldfish (*Carassius auratus*), common carp (*Cyprinus carpio*), and mosquitofish (*Gambusia affinis*) (Moyle 1976, S. Barry 1992, L. Hunt 1993, Fisher and Schaffer 1996). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern red-legged frogs (*Rana aurora aurora*), and suggested that bullfrogs could prey on subadult northern red-legged frogs as well. Bullfrogs may also have a competitive advantage over red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Further more, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with red-legged frog reproduction. Both California and northern red-legged frogs have been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Twedt 1993; M. Jennings 1993). Thus bullfrogs are able to prey upon and out-compete red-legged frogs, especially in sub-optimal habitat.

The urbanization of land within and adjacent to red-legged frog habitat has also impacted red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks red-legged frog dispersal, and the introduction of predatory fishes and bullfrogs. This report further identifies the conversion and isolation of perennial pool habitats resulting from urbanization as an ongoing impact to red-legged frogs. Mao *et al.* (1999 cited in Fellers 2005) reported northern red-legged frogs infected with an iridovirus, which was also presented in sympatric threespine sticklebacks (*Gasterosteus aculeatus*) in northwestern California. Ingles (1932a, 1932b, and 1933 cited in Fellers 2005) reported four species of trematodes from red-legged frogs, but he later synonymized two of them (found them to be the same as the other two).

The recovery plan for red-legged frogs identifies eight Recovery Units (Service 2002). The establishment of these Recovery Units is based on the Recovery Team's determination that various regional areas of the species' range are essential to its survival and recovery. The status of the red-legged frog will be considered within the smaller scale of Recovery Units as opposed

to the overall range. These Recovery Units are delineated by major watershed boundaries as defined by U.S. Geological Survey hydrologic units and the limits of the range of the California red-legged frog. The goal of the draft recovery plan is to protect the long-term viability of all extant populations within each Recovery Unit. Within each Recovery Unit, core areas have been delineated and represent contiguous areas of moderate to high red-legged frog densities that are relatively free of exotic species such as bullfrogs. The goal of designating core areas is to protect metapopulations that, combined with suitable dispersal habitat, will allow for the long term viability within existing populations. This management strategy will allow for the recolonization of habitat within and adjacent to core areas that are naturally subjected to periodic localized extinctions, thus assuring the long-term survival and recovery of red-legged frogs.

Environmental Baseline

The action area is located in the Santa Clara Valley Core Area (Unit 17) and the South Santa Clara Valley Hydrologic Sub-Area (Service 2002). The conservation needs for the Santa Clara Valley Core Area are to: (1) protect existing populations; and (2) control non-native predators. According to the Biological Assessment (Caltrans 2009a), the project is located within the known range of the California red-legged frog, and suitable upland and dispersal habitat are present in the action area largely comprised of California annual grassland, mixed willow riparian forest, remnant mixed oak woodland, and ruderal-agricultural vegetation communities. These habitats have been subject to regular disturbance by residents including landscaping, intense livestock grazing and farming of row crops. Such practices can temporarily modify key habitat features resulting in spatial-temporal habitat loss which can result in injury or death to frogs. Some land-use practices if implemented properly, which appear to be the case for lands within the action area, can increase the utility of the land for frogs, such as a managed grazing regime to optimize grassland vegetation height and density, grazing exclusion fencing around sensitive habitat, and the establishment and management of stock ponds.

Seven occurrences have been reported within 5 miles of the project footprint dating from 1990 to 2005 and are located in the foothills to the north and east, Pacheco and Santa Ana creeks to the east and south, respectively, and the Pajaro River to the southwest (CDFG 2009a). Suitable non-breeding aquatic habitat is present within Ortega and Holstein creeks along Segments 1 and 2, respectively. Suitable breeding habitat is present within portions of Ortega Creek between PM 18.7 and 19.0 in the form of side-channel pools and slow-moving runs. Moderate to dense streamside vegetation provides cover and forage for frogs and small stands of bulrush, cattails and other emergent vegetation provide suitable substrate for egg-mass attachment. According to the Biological Assessment, this reach of Ortega Creek likely holds water for at least 20 weeks, sufficient for egg and larval development, and metamorphosis. San Felipe Lake, which is located within the action area adjacent to Segment 1, provides suitable year-round aquatic habitat and could support breeding; however, surveys conducted by H.T. Harvey & Associates in 2005 (Caltrans 2009a) resulted in the observation of bullfrogs and no California red-legged frogs within the lake. The presence of bullfrogs within San Felipe Lake does not preclude California red-legged frogs from inhabiting the lake; however, bullfrogs are known predators and competitors of red-legged frogs and if established within the lake, could minimize the chance of (re)colonization by red-legged frogs. Based on the prevalence of California red-legged frogs within the region, connectivity to adjacent occupied habitats and the presence of suitable habitat within and adjacent to the action area, the Service has determined there is a reasonable potential for California red-legged frogs to inhabit, breed or disperse through the action area.

Proposed California Red-legged Frog Critical Habitat

Critical habitat is defined in Section 3 of the Act as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR 424.12(b)). The Service is required to list the known primary constituent elements together with the critical habitat description. Such physical and biological features include, but are not limited to, the following:

1. Space for individual and population growth, and for normal behavior;
2. Food, water, air, light, minerals, or other nutritional or physiological requirements;
3. Cover or shelter;
4. Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
5. Generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

The primary constituent elements defined for the California red-legged frog was derived from its biological needs. The area proposed for designation as revised critical habitat provides aquatic habitat for breeding and non-breeding activities and upland habitat for shelter, foraging, predator avoidance, and dispersal across the California red-legged frog's range. The primary constituent elements and, therefore, the resulting physical and biological features essential for the conservation of the species were determined from studies of California red-legged frog ecology.

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species, and the habitat requirements for sustaining the essential life-history functions of the species, we have determined that the primary constituent elements essential to the conservation of the California red-legged frog are:

1. *Aquatic Breeding Habitat.* Standing bodies of fresh water (with salinities less than 7.0 ppt), including: natural and manmade (e.g., stock) ponds, slow-moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years.
2. *Non-Breeding Aquatic Habitat.* Freshwater and wetted riparian habitats, as described above, that may not hold water long enough for the subspecies to hatch and complete its aquatic life cycle but that do provide for shelter, foraging, predator avoidance, and aquatic dispersal for juvenile and adult California red-legged frogs. Other wetland habitats that would be considered to meet these elements include, but are not limited to: plunge pools

within intermittent creeks; seeps; quiet water refugia during high water flows; and springs of sufficient flow to withstand the summer dry period.

3. *Upland Habitat.* Upland areas adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat up to a distance of 1 mi in most cases and comprised of various vegetational series such as grasslands, woodlands, wetland, or riparian plant species that provides the frog shelter, forage, and predator avoidance. Upland features are also essential in that they are needed to maintain the hydrologic, geographic, topographic, ecological, and edaphic features that support and surround the wetland or riparian habitat. These upland features contribute to the filling and drying of the wetland or riparian habitat and are responsible for maintaining suitable periods of pool inundation for larval frogs and their food sources, and provide breeding, non-breeding, feeding, and sheltering habitat for juvenile and adult frogs (e.g., shelter, shade, moisture, cooler temperatures, a prey base, foraging opportunities, and areas for predator avoidance). Upland habitat should include structural features such as boulders, rocks and organic debris (e.g., downed trees, logs), as well as small mammal burrows and moist leaf litter.
4. *Dispersal Habitat.* Accessible upland or riparian dispersal habitat within designated units and between occupied locations within a minimum of 1 mi of each other and that allows for movement between such sites. Dispersal habitat includes various natural habitats and altered habitats such as agricultural fields, which do not contain barriers (e.g., heavily traveled road without bridges or culverts) to dispersal. Dispersal habitat does not include moderate- to high-density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large reservoirs over 50 ac in size, or other areas that do not contain those features identified in primary constituent elements 1, 2, or 3 as essential to the conservation of the subspecies.

With the revised designation of critical habitat, the Service intends to conserve the physical and biological features that are essential to the conservation of the species, through the identification of the appropriate quantity and spatial arrangement of the primary constituent elements sufficient to support the life-history functions of the species. Because not all life-history functions require all the primary constituent elements, not all areas designated as critical habitat will contain all the primary constituent elements. Please refer to 73 FR 53492 for additional information on California red-legged frog critical habitat.

Environmental Baseline

A portion of Segment 2 immediately west of Lover's Lane and eastward to the residence at 5401 Pacheco Pass Highway is located within the revised proposed critical habitat (Unit STC-2) issued on September 16, 2008 (73 FR 53492). This unit is approximately 204,718 acres; the portion within the action area and subject to ground disturbance totals approximately 1.77 acres, which represents less than one-tenth of one percent of the total unit acreage. This unit stretches from southeastern Santa Clara County to western Stanislaus County down to northern San Benito County from Henry Coe State Park south to Mount Ararat (Merced County) and Mariposa Peak (San Benito County) to San Felipe (Santa Clara County). Unit STC-2 contains the features that are essential for the conservation of the species. The unit also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2) and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). The unit contains high-quality permanent and ephemeral aquatic habitats suitable for breeding and upland areas for dispersal, shelter, and food. The

designation of this unit is expected to prevent further habitat fragmentation, provide connectivity to units farther north in Santa Clara, Alameda, and Contra Costa Counties, and represent the southern portion of the areas designated within Santa Clara County and East Bay Region.

The portion of the action area within this unit contains two of the four PCE's: non-breeding aquatic (PCE 2) and upland habitat (PCE 3). The non-breeding aquatic habitat consists of a single seasonal wetland (0.07-acre) located north of SR 152 at PM 19.25, which is formed in a shallow swale near the entrance of a box culvert that crosses under SR 152 and empties into a drainage ditch that flows into Holstein Creek approximately 250 feet to the east. The remaining non-paved habitat within the 1.77 acres to be affected is comprised of upland habitat within California annual grassland, remnant mixed oak woodland and ruderal-agricultural vegetation communities. The majority of this area comprises California annual grassland with minimal structural features and scattered ground squirrel burrows that provide a network of subterranean burrows for shelter.

California Tiger Salamander

Listing Status: The final rule listing the Central Valley Distinct Population Segment of the California tiger salamander as a threatened species was published on August 4, 2004 (69 FR 47212). Critical habitat was designated on August 23, 2005 in 19 counties for the Central Valley Distinct Population Segment (70 FR 49380).

Description: The California tiger salamander is a large, stocky, terrestrial salamander with a broad, rounded snout. Recorded adult measurements have been as much as 8.2 inches long (Petranka 1998; Stebbins 2003). Tiger salamanders exhibit sexual dimorphism (differences in body appearance based on gender) with males tending to be larger than females. Tiger salamander coloration generally consists of random white or yellowish markings against a black body. The markings on adults California tiger salamanders tend to be more concentrated on the lateral sides of the body, whereas other tiger salamander species tend to have brighter yellow spotting that is heaviest on the dorsal surface.

Distribution: The California tiger salamander is endemic to California and historically inhabited the low-elevation grassland and oak savanna plant communities of the Central Valley, adjacent foothills, and Inner Coast Ranges (Jennings and Hayes 1994; Storer 1925; Shaffer *et al.* 1993). The species has been recorded from near sea level to approximately 3,900 feet in the Coast Ranges and to approximately 1,600 feet in the Sierra Nevada foothills (Shaffer *et al.* 2004). Along the Coast Ranges, the species occurred from the Santa Rosa area of Sonoma County, south to the vicinity of Buellton in Santa Barbara County. The historic distribution in the Central Valley and surrounding foothills included northern Yolo County southward to northwestern Kern County and northern Tulare County. Three distinct California tiger salamander populations are recognized and correspond to Santa Maria area within Santa Barbara County, the Santa Rosa Plain in Sonoma County, and vernal pool/grassland habitats throughout the Central Valley.

Status and Natural History: The tiger salamander has an obligate biphasic life cycle (Shaffer *et al.* 2004). Although the larvae develop in the vernal pools and ponds in which they were born, tiger salamanders are otherwise terrestrial and spend most of their post-metamorphic lives in widely dispersed underground retreats (Shaffer *et al.* 2004; Trenham *et al.* 2001). Because they spend most of their lives underground, tiger salamanders are rarely encountered even in areas where salamanders are abundant. Subadult and adult tiger salamanders typically spend the dry

summer and fall months in the burrows of small mammals, such as California ground squirrels and Botta's pocket gopher (*Thomomys bottae*) (Storer 1925; Loredo and Van Vuren 1996; Petranka 1998; Trenham 1998a). Although ground squirrels have been known to eat tiger salamanders, the relationship with their burrowing hosts is primarily commensal (an association that benefits one member while the other is not affected) (Loredo *et al.* 1996; Semonsen 1998).

Tiger salamanders may also use landscape features such as leaf litter or desiccation cracks in the soil for upland refugia. Burrows often harbor camel crickets and other invertebrates that provide likely prey for tiger salamanders. Underground refugia also provide protection from the sun and wind associated with the dry California climate that can cause excessive drying of amphibian skin. Although California tiger salamanders are members of a family of "burrowing" salamanders, they are not known to create their own burrows. This may be due to the hardness of soils in the California ecosystems in which they are found. Tiger salamanders depend on persistent small mammal activity to create, maintain, and sustain sufficient underground refugia for the species. Burrows are short lived without continued small mammal activity and typically collapse within approximately 18 months (Loredo *et al.* 1996).

Upland burrows inhabited by tiger salamanders have often been referred to as aestivation sites. However, "aestivation" implies a state of inactivity, while most evidence suggests that tiger salamanders remain active in their underground dwellings. A recent study has found that tiger salamanders move, feed, and remain active in their burrows (Van Hattem 2004). Because tiger salamanders arrive at breeding ponds in good condition and are heavier when entering the pond than when leaving, researchers have long inferred that tiger salamanders are feeding while underground. Recent direct observations have confirmed this (Trenham 2001; Van Hattem 2004). Thus, "upland habitat" is a more accurate description of the terrestrial areas used by tiger salamanders.

Tiger salamanders typically emerge from their underground refugia at night during the fall or winter rainy season (November-May) to migrate to their breeding ponds (Stebbins 2003; Shaffer *et al.* 1993; Trenham *et al.* 2000). The breeding period is closely associated with the rainfall patterns in any given year with less adults migrating and breeding in drought years (Loredo and Van Vuren 1996; Trenham *et al.* 2000). Male salamanders are typically first to arrive and generally remain in the ponds longer than females. Results from a 7-year study in Monterey County suggested that males remained in the breeding ponds for an average of 44.7 days while females remained for an average of only 11.8 days (Trenham *et al.* 2000). Historically, breeding ponds were likely limited to vernal pools, but now include livestock stock ponds. Ideal breeding ponds are typically fishless, and seasonal or semi-permanent (Barry and Shaffer 1994; Petranka 1998).

While in the ponds, adult salamanders mate and then the females lay their eggs in the water (Twitty 1941; Shaffer *et al.* 1993; Petranka 1998). Egg laying typically reaches a peak in January (Loredo and Van Vuren 1996; Trenham *et al.* 2000). Females attach their eggs singly, or in rare circumstances, in groups of two to four, to twigs, grass stems, vegetation, or debris (Storer 1925; Twitty 1941). Eggs are often attached to objects, such as rocks and boards in ponds with no or limited vegetation (Jennings and Hayes 1994). Clutch sizes from a Monterey County study had an averaged of 814 eggs (Trenham *et al.* 2000). Seasonal pools may not exhibit sufficient depth, persistence, or other necessary parameters for adult breeding during times of drought (Barry and Shaffer 1994). After breeding and egg laying is complete, adults leave the pool and return to

their upland refugia (Loredo *et al.* 1996; Trenham 1998a). Adult salamanders often continue to emerge nightly for approximately the next two weeks to feed amongst their upland habitat (Shaffer *et al.* 1993).

Tiger salamander larvae typically hatch within 10 to 24 days after eggs are laid (Storer 1925). The peak emergence of these metamorphs is typically between mid-June and mid-July (Loredo and Van Vuren 1996; Trenham *et al.* 2000). The larvae are totally aquatic and range in length from approximately 0.45 to 0.56-inch (Petranka 1998). They have yellowish gray bodies, broad fat heads, large, feathery external gills, and broad dorsal fins that extend well up their back. The larvae feed on zooplankton, small crustaceans, and aquatic insects for about six weeks after hatching, after which they switch to larger prey (J. Anderson 1968). Larger larvae have been known to consume the tadpoles of Pacific treefrogs (*Hyla regilla*), western spadefoot toads (*Spea hammondi*), and California red-legged frogs (J. Anderson 1968; P. Anderson 1968). Tiger salamander larvae are among the top aquatic predators in seasonal pool ecosystems. When not feeding, they often rest on the bottom in shallow water but are also found throughout the water column in deeper water. Young salamanders are wary and typically escape into vegetation at the bottom of the pool when approached by potential predators (Storer 1925).

The tiger salamander larval stage is typically completed in 3 to 6 months with most metamorphs entering upland habitat during the summer (Petranka 1998). In order to be successful, the aquatic phase of this species' life history must correspond with the persistence of its seasonal aquatic habitat. Most seasonal ponds and pools dry up completely during the summer. Amphibian larvae must grow to a critical minimum body size before they can metamorphose (change into a different physical form) to the terrestrial stage (Wilbur and Collins 1973).

Larval development and metamorphosis can vary and is often site-dependent. Length of larvae collected near Stockton in the Central Valley during April varied from 1.88 to 2.32 inches (Storer 1925). Feaver (1971) found that larvae metamorphosed and left breeding pools 60 to 94 days after eggs had been laid, with larvae developing faster in smaller, more rapidly drying pools. Longer ponding duration typically results in larger larvae and metamorphosed juveniles that are more likely to survive and reproduce (Pechmann *et al.* 1989; Semlitsch *et al.* 1988; Morey 1998; Trenham 1998b). Larvae will perish if a breeding pond dries before metamorphosis is complete (P. Anderson 1968; Feaver 1971). Pechmann *et al.* (1988) found a strong positive correlation between ponding duration and total number of metamorphosing juveniles in five salamander species. In Madera County, Feaver (1971) found that only 11 of 30 sampled pools supported larval California tiger salamanders, and 5 of these dried before metamorphosis could occur. Therefore, out of the original 30 pools, only 6 (20 percent) provided suitable conditions for successful reproduction that year. Size at metamorphosis is positively correlated with stored body fat and survival of juvenile amphibians, and negatively correlated with age at first reproduction (Semlitsch *et al.* 1988; Scott 1994; Morey 1998).

Following metamorphosis, juveniles leave their pools and enter upland habitat. This emigration can occur in both wet and dry conditions (Loredo and Van Vuren 1996; Loredo *et al.* 1996). Wet conditions are more favorable for upland travel but rare summer rain events seldom occur as metamorphosis is completed and ponds begin to dry. As a result, juveniles may be forced to leave their ponds on rainless nights. Under dry conditions, juveniles may be limited to seeking upland refugia in close proximity to their aquatic larval pool. These individuals often wait until the next winter's rains to move further into more suitable upland refugia. Although likely rare,

larvae may over-summer in permanent ponds. Juveniles remain active in their upland habitat, emerging from underground refugia during rainfall events to disperse or forage (Trenham and Shaffer 2005). Depending on location and other development factors, metamorphs will not return as adults to aquatic breeding habitat for 2 to 5 years (Loredo and Van Vuren 1996; Trenham *et al.* 2000).

Lifetime reproductive success for tiger salamander species is low. Results from one study suggest that the average female tiger salamander bred 1.4 times and produced 8.5 young per reproductive effort that survived to metamorphosis (Trenham *et al.* 2000). This resulted in the output of roughly 11 metamorphic offspring over a breeding female's lifetime. The primary reason for low reproductive success may be that this relatively short-lived species requires two or more years to become sexually mature (Shaffer *et al.* 1993). Some individuals may not breed until they are four to six years old. While California tiger salamanders may survive for more than ten years, many breed only once, and in one study, less than 5 percent of marked juveniles survived to become breeding adults (Trenham 1998b). With such low recruitment, isolated populations are susceptible to unusual, randomly occurring natural events as well human-caused factors that reduce breeding success and individual survival. Factors that repeatedly lower breeding success in isolated pools can quickly extirpate a population.

Dispersal and migration movements made by tiger salamanders can be grouped into two main categories: (1) breeding migration; and (2) interpond dispersal. Breeding migration is the movement of salamanders to and from a pond from the surrounding upland habitat. After metamorphosis, juveniles move away from breeding ponds into the surrounding uplands, where they live continuously for several years. At a study in Monterey County, it was found that upon reaching sexual maturity, most individuals returned to their natal/birth pond to breed, while 20 percent dispersed to other ponds (Trenham *et al.* 2001). After breeding, adult tiger salamanders return to upland habitats, where they may live for one or more years before attempting to breed again (Trenham *et al.* 2000).

Tiger salamanders are known to travel large distances between breeding ponds and their upland refugia. Generally it is difficult to establish the maximum distances traveled by any species, but tiger salamanders in Santa Barbara County have been recorded dispersing up to 1.24 miles from their breeding ponds (S. Sweet 1998). Tiger salamanders are also known to travel between breeding ponds. One study found that 20 to 25 percent of the individuals captured at one pond were recaptured later at other ponds approximately 1,900 and 2,200 feet away (Trenham *et al.* 2001). In addition to traveling long distances during juvenile dispersal and adult migration, tiger salamanders may reside in burrows far from their associated breeding ponds.

Although previously cited information indicates that tiger salamanders can travel long distances, they typically remain close to their associated breeding ponds. A trapping study conducted in Solano County during the winter of 2002/2003 suggested that juveniles dispersed and used upland habitats further from breeding ponds than adults (Trenham and Shaffer 2005). More juvenile salamanders were captured at traps placed at 328, 656, and 1,312 feet from a breeding pond than at 164 feet. Approximately 20 percent of the captured juveniles were found at least 1,312 feet from the nearest breeding pond. The associated distribution curve suggested that 95 percent of juvenile salamanders were within 2,099 feet of the pond, with the remaining 5 percent being found at even greater distances. Preliminary results from the 2003-04 trapping efforts at the same study site detected juvenile tiger salamanders at even further distances, with a large

proportion of the captures at 2,297 feet from the breeding pond (Trenham *et al.*, unpublished data). Surprisingly, most juveniles captured, even those at 2,100 feet, were still moving away from ponds (Ben Fitzpatrick, University of California at Davis, personal communication, 2004). In Santa Barbara County, juvenile California tiger salamanders have been trapped approximately 1,200 feet away while dispersing from their natal pond (Science Applications International Corporation, unpublished data). These data show that many California tiger salamanders travel far while still in the juvenile stage. Post-breeding movements away from breeding ponds by adults appear to be much smaller. During post-breeding emigration from aquatic habitat, radio-equipped adult tiger salamanders were tracked to burrows between 62 to 813 feet from their breeding ponds (Trenham 2001). These reduced movements may be due to adult California tiger salamanders exiting the ponds with depleted physical reserves, or drier weather conditions typically associated with the post-breeding upland migration period.

California tiger salamanders are also known to use several successive burrows at increasing distances from an associated breeding pond. Although previously sited studies provide information regarding linear movement from breeding ponds, upland habitat features appear to have some influence on movement. Trenham (2001) found that radio-tracked adults were more abundant in grasslands with scattered large oaks (*Quercus* spp.), than in more densely wooded areas. Based on radio-tracked adults, there is no indication that certain habitat types are favored as terrestrial movement corridors (Trenham 2001). In addition, captures of arriving adults and dispersing new metamorphs were evenly distributed around two ponds completely encircled by drift fences and pitfall traps. Thus, it appears that dispersal into the terrestrial habitat occurs randomly with respect to direction and habitat types.

Threats: Documented or potential tiger salamanders predators include coyotes (*Canis latrans*), raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), opossums (*Didelphis virginiana*), egrets (*Egretta species*), great blue herons (*Ardea herodias*), crows (*Corvus brachyrhynchos*), ravens (*Corvus corax*), garter snakes (*Thamnophis species*), bullfrogs, California red-legged frogs, mosquito fish, and crayfish (*Procrampus* spp.).

The California tiger salamander is imperiled throughout its range due to a variety of human activities (69 FR 47212). Current factors associated with declining tiger salamander populations include continued habitat loss and degradation due to agriculture and urbanization; hybridization with the non-native eastern tiger salamander (*Ambystoma tigrinum*) (Fitzpatrick and Shaffer 2004; Riley *et al.* 2003); and predation by introduced species. California tiger salamander populations are likely threatened by multiple factors but continued habitat fragmentation and colonization of non-native salamanders may represent the most significant current threats. Habitat isolation and fragmentation within many watersheds have precluded dispersal between sub-populations and jeopardized the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange individuals through dispersal, and are capable of colonizing or "rescuing" extinct habitat patches). Other threats include predation and competition from introduced exotic species; possible commercial over-utilization; diseases; various chemical contaminants; road kill; and certain unrestrictive mosquito and rodent control operations. Currently, these various primary and secondary threats are largely not being offset by existing Federal, State, or local regulatory mechanisms. The tiger salamander is also prone to chance environmental or demographic events, to which small populations are particularly vulnerable.

Environmental Baseline

According to the biological assessment, the project is located within the known range of the California tiger salamander, and suitable breeding, upland and dispersal habitat is present in the action area and vicinity – seasonal wetland, California annual grassland, mixed willow riparian forest, and ruderal-agricultural vegetation communities. As previously described, these habitats within the action area have been subject to regular disturbance by residents including landscaping, intense livestock grazing and farming of row crops, which can temporarily modify key habitat features resulting in spatial-temporal habitat loss and injury or death to salamanders. Some land-use practices if implemented properly, which appear to be the case for lands within the action area, can increase the utility of the land for salamanders, such as a managed grazing regime to optimize grassland vegetation height and density, grazing exclusion fencing around sensitive habitat, and the establishment and management of stock ponds. Land use practices associated with the rural residences within the action area have resulted in a net loss of habitat for salamanders through conversion and farming row crops; however, habitat suitability within the grasslands and ruderal areas has been maintained, and in some cases, may have been improved due to managed livestock grazing.

Fourteen occurrences have been reported within 5 miles of the project footprint dating from 1990 to 2005 and are primarily located in the foothills north of SR 152; nine of these are located within 1.24 mile (the maximum recorded dispersal distance) of the project footprint. All nine occurrences comprise juveniles observed within cattle ponds and seasonal wetlands within 1,200 feet of SR 152, which indicates that the entire project, i.e. both segments 1 and 2, is within the dispersal range of the species. Breeding was reported from a seasonal wetland immediately adjacent to the SR 152 at PM 19.25 which is located near the entrance to a concrete box culvert that is hydrologically connected to Holstein Creek. The biological assessment states that localized concentrations of ground squirrel activity are present throughout the action area within upland habitat comprising California annual grassland and ruderal-agricultural. This habitat provides year-round refugia and foraging habitat for tiger salamanders. In addition, there are no barriers to impede movement or dispersal of California tiger salamanders between potential breeding habitat (cattle ponds and seasonal wetlands) and upland habitat within the action area. Based on the prevalence of California tiger salamanders within the action area, connectivity to adjacent occupied habitats and the presence of suitable habitat within and adjacent to the action area, the Service has determined there is a reasonable potential for California tiger salamanders to breed, inhabit and disperse through the action area.

California Tiger Salamander Critical Habitat

Critical habitat is defined in Section 3 of the Act as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR 424.12(b)). The Service is required to list the known primary constituent elements together with the critical habitat description. Such physical and biological features include, but are not limited to, the following:

1. Space for individual and population growth, and for normal behavior;
2. Food, water, air, light, minerals, or other nutritional or physiological requirements;
3. Cover or shelter;
4. Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and
5. Generally, habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

Critical habitat was designated on August 23, 2005 in 19 counties for the Central Valley DPS and is divided into four geographic regions: (1) Central Valley Region; (2) Southern San Joaquin Region; (3) East Bay Region; and (4) Central Coast Region (70 FR 49379). The rule identifies approximately 199,109 acres within 32 critical habitat units.

The primary constituent elements for the tiger salamander are based on our current knowledge of the life history, biology, and ecology of the species and the relationship of its essential life history functions to its habitat, we have determined that the tiger salamander requires the following primary constituent elements: (1) Standing bodies of fresh water including natural and manmade (e.g., stock) ponds, vernal pools, and other ephemeral or permanent water bodies which typically support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall; (2) Upland habitats adjacent and accessible to breeding ponds that contain small mammal burrows or other underground habitat that tiger salamanders depend upon for food, shelter, and protection from the elements and predation; and (3) Accessible upland dispersal habitat between occupied locations that allow for movement between such sites.

1. *Primary Constituent Element 1:* Standing bodies of fresh water (including natural and manmade (e.g., stock)) ponds, vernal pools, and other ephemeral or permanent water bodies which typically support inundation during winter rains and hold water for a minimum of 12 weeks in a year of average rainfall. This requisite aquatic habitat is essential for the tiger salamander for providing space, food, and cover necessary to support reproduction and to sustain early life history stages of larval and juvenile tiger salamander. Aquatic and breeding habitats consist of fresh water bodies, including natural and artificially made (e.g., stock) ponds, vernal pools, and vernal pool complexes. To be considered essential, aquatic and breeding habitats must have the capability to hold water for a minimum of 12 weeks in the winter or spring in a year of average rainfall, the amount of time needed for salamander larvae to metamorphose into juveniles capable of surviving in upland habitats. During periods of drought or less-than-average rainfall, these sites may not hold water long enough for individuals to complete metamorphosis; however, these sites would still be considered essential because they constitute breeding habitat in years of average rainfall.
2. *Primary Constituent Element 2:* Upland habitats adjacent and accessible to and from breeding ponds that contain small mammal burrows or other underground habitat that tiger salamanders depend upon for food, shelter, and protection from the elements and predation. These essential upland habitats containing underground refugia are essential for the survival of adult tiger salamanders and juveniles that have recently undergone metamorphosis. Adult and juvenile tiger salamanders are primarily terrestrial; adult tiger

salamanders enter aquatic habitats only for relatively short periods of time to breed. For the majority of their life cycle, tiger salamanders survive within upland habitats containing underground refugia in the form of small mammal burrows. The tiger salamander cannot persist without upland underground refugia. These underground refugia provide protection from the hot, dry weather typical of California in the nonbreeding season. The tiger salamander also forages in the small mammal burrows and rely on the burrows for protection from predators. The presence of small burrowing mammal populations is essential for constructing and maintaining burrows. Without the continuing presence of small mammal burrows in upland habitats, the tiger salamander would not be able to survive.

3. *Primary Constituent Element 3: Accessible upland dispersal habitat between occupied locations that allow for movement between such sites.* These dispersal habitats are essential for the conservation of the tiger salamander. Protecting the ability of tiger salamander to move freely across the landscape in search of suitable aquatic and upland habitats is essential in maintaining gene flow, recolonization, and population structure. Movement between areas containing suitable upland and aquatic habitats (i.e., dispersal) is restricted due to inhospitable conditions around and between areas of suitable habitats. Because many of the areas of suitable habitats may be small and support small numbers of salamanders, local extinction of these small units may be common. Essential dispersal habitats generally consist of upland areas adjacent to essential aquatic habitats that are not isolated from essential aquatic habitats by barriers that tiger salamanders cannot cross. Essential dispersal habitats provide connectivity among suitable aquatic and upland habitats. While the tiger salamanders can bypass many obstacles, and do not require a particular type of habitat for dispersal, the habitats connecting essential aquatic and upland habitats need to be free of barriers (e.g., a physical or biological feature that prevents salamanders from dispersing beyond the feature) to function effectively. Examples of barriers are areas of steep topography devoid of soil or vegetation. Agricultural lands such as row crops, orchards, vineyards, and pastures do not constitute barriers to the dispersal of tiger salamander.

The proposed project is located within the East Bay Geographic Region, which covers portions of Alameda County, south to Santa Benito and Santa Clara counties, and west to the eastern portions of San Joaquin and Merced Counties. The East Bay Region includes 14 critical habitat units totaling approximately 68,873 acres. The 14 critical habitat units within the East Bay Region occur in the Livermore, Central Coast, and San Joaquin vernal pool regions. Special management requirements for these units include management of erosion and sedimentation, pesticide application, introduction of predators such as bullfrogs and mosquito fish, disturbance activities associated with development that may alter the hydrologic functioning of the aquatic habitat, upland disturbance activities that may alter upland refugia and dispersal habitat, and activities such as road development and widening that may develop barriers for dispersal.

With the designation of critical habitat, the Service intends to conserve the physical and biological features that are essential to the conservation of the species, through the identification of the appropriate quantity and spatial arrangement of the primary constituent elements sufficient to support the life-history functions of the species. Because not all life-history functions require all the primary constituent elements, not all areas designated as critical habitat will contain all the

primary constituent elements. Please refer to 70 FR 49379 for additional information on California tiger salamander critical habitat.

Environmental Baseline

Nearly the entire action area is located within designated critical habitat San Felipe Unit (Unit 12) in the East Bay Region issued on August 23, 2005 (70 FR 49380), which encompasses the entire project footprint for Segments 1 and 2 except the last tenth of a mile of the eastern project terminus, and does not include habitat within the action area south the western terminus of Segment 1 and the eastern terminus of Segment 2. This unit is approximately 6,642 acres; the portion within the action area and subject to ground disturbance totals approximately 8.50 acres, which represents approximately one-tenth of one percent of the total unit acreage. This unit is comprised of 6,642 acres of habitat and is essential to the conservation of the species because it is needed to maintain the current geographic and ecological distribution of the species within the Bay Area Geographic Region. Unit 12 represents part of the center of the distribution within the Bay Area Geographic Region and the southernmost portion of Santa Clara County, northern San Benito County, and center of the Central Coast vernal pool region. It contains all three of the PCEs and 10 extant occurrences of the species. Unit 12 generally is found west of Camadero, south of Kickham Peak, east of San Joaquin Peak, and north of Dunneville. Threats include erosion and sedimentation, pesticide application, introduction of predators such as bullfrogs and mosquito fish, disturbance activities associated with development that may alter the hydrologic functioning of the aquatic habitat, upland disturbance activities that may alter upland refugia and dispersal habitat, and activities such as road development and widening that may develop barriers for dispersal.

Designated critical habitat within the action area contains all three PCE's: aquatic (PCE 1), upland (PCE 2) and dispersal habitat (PCE 3). Nearly the entire project footprint is located within designated critical habitat with the exception of the last tenth of a mile at the eastern project terminus. Critical habitat within Segment 1 encompasses the entire project footprint and extends south of SR 152 to encompass San Felipe Lake. The edge of the unit boundary within Segment 2 forms a portion of the southern critical habitat boundary, which coarsely follows SR 152. Aquatic habitat within the project footprint consists of a single habitat feature; a 0.07-acre seasonal wetland located at PM 19.25. This wetland, located within a shallow depression near the entrance of a box culvert that crosses under SR 152, and has supported tiger salamander breeding in recent years. Outside the project footprint, but within the action area, are several cattle ponds; all of which are located within the action area north of SR 152. Upland and dispersal habitat comprise lands characterized by California annual grassland, blue-gum eucalyptus, remnant mixed oak woodland and ruderal-agricultural vegetation communities. The majority of this area comprises California annual grassland with minimal structural features and scattered ground squirrel burrows that provide shelter. Upland and dispersal habitat is of high quality east of SR 152; habitat west of SR 152 is of marginal quality largely due to the intense land use practices including farming of row crops and conversion to rural residences.

EFFECTS OF THE ACTION

California Red-legged Frog and California Tiger Salamander

The proposed project will likely adversely affect the threatened California red-legged frog by killing, harming and/or harassing juveniles and adults inhabiting areas of suitable non-breeding aquatic and upland habitat. Project effects on larvae and tadpoles will be avoided through design modifications that avoid suitable aquatic breeding habitat, minimize disturbance to riparian habitat, and temporal work windows that restrict work to the dry season from April 15 to October 15. The aspects of the proposed action most likely to affect the California red-legged frog are largely confined to the construction phase of the project and associated with the mixed willow riparian forest along Ortega Creek within Segment 2.

The proposed project will likely adversely affect the California tiger salamander by killing, harming and/or harassing juveniles and adults inhabiting burrows and other upland refugia within grasslands and ruderal habitat. Project effects on larvae and disruption to breeding and larval maturation will be avoided through confining construction to temporal work windows that restrict work to the dry season from April 15 to October 15 and design modifications that avoid seasonal wetland breeding habitat. Aspects of the proposed action most likely to affect the California tiger salamander are largely confined to the construction phase within Segments 1 and 2 pertaining to surface disturbance within non-paved, vegetated habitat during the road widening and construction of the soil nail walls.

The construction of soil nail walls will create a vertical hazard for frogs and salamanders, fragment habitat, and will present a movement barrier where gentle slopes currently provide easy access to habitats on either side of SR 152. The soil nail walls will affect the ability of salamanders to disperse across SR 152 and may result in individuals spending more time on the road and roadside verge in an attempt to reach habitat on the other side of the highway, thereby subjecting them to increased risk of mortality or harm from vehicle strikes. However, such restrictions may benefit the species since habitat west of the highway is highly disturbed due to farming of row crops and rural residences; hence, less able to support one or more life history stages. The soil nail walls may also provide a beneficial function by redirecting salamanders inhabiting lands east of SR 152 back toward suitable habitats to the east and away from the highway, which is of higher quality and supports all life history stages of the species.

Construction noise, vibration, and increased human activity during the construction phase of the project may interfere with normal behaviors – feeding, sheltering, movement between refugia and foraging grounds, and other essential behaviors of the California red-legged frog and California tiger salamander – resulting in avoidance of areas that have suitable habitat but intolerable levels of disturbance. Short-term temporal effects will occur when vegetative cover is removed along riparian corridors and within upland habitat during project construction. Caltrans proposes to minimize these effects by locating construction staging, storage and parking areas outside of sensitive habitat; clearly marking construction work boundaries, and revegetating all unpaved areas disturbed by project activities.

If unrestricted, the type of construction activities proposed have the potential to result in the introduction of chemical contaminants to the site. Frogs and salamanders using these areas could be exposed to any contaminants that are present at the site. Exposure pathways could include

inhalation, dermal contact, direct ingestion, or secondary ingestion of contaminated soil, plants or prey species. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. However, Caltrans proposes to eliminate these risks by implementing a Storm Water Pollution Prevention Plan (SWPPP), erosion control Best Management Practices (BMP) and a Spill Response Plan, which will consist of refueling, oiling or cleaning of vehicles and equipment a minimum of 50 feet from aquatic resources; installing coir rolls, straw wattles and/or silt fencing to capture sediment and prevent runoff or other harmful chemicals from entering the wetland; and locating staging, storage and parking areas away from aquatic habitats.

Preconstruction surveys and the relocation of individual California red-legged frogs and California tiger salamanders may avoid injury or mortality; however, capturing and handling frogs may result in stress and/or injury during handling, containment, and transport. Caltrans proposes to minimize these effects by using qualified Service-approved biologists, limiting the duration of handling, and relocating amphibians to suitable nearby habitat.

If unrestricted, biologists and construction workers traveling to the action area from other project sites may transmit diseases by introducing contaminated equipment. The chance of a disease being introduced into a new area is greater today than in the past due to the increasing occurrences of disease throughout amphibian populations in California and the United States. It is possible that chytridiomycosis, caused by chytrid fungus (*Batrachochytrium dendrobatidis*), may exacerbate the effects of other diseases on amphibians or increase the sensitivity of the amphibian to environmental changes (e.g., water pH) that reduce normal immune response capabilities (Bosch *et al.* 2001, Weldon *et al.* 2004). Caltrans proposes to eliminate these risks by implementing proper decontamination procedures prior to and following aquatic surveys and handling of frogs and salamanders will minimize the risk of transferring diseases through contaminated equipment or clothing. Relocation of frogs and salamanders out of construction areas that would otherwise result in mortality or injury if capture and relocation was not implemented increases the likelihood of survival of those individuals when they are handled properly and released nearby.

Temporary effects comprise areas denuded, manipulated, or otherwise modified from their existing, pre-project conditions thereby removing one or more essential components of a listed species' habitat as a result of project activities that include, but are not limited to, construction, staging, storage, lay down, vehicle access, parking, etc. Temporary effects must be restored to baseline habitat values or better within one year following initial disturbance or they will be considered permanent. Areas subjected to ongoing operations and maintenance are considered permanent even if they are restored within one year following initial disturbance. Affected areas not fulfilling these criteria are considered permanent. Construction within terrestrial habitat, i.e. shoulder widening, addition of a left turn pocket and construction of soil nail walls, would result in the permanent loss and/or degradation of 2.60 acres of California red-legged frog upland habitat and 1.91 acres of California tiger salamander upland and dispersal habitat; and the temporary loss and/or degradation of 6.61 acres of California red-legged frog upland habitat and 6.59 acres of California tiger salamander upland and dispersal habitat. The 0.71-acre difference between effects acreages between the two species is attributed to effects to mixed willow riparian forest and riverine habitat considered suitable habitat for the California red-legged frog, but is not considered suitable habitat for the California tiger salamander.

The amount of take resulting from construction activities and the removal of habitat will be partially minimized by installing environmentally sensitive area fencing to keep workers from straying into otherwise undisturbed habitat; erecting wildlife exclusion fencing to deter frogs and salamanders from wandering onto the construction site; implementing storm water and erosion BMPs; educating workers about the presence of California red-legged frogs and California tiger salamanders, their habitat, identification, regulatory laws, and avoidance and minimization measures; and requiring a Service-approved biologist to be present to monitor project activities within or adjacent to suitable habitat.

The permanent and temporary loss and/or degradation of California red-legged frog and California tiger salamander habitat will result in the take of all frogs and salamanders within these areas as a direct result of habitat loss. As outlined in Table 2, Caltrans has proposed a habitat compensation measure at Doan Ranch or another Service/CDFG approved location to provide minimization for the effects on the California red-legged frog and California tiger salamander.

Proposed California Red-legged Frog Critical Habitat

The proposed action will result in the permanent loss and/or degradation of 0.26-acre of upland habitat (PCE 3) comprising mixed willow riparian forest between PM 18.9 and 19.0 west of the intersection of SR 152 and Lover's Lane, and remnant mixed oak woodland adjacent to the seasonal wetland located at PM 19.25. The proposed action will result in the temporary loss and/or degradation to 1.51 acres of non-breeding aquatic (PCE 2) (0.07-acre seasonal wetland at PM 19.25) and upland habitat comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural, and urban vegetation communities. All effects to critical habitat are confined to Segment 2 from PM 18.9 to PM 19.35. The portion of critical habitat falling within the project footprint comprises a portion of the southern critical habitat boundary which encompasses predominately undeveloped foothills of southeastern Santa Clara County. Caltrans has minimized effects to critical habitat by incorporating design modifications that avoid or minimize disturbance or loss of designated critical habitat containing PCEs. Permanent loss and/or degradation of 0.26-acre supporting PCE 3 and temporary loss and/or degradation of 1.51 acres supporting PCE 2 in this portion of the California red-legged frog critical habitat will not compromise or assist in achieving the unit goals of preventing further habitat fragmentation or providing connectivity to units farther north in Santa Clara, Alameda, and Contra Costa counties, nor is it expected to exacerbate a known threat of predation by non-native species within this unit.

California Tiger Salamander Critical Habitat

The proposed action will not result in the permanent loss and/or degradation of habitat within Segment 1, but it will result in the permanent loss and/or degradation of 0.94-acre of upland (PCE 2) and dispersal habitat (PCE 3) comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural, and urban vegetation communities. The proposed action will result in the temporary loss and/or degradation to 4.32 acres of upland (PCE 2) and dispersal habitat (PCE 3) (0.25-acre within Segment 1 and 4.07 acres within Segment 2) comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural and urban vegetation communities. All permanent effects to critical habitat are confined to Segment 2 from PM 18.6 to PM 19.5. Caltrans has minimized effects to critical habitat by incorporating design modifications that avoid or minimize disturbance or loss of designated critical habitat containing

PCEs. Permanent loss and/or degradation of 0.94-acre supporting PCE 2 and 3, and temporary loss and/or degradation of 4.32 acres supporting PCE 2 and 3 in this portion of the California tiger salamander critical habitat will avoid breeding habitat and will not appreciably diminish the overall value or function of San Felipe Unit (Unit 12).

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Ongoing rural residential landscaping, farming of row crops and managed livestock grazing contribute to the cumulative effects of the California red-legged frog and California tiger salamander within the action area. No other State, Tribal, local or private actions are anticipated in the action area within the foreseeable future.

The global average temperature has risen by approximately 0.6 degrees centigrade during the 20th Century (International Panel on Climate Change 2001, 2007; Adger *et al.* 2007). There is an international scientific consensus that most of the warming observed has been caused by human activities (International Panel on Climate Change 2001, 2007; Adger *et al.* 2007), and that it is “very likely” that it is largely due to increasing concentrations of greenhouse gases (carbon dioxide, methane, nitrous oxide, and others) in the global atmosphere from burning fossil fuels and other human activities (Cayan 2005, EPA Global Warming webpage <http://yosemite.epa.gov>; Adger *et al.* 2007). Eleven of the twelve years between 1995 and 2006 rank among the twelve warmest years since global temperatures began in 1850 (Adger *et al.* 2007). The warming trend over the last fifty years is nearly twice that for the last 100 years (Adger *et al.* 2007). Looking forward, under a high emissions scenario, the International Panel on Climate Change estimates that global temperatures will rise another four degrees centigrade by the end of this Century; even under a low emissions growth scenario, the International Panel on Climate Change estimates that the global temperature will go up another 1.8 degrees centigrade (International Panel on Climate Change 2001). The increase in global average temperatures affects certain areas more than others. The western United States, in general, is experiencing more warming than the rest of the Nation, with the 11 western states averaging 1.7 degrees Fahrenheit warmer temperatures than this region’s average over the 20th Century (Saunders *et al.* 2008). California, in particular, will suffer significant consequences as a result of global warming (California Climate Action Team 2006). In California, reduced snowpack will cause more winter flooding and summer drought, as well as higher temperatures in lakes and coastal areas. The incidence of wildfires in the Golden State also will increase and the amount of increase is highly dependent upon the extent of global warming. No less certain than the fact of global warming itself is the fact that global warming, unchecked, will harm biodiversity generally and cause the extinction of large numbers of species. If the global mean temperatures exceed a warming of two to three degrees centigrade above pre-industrial levels, twenty to thirty percent of plant and animal species will face an increasingly high risk of extinction (International Panel on Climate Change 2001, 2007). The mechanisms by which global warming may push already imperiled species closer or over the edge of extinction are multiple. Global warming increases the frequency of extreme weather events, such as heat waves, droughts, and storms (International Panel on Climate Change 2001, 2007; California Climate Action Team 2006; Lenihan *et al.* 2003).

Extreme events, in turn may cause mass mortality of individuals and significantly contribute to determining which species will remain or occur in natural habitats. Ongoing global climate change (Anonymous 2007; Inkley *et al.* 2004; Adger *et al.* 2007; Kanter 2007) likely imperils the California red-legged frog, California tiger salamander and the resources necessary for their survival. Since climate change threatens to disrupt annual weather patterns, it may result in a loss of their habitats and/or prey, and/or increased numbers of their predators, parasites, and diseases. Where populations are isolated, a changing climate may result in local extinction, with range shifts precluded by lack of habitat.

Conclusion

After reviewing the current status of the California red-legged frog and California tiger salamander; the environmental baseline for each species; the effects of the proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project and the cumulative effects; it is the Service's biological opinion that the project, as proposed, is likely to result in take of California red-legged frog and California tiger salamander, but is not likely to jeopardize the continued existence of these species. The proposed project comprises widening and soil nail wall installation along an existing roadway adjacent to upland habitat for these species. The project was designed to avoid taking habitat associated with single tiger salamander breeding pool located within the action area and limiting construction to the non-breeding season will aid in avoiding effects to breeding salamanders. Although the existing road way and the proposed modifications are likely to continue to reduce populations within dispersal range of the action area, the adverse effect to the larger population within Santa Clara County is unlikely to significantly affect the recovery of the species. Given appropriate habitat compensation and the incorporation of appropriate design measures to minimize effects to California red-legged frogs and California tiger salamanders would likely alleviate increasing the risk of take to the local population.

After reviewing the current status of proposed critical habitat for the California red-legged frog and designated critical habitat for the California tiger salamander, the environmental baseline for each critical habitat, effects of the proposed action, and cumulative effects, the Service finds that the project, as proposed, is not likely to destroy or adversely modify critical habitat for either species based upon the statutory provisions of the Act. The local effects resulting from the proposed action will not result in the inability of range-wide critical habitat to remain functional or serve its intended recovery role for these species based on the location of effected critical habitat along an existing roadway and minimal permanent loss of habitat.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat

modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this Incidental Take Statement.

The measures described below are non-discretionary, and must be implemented by Caltrans so that they become binding conditions of any grant or permit issued to Caltrans, as appropriate, in order for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this incidental take statement. If Caltrans (1) fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

AMOUNT OR EXTENT OF TAKE

California Red-Legged Frog

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect due to their cryptic nature and wariness of humans. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. Due to the difficulty in quantifying the number of California red-legged frogs that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed action as the injury and mortality of no more than two (2), and the capture, harm and harassment of all California red-legged frogs inhabiting or utilizing the 9.21 acres (2.60 acres of permanent loss and/or degradation of upland habitat and 6.61 acres of temporary loss and/or degradation of upland habitat) of suitable habitat identified in the biological assessment. Incidental take of eggs or larval frogs is not anticipated, since the project has been designed to avoid affecting breeding habitat. The Service anticipates that proposed action may result in take of juvenile and adult life history stages as a result of habitat loss/degradation, construction-related disturbance, or capture and relocation. Upon implementation of the following Reasonable and Prudent Measures, juvenile and adult California red-legged frogs within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

California Tiger Salamander

The Service anticipates that incidental take of the California tiger salamander will be difficult to detect because of its cryptic nature, subterranean lifestyle, and predominately nocturnal behavior. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. Due to the difficulty in quantifying the number of California tiger salamanders that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed action, the Service is quantifying take incidental to the proposed action as the injury and mortality of no more than two (2), and the capture, harm and harassment of all California tiger salamanders inhabiting or utilizing the 8.5 acres (1.91 acres of permanent loss and/or

degradation of upland and dispersal habitat and 6.59 acres of temporary loss and/or degradation of upland and dispersal habitat) of suitable habitat identified in the biological assessment. Incidental take of eggs or larval salamanders is not anticipated, since the project has been designed to avoid affecting breeding habitat. The Service anticipates that proposed action may result in take of juvenile and adult life history stages as a result of habitat loss/degradation, construction-related disturbance, or capture and relocation. Upon implementation of the following Reasonable and Prudent Measures, juvenile and adult California tiger salamanders within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

EFFECT OF THE TAKE

The Service has determined that this level of anticipated take is not likely to result in jeopardy to the California red-legged frog and California tiger salamander and is not likely to jeopardize the continued existence of these species. Critical habitat for the California red-legged frog and California tiger salamander will not be adversely modified or destroyed, and the proposed action will not diminish the value of the critical habitat, or prevent the critical habitat from sustaining its role in the conservation and recovery of the species.

REASONABLE AND PRUDENT MEASURES

The following reasonable and prudent measure is necessary and appropriate to minimize the effect of the proposed action on the California red-legged frog and California tiger salamander:

1. Harassment, harm, injury, capture and mortality to the California red-legged frog and California tiger salamander shall be minimized by fully implementing the Conservation Measures in this Biological Opinion and Conference Report, and adhering to the minimization measures described below in the Terms and Conditions.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans shall ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above.

1. The following Terms and Conditions implement the Reasonable and Prudent Measure:
 - a. Caltrans shall include Special Provisions that include the Conservation Measures and the Terms and Conditions of this Biological Opinion and Conference Report in the solicitation for bid information for all contracts for the project that are issued by them to all contractors. In addition, Caltrans shall educate and inform contractors involved in the project as to the requirements of the Biological Opinion and Conference Report.

b. To reduce the overall level of take of the California red-legged frog and California tiger salamander, and loss of critical habitat containing PCEs for California red-legged frog and California tiger salamander, Caltrans shall compensate for the effect of incidental take of species resulting from the net loss of habitat and temporal loss between the time the effects are incurred and the time when the compensation habitat is fully functional. Caltrans shall continue to work with the Service and CDFG to identify suitable habitat that comprises high quality breeding, foraging, sheltering, migration and/or dispersal habitat, or provides a functional linkage between areas of occupied habitat that facilitates the (re)colonization of suitable habitat from source populations. Caltrans shall comply with all applicable CDFG regulations pertaining to mitigation for species designated as fully protected and/or listed by the State. Alternatively, if a State Endangered Species Take Permit for California tiger salamander is not required by CDFG at the time the effects associated with the project occur, Caltrans will not be required to obtain CDFG approval for the conservation actions as described in this Biological Opinion. Caltrans shall submit a Conceptual Compensation Plan to the Service detailing on and off-site habitat compensation schemes – such as Doan Ranch or other potential land acquisition options – and timelines to achieve full habitat functions and values within 6 calendar months following the issuance of this biological opinion. Compensation may consist of a combination of on and off-site habitat preservation, restoration and/or enhancement. Caltrans shall permanently protect 15.07 acres of California red-legged frog and 12.98 acres of California tiger salamander habitat through a combination of the following options:

- i. **On-site Habitat Restoration.** Caltrans shall restore temporarily disturbed habitat(s), at a minimum, to original contours and baseline conditions. Credit for on-site restoration of areas subject to temporary disturbance shall be achieved once it is returned to and functions at baseline conditions or better as determined by the Service.
- ii. **Conservation Bank Credits.** Caltrans shall purchase conservation bank credits at a Service-approved conservation bank whose service area encompasses the action area for the species listed above. Conservation credits shall be purchased and documentation provided to the Service comprising the Agreement for Sale of Conservation Credits, Bill of Sale, Payment Receipt and Updated Credit Ledger within 30 calendar days prior to project ground-breaking.
- iii. **Off-site Habitat Acquisition & In-perpetuity Preservation.** Caltrans shall contribute toward the acquisition of habitat approved by the Service. The habitat shall have a conservation easement or other appropriate entitlement, management plan, and endowment to manage the habitat in perpetuity; all of which shall be reviewed and approved by the Service, and completed within 18 calendar months following project ground-breaking. Acquisition of land shall either be through easement or fee title. The conservation easement shall name the Service as a third-party beneficiary and shall be held by an entity qualified to hold conservation

easements subject to Service approval. An endowment to manage the land and monitor the conservation easement shall be held by a Service-approved entity in an amount agreed to by the Service. A management plan shall be developed prior to or concurrent to the acquisition of land and shall include, but is not limited to: a description of existing habitats and – if applicable – planned habitat creation, restoration and/or enhancement; monitoring criteria for California red-legged frog and California tiger salamander; an integrated pest management and monitoring plan to control invasive species to the extent practicable; habitat creation, restoration and/or enhancement success criteria; and adaptive management strategies. Acceptable habitat includes Doan Ranch in Santa Clara County as described in the Conservation Measures, the Biological Assessment, and letter from Caltrans dated April 24, 2009. Other locations will be considered by the Service on a case-by-case basis.

- c. The Resident Engineer or their designee shall be responsible for implementing the Conservation Measures and Terms and Conditions of this Biological Opinion and Conference Report, and shall be the point of contact for the proposed action. The Resident Engineer or their designee shall maintain a copy of this Biological Opinion and Conference Report onsite whenever construction is in progress. Their name(s) and telephone number(s) shall be provided to the Service at least thirty (30) calendar days prior to ground-breaking at the project. Prior to ground-breaking, the Resident Engineer shall submit a letter to the Service verifying he/she is in possession of a copy of this Biological Opinion and Conference Report, and has read and understands the Conservation Measures and Terms and Conditions.
- d. The Service-approved biologist(s) shall be onsite during all activities that may result in the take of the California red-legged frog and California tiger salamander. The qualifications of the biologist(s) shall be presented to the Service for review and written approval at least thirty (30) calendar days prior to ground-breaking at the project site. The Service-approved biologist(s) shall keep a copy of this Biological Opinion and Conference Report in their possession when onsite. The Service-approved biologist(s) shall be given the authority to communicate verbally or by telephone, email or hardcopy with Caltrans personnel, construction personnel or any other person(s) at the project site or otherwise associated with the project through the Resident Engineer or their designee. The Service-approved biologist(s) shall have oversight over implementation of the Terms and Conditions in this Biological Opinion and Conference Report, and shall, through the Resident Engineer or their designee, have the authority to stop project activities if they determine any of the requirements associated with these Terms and Conditions are not being fulfilled. If the Service-approved biologist(s) exercises this authority, the Service shall be notified by telephone and email within 24 hours. The Service contact is Chris Nagano, Division Chief, Endangered Species Program, Sacramento Fish and Wildlife Office at telephone (916) 414-6600.
- e. There shall be an adequate number of Service-approved biologists to monitor the effects of the project on the California red-legged frog and California tiger

salamander. The number of Service-approved biologists who are on site shall be determined in cooperation with the Service/CDFG based on the size and scope of the project and the extent of activities that may result in the take of listed species.

- f. The Service-approved biologist shall maintain monitoring records that include: (1) the beginning and ending time of each day's monitoring effort; (2) a statement identifying the species, including general wildlife species, were encountered, including the time and location when such species were found; (3) the time the specimen was identified and by whom and its condition; and (4) a description of any actions taken. The biological monitor shall maintain complete records in their possession while conducting monitoring activities and shall immediately surrender records to the Service upon request. All monitoring records shall be provided to the Service upon completion of the monitoring work.
- g. If verbally requested through the Resident Engineer or Construction Inspector, before, during, or upon completion of ground breaking and construction activities, Caltrans shall ensure the Service, CDFG, and/or their designated agents can immediately and without delay, access and inspect the project site for compliance with the proposed project description, conservation measures, and terms and conditions of this Biological Opinion, and to evaluate project effects to the California red-legged frog, California tiger salamander, and their habitat.
- h. Caltrans shall require as part of the construction contract that all contractors comply with the Act in the performance of the work as described in the Project Description of this Biological Opinion. The contractor(s) may independently seek off-site staging locations outside of the Caltrans right-of-way, which shall be subject to the requirements of endangered species consultations with the Service and CDFG. In such cases, all agency permits, agreements, or consultations for off-site staging locations shall be the responsibility of the contractor(s).

REPORTING REQUIREMENTS

Injured California red-legged frogs and California tiger salamanders must be cared for by a licensed veterinarian or other qualified person such as the Service-approved biologist. Dead animals shall be placed in a zip-lock® plastic storage bag with a piece of paper indicating the date, time, location and name of the person who found it. The bag shall be placed in a freezer located in a secure location until instructions are received from the Service regarding the disposition of the specimen or until the Service takes custody of the specimen. The Service must be notified within 24 hours of the discovery of death or injury resulting from project-related activities or is observed at the project site. Notification shall include the date, time, and location of the incident or finding of a dead or injured animal clearly indicated on a USGS 7.5-minute quadrangle and other maps at a finer scale, as requested by the Service, and any other pertinent information. The Service contacts are Chris Nagano, Division Chief, Endangered Species Program at the Sacramento Fish and Wildlife Office (916)414-6600, and Dan Crum, Resident Agent-in-Charge of the Service's Law Enforcement Division at (916) 414-6660.

Caltrans shall submit a post-construction compliance report prepared by the on-site biologist to the Sacramento Fish and Wildlife Office within sixty (60) calendar days of the date of the completion of construction activity. This report shall detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on the California red-legged frog and California tiger salamander, if any; (v) occurrences of incidental take of any of these species, if any; (vi) documentation of employee environmental education; and (vii) other pertinent information. The reports shall be addressed to Chris Nagano, Division Chief, Endangered Species Program, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Room W-2605, Sacramento, California 95825-1846.

Caltrans shall report to the Service any information about take or suspected take of listed wildlife species not authorized by this biological opinion. Caltrans must notify the Service via electronic mail and telephone within twenty-four (24) hours of receiving such information. Notification must include the date, time, location of the incident or of the finding of a dead or injured animal, and photographs of the specific animal. The individual animal shall be preserved, as stated above, and held in a secure location until instructions are received from the Service regarding the disposition of the specimen or the Service takes custody of the specimen. The Service contacts are Chris Nagano, Division Chief, Endangered Species Program, Sacramento Fish and Wildlife Office at Chris_Nagano@fws.gov and (916) 414-6600, and Resident Agent-in-Charge Dan Crum of the Service's Law Enforcement Division at (916) 414-6660.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that can be implemented to further the purposes of the Act, such as preservation of endangered species habitat, implementation of recovery actions, or development of information and data bases. We have the following conservation recommendations:

1. Caltrans should assist the Service in implementing recovery actions identified in the *Draft Recovery Plan for the Least Bell's Vireo* (Service 1998b), *Recovery Plan for the California Red-legged Frog* (Service 2002), and *Recovery Plan for Upland Species of the San Joaquin Valley, California* (Service 1998a).
2. Caltrans should consider participating in the planning for the Santa Clara Valley Habitat Conservation Plan.
3. Caltrans should consider participating in the planning for a regional habitat conservation plan for the California red-legged frog, California tiger salamander, and other listed and sensitive species.
4. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the California red-legged frogs and California tiger salamanders, and other appropriate species. Such banking systems also could possibly be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate.

5. Sightings of any listed or sensitive animal species should be reported to the California Natural Diversity Database of the California Department of Fish and Game. A copy of the reporting form and a topographic map clearly marked with the location the animals were observed also should be provided to the Service.
6. Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage by California red-legged frog, California tiger salamander, San Joaquin kit fox, and other listed and common animals. Caltrans should include photographs, plans, and other information in their biological assessments if they incorporate "wildlife friendly" crossings into their projects.
7. Caltrans should provide roosting habitat for bats, when designing bridges, overpasses and other suitable structures whenever possible.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed and/or proposed species or their habitats, the Service requests notification of the implementation of these recommendations.

REINITIATION--CLOSING STATEMENT

This concludes the formal consultation for effects of the proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project in Santa Clara County, California. As provided in 50 CFR §402.16 and in the terms and conditions of this Biological Opinion and Conference Report, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

You may ask the Service to confirm the conference report as a biological opinion issued through formal consultation if the critical habitat for the California red-legged frog is designated. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference report as the biological opinion on the project and no further section 7 consultation will be necessary.

If you have questions concerning this opinion on proposed State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project, Santa Clara County, California, you can contact Jerry Roe or Ryan Olah at the letterhead address or at (916) 414-6600.

Mr. Jim Richards

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Sincerely,

A handwritten signature in cursive script that reads "Susan K. Moore". The signature is written in black ink and is positioned above the printed name and title.

Susan K. Moore
Field Supervisor

cc:

Margaret Gabil, California Department of Transportation, Oakland, California
Melissa Escaron, California Department of Fish and Game, Oakland, California
Scott Wilson, California Department of Fish and Game, Yountville, California

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

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In Reply Refer To:
81420-2008-F-1995-R001-3

APR 12 2012

Mr. Jim Richards
Office of Biological Sciences and Permits
California Department of Transportation
P.O. Box 23660
Oakland, California 94623-0660

Subject: Draft Reinitiation of Consultation on the State Route 152 Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project, Santa Clara County, California (Caltrans EA 2A4400)

Dear Mr. Richards:

This letter is a reinitiation of consultation for the March 10, 2010, biological opinion for the State Route 152 (SR-152) Old Lake Road to Dunne Lane (Lovers Lane) Safety Improvement Project (Service File No. 81420-2008-F-1995) located in Santa Clara County, California. Your letter was received by the U.S. Fish and Wildlife Service (Service) on May 5, 2011, and was assigned the Service File No.: 81420-2008-F-1995-R001-2. Reinitiation of consultation was requested by the California Department of Transportation (Caltrans) to address changes to the project description that may affect listed species in a manner not considered in the March 10, 2010, biological opinion and incorporate the relocation of a Pacific Gas and Electric Company (PG&E) electric power line. Reinitiation of consultation is exercised under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users legislation (23 U.S.C. 327) allows the Secretary of the U.S. Department of Transportation acting through the Federal Highway Administration (FHWA) to establish a Surface Transportation Project Delivery Pilot Program, whereby a State may assume the FHWA responsibilities under the National Environmental Policy Act (NEPA) for environmental review, agency consultation and other action pertaining to the review or approval of a specific project. Caltrans assumed these responsibilities for the FHWA on July 1, 2007 through a Memorandum of Understanding (MOU) within the State of California (http://www.dot.ca.gov/ser/downloads/MOUs/nepa_delegation/sec6005mou.pdf).

On March 10, 2010, the Service issued a conference report for the then proposed California red-legged frog critical habitat, resulting in effects associated with the SR-152 Old Lake Road to Lovers Lane Safety Improvement Project. Since the issuance of the March 10, 2010 conference report, the Service formally designated critical habitat for the California red-legged frog on March 17, 2010 (75 FR 12816). As requested by Caltrans on May 27, 2011, the Service confirms the conference report as a formal consultation. The Service has reviewed the proposed action

and has determined there are no significant changes in the action as described in the conference report and amended to the biological opinion during this reinitiation of formal consultation. Thereby, the Service adopts the conference as the biological opinion for California red-legged frog critical habitat pursuant to 50 CFR 402.10(d). The terms and conditions in the March 10, 2010, biological opinion and Conference Report are herewith incorporated as non-discretionary measures that must be undertaken.

The following changes are made to the August 1, 2007, biological opinion:

1. Add the following to the **Consultation History** on page 2:

- | | |
|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| May 5, 2011 | The Service received a letter from Caltrans dated May 2, 2011, requesting reinitiation of formal consultation to address modifications to the soil nail walls and areas of temporary and permanent effects. |
| May 27, 2011 | Caltrans requested confirmation of the conference report as a biological opinion for the Effects of the Proposed State Route 152 Old Lake Road to Lovers Lane Safety Improvement Project, Santa Clara County, California, EA 2A4400, File No. 81420-2008-F-1995. Caltrans is requesting the Service to confirm the conference report on California red-legged frog critical habitat as a biological opinion issued through formal consultation since designation of critical habitat for the California red-legged frog was finalized on March 17, 2010. |
| July 14, 2011 | The Service provided technical assistance to Caltrans regarding the location of wildlife exclusion fencing along Segment 1. The Service agreed that fencing should be erected around the staging area but not the entire project footprint as the construction activity within Segment 1 will solely comprise resurfacing and will not affect vegetated road shoulders or adjacent habitat. |
| September 28, 2011 | Caltrans requested the Service incorporate the relocation of PG&E electric utility line relocation into the project description. |
| December 7, 2011 | The Service issued a draft amendment to Caltrans for review. |
| February 28, 2012 | The Service received a letter from Caltrans requesting a minor change to the location of staging areas and requested the Service issue the amendment. |
| March 16, 2011 -
March 6, 2012 | Electronic and phone correspondence between Caltrans, PG&E and the Service. |

2. Add the following to the **Description of the Proposed Action** on page 3:

PG&E will relocate an electric distribution line within the newly acquired Caltrans right-of-way to accommodate widening of SR-152. The relocation will comprise the removal

of five existing power poles and the installation of six new poles; one of which (Pole No. 5) will consist of a pole replacement at the location of the existing pole. Equipment required will include a bucket truck, line truck and personal vehicles. Twenty-four inch diameter holes will be excavated to a maximum depth 7 feet using an auger attached to the back of a line truck. The area of disturbance around each pole will consist of a 25-foot radius work area centered on each pole to stage equipment and perform the pole installation/removal. All construction activities for the utility relocation efforts will remain within the project footprint. This portion of the project will require approximately three weeks to complete; however, the timing will be subject to available clearances on the distribution line. PG&E's activities will be completed prior to the commencement of the Caltrans project.

3. Change the text under *Segment 2* of the **Description of the Proposed Action** on page 4 from:

Shoulder widening, improving sight distance, and the addition of a left-turn pocket at Lovers Lane will require ground disturbance along Segment 2. To accommodate these activities with minimal effects to aquatic resources, the alignment will be widened primarily to the north. Given the steep slopes along some of the project area north of the existing alignment, three retaining walls will be constructed to develop embankment on that side of SR-152. Roadway construction, described in more detail below, will begin at PM 18.5 and conclude at PM 19.58.

Several aquatic resources exist along Segment 2. The roadway traverses Holstein Creek on a bridge constructed over a 7-foot-high by 14-foot-wide double box culvert. In the same area, a seasonal wetland that is a former breeding location for California tiger salamander occurs on the northern side of SR-152 west of Holstein Creek, and Ortega Creek enters the project area at Lovers Lane and parallels the roadway all the way to the western end of the segment. The project has been designed so that the effect to aquatic resources is a 0.02-acre permanent and 0.01-acre temporary effect to a channelized section of Holstein Creek and a roadside ditch that drains to it.

The maximum limit of the project footprint on Segment 2 is 185 feet north and 85 feet south of the proposed centerline. The current project description and plans represent the greatest expected project footprint and effects to listed species and other sensitive resources. The plans may be refined in details during subsequent stages of project planning. If the project description changes, Caltrans will coordinate with the Service to determine whether reinitiation of formal consultation is required.

To:

Shoulder widening, improving sight distance, and the addition of a left-turn pocket at Lovers Lane will require ground disturbance along Segment 2. To accommodate these activities with minimal effects to aquatic resources, the alignment will be widened primarily to the north. Given the steep slopes along portions of the existing alignment, two retaining walls will be constructed to develop embankment on the north side of SR-152. Roadway construction will begin at PM 18.5 and conclude at PM 19.58.

Two additional retaining walls will be constructed on the south side of SR-152 to accommodate a shift in a private driveway connecting to Lover's Lane and the new shoulder adjacent to Ortega Creek.

The project has been designed to minimize the effects to Holstein Creek, Ortega Creek and a seasonal wetland located at PM 19.25 that functions as breeding habitat for California tiger salamanders. The reduced spatial footprint will permanently effect less than 0.01-acre and temporarily effect 0.20-acre channelized sections of Holstein Creek and Ortega Creek. The seasonal wetland will be avoided entirely.

The maximum limit of the project footprint on Segment 2 is 68 feet north and 140 feet south of the proposed centerline. The current project description and plans represent the greatest expected project footprint and effects to listed species and other sensitive resources. The plans may be further refined during subsequent stages of project planning. If the project description changes, Caltrans will coordinate with the Service to determine whether reinitiation of formal consultation is required.

4. Change the second paragraph under *Shoulder Widening* of the **Description of the Proposed Action** on page 4 from:

For widening next to Ortega Creek, silt fence will be placed at the toe of the proposed slope to prevent fill from invading the channel. Fill will proceed incrementally to prevent slippage, with each layer compacted before the next layer is placed. The final slope above the channel will be constructed at 2:1 (horizontal:vertical) in an effort to remain as far from the edge of the creek as possible.

To:

For widening next to Ortega Creek, a standard gabion basket retaining wall 710 feet long and a maximum of 12 feet high will be constructed to prevent erosion into the channel along the northern bank. Gabion retaining structures will comprise rectangular wire mesh baskets filled with rock to form a flexible, permeable, monolithic retaining wall. Gabion baskets will be 3 feet wide, 6 to 12 feet long and 1 to 3 feet high. To ensure stability against scour, the bottom gabion baskets will be embedded 3 feet below the grade along the entire length of the wall.

5. Change the paragraph under *Left Turn Pocket* of the **Description of the Proposed Action** on page 5 from:

Left-turn channelization at Lovers Lane will require widening the existing lanes to develop standard transitions, and adding a left-turn pocket and acceleration lane in the westbound lane. The turn pocket will be 12 feet wide and 550 feet long and the acceleration lane will be 12 feet wide and 200 feet long. Widening will require excavation and fill, grading, saw cutting the existing pavement, and adding new pavement. The equipment required for this work includes a blade, backhoe, paver, roller, and spreader. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck. Widening to create the left-turn pocket will require the removal of an estimated 31 eucalyptus trees.

To:

Left-turn channelization at Lovers Lane will require widening the existing lanes to develop standard transitions, and adding a left-turn pocket and acceleration lane in the westbound lane. The turn pocket will be 12 feet wide and 550 feet long and the acceleration lane will be 12 feet wide and 200 feet long. Widening will require saw cutting the existing pavement, excavation and fill, grading, and laying new pavement. In addition, the widening will require the realignment of the private driveway immediately south of SR-152 near the left turn pocket. This will require a standard Type 1 or Type 5 retaining wall be constructed along the new private driveway measuring 10 feet high and 36 feet long. Footing will extend 2.5 feet below the bottom of the retaining wall and 1-foot on each side. The equipment required for this work includes a blade, backhoe, paver, roller, and spreader. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck. Widening to create the left-turn pocket will require the removal of an estimated 31 eucalyptus trees.

6. Change the entire section under *Soil Nail Walls* of the **Description of the Proposed Action** on page 5 from:

Three soil nail walls will be added within Segment 2 between PM 18.5 and PM 19.3. Following are the locations and expected dimensions of the walls:

- Soil Nail Wall 1: Station 228+25 to 230+25
Maximum Dimensions: 15 feet high and 200 feet long
- Soil Nail Wall 2: Station 235+50 to 246+75
Maximum Dimensions: 20 feet high and 1,125 feet long
- Soil Nail Wall 3: Station 249+80 to 252+80
Maximum Dimensions: 20 feet high and 300 feet long

Soil nail walls function as retaining walls. They are essentially vertical masonry slabs that are held against a hillside by means of long "nails" drilled horizontally into the ground. The nails are about 0.7 to 1.5 times as long as the height of the wall, depending on the soil condition of the site. They are placed in rows at 5-foot intervals, starting about 2 feet below the top of the wall, and are driven in at a 15° to 20° downwards angle using horizontal drilling equipment. Air or water is used during the drilling process to remove the loosened soil.

The construction of the soil nail walls will involve excavating the hillside, drilling holes, installing the soil nails, and connecting new storm water drains to the existing drainage systems. The equipment required for this work will include a drilling machine, pump, forklift, crane, backhoe, and materials including wire mesh and soil nails (about 30 feet long). The slurry that is produced by the use of water during drilling will be fully contained and disposed of at an approved facility and will not be allowed to enter any drainage systems or waterways.

The contractor may stage the construction of these walls from the roadbed or from the hillside above the wall. In either case, a long-armed backhoe will be used to cut back the

hillside. If the walls are built from the roadway, a crane could suspend the backhoe and drilling machine at the required height for earth moving and drilling, or an earthen berm could be built at the base of the wall for the backhoe and drilling machine to work from. If construction is staged from above the wall, an area on the hillside will be temporarily affected by operating the equipment. Although it is unlikely that the walls will be staged from the hillside, potential temporary effects to the hillsides above the three soil nail walls have been included in the proposed project footprint and effects analysis.

To:

Two soil nail walls will be added within Segment 2 between PM 18.5 and PM 19.3. Following are the locations and expected dimensions of the walls:

- Soil Nail Wall 1: Station 228+25 to 230+25
Maximum Dimensions: 15 feet high and 200 feet long
- Soil Nail Wall 2: Station 235+50 to 259+00
Maximum Dimensions: 20 feet 6 inches high and 2,100 feet long

Soil nail walls will be constructed as retaining walls, consisting of vertical masonry slabs held against a hillside by long "nails" drilled horizontally into the ground. The nails will be 0.7 to 1.5 times as long as the height of the wall, depending on soil type. They will be placed in rows at 5-foot intervals, starting about 2 feet below the top of the wall, and driven in at a 15° to 20° downwards angle using horizontal drilling equipment. Air or water is used during the drilling process to remove the loosened soil.

The construction of the soil nail walls will involve excavating the hillside, drilling holes, installing the soil nails, and connecting new storm water drains to the existing drainage systems. The equipment required for this work will include a drilling machine, pump, forklift, crane, backhoe, and materials including wire mesh and soil nails (about 30 feet long). The slurry that is produced by the use of water during drilling will be fully contained and disposed of at an approved facility and will not be allowed to enter any drainage systems or waterways.

The contractor may stage the construction of these walls from the roadbed or from the hillside above the wall. In either case, a long-armed backhoe will be used to cut back the hillside. If the walls are built from the roadway, a crane could suspend the backhoe and drilling machine at the required height for earth moving and drilling, or an earthen berm could be built at the base of the wall for the backhoe and drilling machine to work from. If construction is staged from above the wall, an area on the hillside will be temporarily affected by equipment operation and staging. Although it is unlikely that the walls will be staged from the hillside, potential temporary effects to the hillsides above the two soil nail walls have been included in the proposed project footprint and effects analysis.

7. Change the first two paragraphs under *Drainage System* of the **Description of the Proposed Action** on page 6 from:

In addition to the two large box culverts that form the existing Holstein Creek Bridge, a total of 13 culverts cross under SR-152 in Segment 2. No culverts occur in Segment 1.

The diameters of the culverts range from 18 in to 24 in, except for one 4-foot by 3-foot reinforced concrete box culvert at PM 19.25 (station 262+60). The approximate locations, types, and dimensions of these culverts are given in Table 1 and are shown on the project plans provided in Appendix B of the Biological Assessment (Caltrans 2009).

Existing culverts will be extended either to the north or to the south of the road embankment as required. New toe-of-the-slope gutters along both sides of the road embankment will be provided as required to be consistent with the existing drainage pattern. Top-of-the-wall gutters will also be provided as required for proper drainage above the soil nail walls. All drainage work is confined within the existing excavation and fill boundary. The equipment required for this work will include a backhoe. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck.

To:

In addition to the two large box culverts at Holstein Creek, 13 culverts are present within the action area, 10 of which cross under SR-152 in Segment 2. There are no culverts in Segment 1. The diameters of the culverts range from 18 in to 24 inches, except for one 4-foot by 3-foot reinforced concrete box culvert at PM 19.25 (station 262+60). The approximate locations, types, and dimensions of these culverts are given in Table 1 and are shown on the project plans provided in Appendix B of the Biological Assessment (Caltrans 2009).

A total of 19 new culverts will be added and three culverts will be replaced during construction. Four new culverts crossing SR-152 will be added during construction. Ten additional drainage inlets along Soil Nail Wall #2 will be installed and connected with 18 inch culverts to inlets crossing SR-152. Five new culverts will be added to the north side of SR-152 along the private driveways. In order to accommodate shoulder widening, two culverts crossing the private driveways on the north side of SR-152 will be replaced and one 72 inch culvert crossing Lover's Lane will be replaced by a 6-foot by 5-foot reinforced concrete box culvert that is approximately 75 feet long. One existing culvert will be abandoned. New toe-of-the-slope gutters along both sides of the road embankment will be provided as required to be consistent with the existing drainage pattern. Top-of-the-wall gutters will also be provided as required for proper drainage above the soil nail walls. All drainage work is confined within the existing excavation and fill boundary. The equipment required for this work will include a backhoe. Vehicles required include a truck for materials, a labor pick-up truck, and a water truck.

8. Change Table 1 under *Drainage System* of the **Description of the Proposed Action** on page 6 from:

Table 1: Existing Culverts That Cross under SR-152 within the Project Footprint

STATION	TYPE ¹	SIZE ²	APPROXIMATE LENGTH
221+50	CSP	18 in	75 ft
226+60	CSP	18 in	58 ft
231+77	CSP w/ FES	18 in	60 ft
234+32	RPC	24 in	No data
238+66	RPC w/ DI & FES	18 in	44 ft
245+91	CSP w/ HW	18 in	No data
251+60	CSP or RCP w/ DI HW (buried)	18 in	47 ft
255+99	CSP w/ DI & HW	18 in	60 ft
262+60	Concrete Box	48 x 36 in	62 ft
269+70	PPC w/ FES	18 in	50 ft
278+42	CSP w/ FES	18 in	48 ft
282+84	CSP w/ FES	18 in	46 ft
285+93	CSP w/ HW	18 in	67 ft

¹ Type
 CSP corrugated steel pipe
 FES flared end section
 DI drainage inlet
 RCP reinforced concrete pipe
 PPC plastic pipe culvert
 HW head wall
² Size
 Diameter, unless otherwise indicated

To:

Table 1: Existing Culverts within the Project Footprint

APPROXIMATE STATION	TYPE ¹	SIZE ² (INCHES)	APPROXIMATE LENGTH (FT)	PROPOSED MITIGATION
221+50	CSP	18	66	Extend 11 feet
226+60	CSP	18	63	Extend 33 feet
231+77	CSP w/FES	18	60	Extend 20 feet
238+51	RCP w/DI & FES	18	44	Extend 26 feet
245+95	CSP w/HW	18	62	Extend 18 feet
251+48	CSP or RCP w/DI & HW buried	18	47	Abandon, remove DI & HW
256+00	CSP w/DI & HW	18	61	Extend 33 feet
262+44	Concrete Box	48 x 36	62	Extend 11 feet
269+70	PPC w/FES	18	50	Extend 25 feet
248+10 to 248+80	CSP w/FES	72	75	Replace Existing Culvert

¹ Type
 CSP corrugated steel pipe
 FES flared end section
 DI drainage inlet
 RCP reinforced concrete pipe
 PPC plastic pipe culvert
 HW head wall
² Size
 Diameter, unless otherwise indicated

9. Add Table 2 following Table 1 under *Drainage System* of the **Description of the Proposed Action** on page 6:

Table 2: Proposed New Culverts within the Project Footprint

APPROXIMATE STATION	TYPE ¹	SIZE ² (INCHES)	APPROXIMATE LENGTH (FT)	PROPOSED MITIGATION
224+00	CSP w/FES	24	86	Cross SR 152 (1/3)
225+75 to 226+05	CSP w/FES	18	25	Cross private driveway along the north side of SR 152 (1/5)
226+70 to 227+00	CSP w/FES	18	25	Cross private driveway along the north side of SR 152 (2/5)
230+90 to 231+45	CSP w/FES	18	50	Cross private driveway along the north side of SR 152 (3/5)
244+00	CSP w/FES	24	62	Cross SR 152 (2/4)
245+50 to 247+00	CSP w/DI	18	52	Along Soil Nail Wall #2
249+50	CSP w/DI	24	110	Cross SR 152 (2/3)
258+78	CSP w/DI	24	69	Cross SR 152 (3/3)
259+10	CSP w/DI	18	30	10 additional drainage inlets along Soil Nail Wall #2 will be installed and connected to 18" culverts to inlets crossing SR 152
269+71 to 270+15	CSP w/FES	24	38	Cross private driveway along the north side of SR 152 (4/5)
275+80 to 276+50	CSP w/FES	18	75	Cross private driveway along the north side of SR 152 (5/5)

¹ Type
 CSP corrugated steel pipe
 FES flared end section
 DI drainage inlet
 w/ with

RCP reinforced concrete pipe
 PPC plastic pipe culvert
 HW head wall

² Size
 Diameter, unless otherwise indicated

10. Change the paragraph under *Equipment Staging* of the **Description of the Proposed Action** on page 7 from:

The contractor will determine the location of the equipment staging area in coordination with the Caltrans resident engineer and biologist. The biologist will work with the contractor and resident engineer to ensure that equipment is not staged in a biologically sensitive area to the extent feasible. In Segment 1, the proposed staging area is a 150-foot by 75-foot area (0.258-acre) located in the southeastern corner of the intersection of Old Lake Road and SR-152. This area consists of upland ruderal-agricultural vegetation. In Segment 2, a 150-foot by 75-foot staging area (0.258-acre) is proposed on the northern side of SR-152 at PM 18.70, close to the soil nail walls. A patch of remnant mixed oak woodland will be removed at this location to accommodate shoulder widening. The area outside of the remnant mixed oak woodland consists of California annual grassland. After the completion of construction, the staging areas will be stabilized and revegetated with appropriate native plant species.

To:

Equipment and materials staging will be located within the project footprint as provided in the Biological Assessment (Caltrans 2009). The biologist will work with the contractor and resident engineer to ensure that equipment is not staged in a biologically sensitive area. In Segment 1, staging will occur within the existing right-of-way; although, no equipment will be stored in these pullouts overnight. In Segment 2, staging will occur within the existing right-of-way or in temporary construction easements within the project footprint. After the completion of construction, the staging areas will be stabilized and revegetated with appropriate native plant species.

11. Change the paragraph under *Construction Schedule* of the **Description of the Proposed Action** on page 7 from:

Roadway construction is scheduled to begin in February 2011 and conclude by October 30, 2012. Work windows will be established to protect sensitive biological resources.

To:

Roadway construction is scheduled to begin in February 2012 and conclude by October 30, 2013. Work windows will be established to protect sensitive biological resources.

12. Change the fourth and fifth paragraph under the *Proposed Conservation Measures* heading in the section titled **Description of the Proposed Action** on page 9 from:

All work next to San Felipe Lake in Segment 1 was confined to the existing pavement to avoid potential effects to sensitive cultural resources and wetland areas along the edge of this hydrologically important feature. To avoid effects to Ortega Creek in Segment 2, the roadway is being widened primarily to the north.

Widening has been kept to the minimum necessary to provide safety improvements to the highway. Design exceptions were received that allow: (1) shoulders to be upgraded less than the required 8 feet in some locations; and (2) the roadway embankment next to Ortega Creek to be steeper than normally required. By building that embankment at a 2:1 slope rather than the normal 4:1 slope, Caltrans was able to increase the distance between the toe of the embankment slope and the edge of the active creek channel.

To:

All work next to San Felipe Lake in Segment 1 was confined to the existing pavement to avoid potential effects to sensitive cultural resources and wetland areas along the edge of this hydrologically important feature. To avoid significant effects to Ortega Creek in Segment 2, the roadway is being widened primarily to the north.

Widening has been kept to the minimum necessary to provide safety improvements to the highway. Design exceptions were received that allow the shoulders to be upgraded less than the required 8 feet in some locations. In addition, the gabion wall proposed to

stabilize the bank of Ortega Creek adjacent to SR-152 consists of a wire gabion basket filled with rock that is designed to be permeable so that riparian vegetation can regrow.

13. Rename Table 2 to Table 3 and change the calculations under the *Proposed Compensation* heading in the section titled **Description of the Proposed Action** on page 10 from:

Table 2: Proposed Compensation for Temporary and Permanent Effects

Species	Effects						Total Compensation
	Temporary (acres)			Permanent (acres)			
	Impact	Compensation		Impact	Compensation		
Ratio		Need	Ratio		Need		
California red-legged frog	6.61	1.1:1	7.27	2.60	3:1	7.80	15.07
California tiger salamander	6.59	1.1:1	7.25	1.91	3:1	5.73	12.98

To:

Table 3: Proposed Compensation for Temporary and Permanent Effects

Species	Effects						Total Compensation
	Temporary (acres)			Permanent (acres)			
	Impact	Compensation		Impact	Compensation		
Ratio		Need	Ratio		Need		
California red-legged frog	7.20	1.1:1	7.92	2.34	3:1	7.02	14.94
California tiger salamander	6.19	1.1:1	6.81	2.03	3:1	6.09	12.90

14. Retitle the subheading *Proposed California Red-legged Frog Critical Habitat* to *California Red-legged Frog Critical Habitat* and change the first paragraph on page 21 and last paragraph on page 22 of this section under the **Status of the Species and Environmental Baseline** from:

Critical habitat is defined in Section 3 of the Act as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR 424.12(b)). The Service is required to list the known primary constituent elements (PCE's) together with the critical habitat description. Such physical and biological features include, but are not limited to, the following.

With the revised designation of critical habitat, the Service intends to conserve the physical and biological features that are essential to the conservation of the species, through the identification of the appropriate quantity and spatial arrangement of the PCE's sufficient to support the life-history functions of the species. Because not all life-

history functions require all the PCE's, not all areas designated as critical habitat will contain all the PCE's. Please refer to 73 FR 53492 for additional information on California red-legged frog critical habitat.

To:

The Service designated critical habitat for the California red-legged frog on April 13, 2006 (71 FR 19244) and a revised designation to the critical habitat was published on March 17, 2010 (75 FR 12816). At this time, the Service recognized the taxonomic change from *Rana aurora draytonii* to *Rana draytonii* (Shaffer et al. 2010). Critical habitat is defined in Section 3 of the Act as: (1) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (a) essential to the conservation of the species and (b) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. In determining which areas to designate as critical habitat, the Service considers those physical and biological features that are essential to a species' conservation and that may require special management considerations or protection (50 CFR 424.12(b)). The Service is required to list the known primary constituent elements (PCE's) together with the critical habitat description. Such physical and biological features include, but are not limited to, the following.

With the revised designation of critical habitat, the Service intends to conserve the geographic areas containing the physical and biological features that are essential to the conservation of the species, through the identification of the appropriate quantity and spatial arrangement of the PCE's sufficient to support the life-history functions of the species. Because not all life-history functions require all the PCE's, not all areas designated as critical habitat will contain all the PCE's. Please refer to the final designation of critical habitat for California red-legged frog for additional information (75 FR 12816).

15. Change the *Environmental Baseline* section under the *California Red-Legged Frog Critical Habitat* subheading in the **Status of the Species and Environmental Baseline** on page 22 from:

A portion of Segment 2 immediately west of Lover's Lane and eastward to the residence at 5401 Pacheco Pass Highway is located within the revised proposed critical habitat (Unit STC-2) issued on September 16, 2008 (73 FR 53492). This unit is approximately 204,718 acres; the portion within the action area and subject to ground disturbance totals approximately 1.77 acres, which represents less than one-tenth of one percent of the total unit acreage. This unit stretches from southeastern Santa Clara County to western Stanislaus County down to northern San Benito County from Henry Coe State Park south to Mount Ararat (Merced County) and Mariposa Peak (San Benito County) to San Felipe (Santa Clara County). Unit STC-2 contains the features that are essential for the conservation of the species. The unit also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2) and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). The unit contains high-quality permanent and ephemeral aquatic habitats suitable for breeding and upland areas for dispersal, shelter, and food.

The designation of this unit is expected to prevent further habitat fragmentation, provide connectivity to units farther north in Santa Clara, Alameda, and Contra Costa Counties, and represent the southern portion of the areas designated within Santa Clara County and East Bay Region.

The portion of the action area within this unit contains two of the four PCE's: non-breeding aquatic (PCE 2) and upland habitat (PCE 3). The non-breeding aquatic habitat consists of a single seasonal wetland (0.07-acre) located north of SR-152 at PM 19.25, which is formed in a shallow swale near the entrance of a box culvert that crosses under SR-152 and empties into a drainage ditch that flows into Holstein Creek approximately 250 feet to the east. The remaining non-paved habitat within the 1.77 acres to be affected is comprised of upland habitat within California annual grassland, remnant mixed oak woodland and ruderal-agricultural vegetation communities. The majority of this area comprises California annual grassland with minimal structural features and scattered ground squirrel burrows that provide a network of subterranean burrows for shelter.

To:

A portion of Segment 2 immediately west of Lover's Lane and eastward to the residence at 5401 Pacheco Pass Highway is located within the designated critical habitat Unit STC-2 (Wilson Peak). This unit is approximately 204,718 acres; the portion within the action area and subject to ground disturbance totals approximately 0.83-acre, which represents less than one-tenth of one percent of the total unit acreage. This unit stretches from southeastern Santa Clara County to western Stanislaus County down to northern San Benito County from Henry Coe State Park south to Mount Ararat (Merced County) and Mariposa Peak (San Benito County) to San Felipe (Santa Clara County). Unit STC-2 contains the features that are essential for the conservation of the species. The unit also contains aquatic habitat for breeding and non-breeding activities (PCE 1 and PCE 2) and upland habitat for foraging and dispersal activities (PCE 3 and PCE 4). The unit contains high-quality permanent and ephemeral aquatic habitats suitable for breeding and upland areas for dispersal, shelter, and food. The designation of this unit is expected to prevent further habitat fragmentation, provide connectivity to units farther north in Santa Clara, Alameda, and Contra Costa Counties, and represent the southern portion of the areas designated within Santa Clara County and East Bay Region.

The portion of the action area within this unit contains two of the four PCE's: non-breeding aquatic habitat (PCE 2) and upland habitat (PCE 3). The non-breeding aquatic habitat consists of two locations: 1) a 0.07-acre seasonal wetland located north of SR-152 at PM 19.25, which is formed in a shallow swale near the entrance of a box culvert that crosses under SR-152 and empties into a drainage ditch that flows into Holstein Creek approximately 250 feet to the east; and 2) a 0.13-acre portion of Ortega Creek that consists of riverine habitat. The remaining non-paved habitat within the 0.83-acre to be affected is comprised of upland habitat within riparian, California annual grassland, remnant mixed oak woodland and ruderal-agricultural vegetation communities. The majority of this area comprises California annual grassland with minimal structural features and scattered ground squirrel burrows that provide a network of subterranean burrows for shelter.

16. Change the first paragraph under the *Environmental Baseline* section of the *California Tiger Salamander Critical Habitat* subheading in the **Status of the Species and Environmental Baseline** on page 31 from:

Nearly the entire action area is located within designated critical habitat San Felipe Unit (Unit 12) in the East Bay Region issued on August 23, 2005 (70 FR 49380), which encompasses the entire project footprint for Segments 1 and 2 except the last tenth of a mile of the eastern project terminus, and does not include habitat within the action area south the western terminus of Segment 1 and the eastern terminus of Segment 2. This unit is approximately 6,642 acres; the portion within the action area and subject to ground disturbance totals approximately 8.50 acres, which represents approximately one-tenth of one percent of the total unit acreage. This unit is comprised of 6,642 acres of habitat and is essential to the conservation of the species because it is needed to maintain the current geographic and ecological distribution of the species within the Bay Area Geographic Region. Unit 12 represents part of the center of the distribution within the Bay Area Geographic Region and the southernmost portion of Santa Clara County, northern San Benito County, and center of the Central Coast vernal pool region. It contains all three of the PCEs and 10 extant occurrences of the species. Unit 12 generally is found west of Camadero, south of Kickham Peak, east of San Joaquin Peak, and north of Dunneville. Threats include erosion and sedimentation, pesticide application, introduction of predators such as bullfrogs and mosquito fish, disturbance activities associated with development that may alter the hydrologic functioning of the aquatic habitat, upland disturbance activities that may alter upland refugia and dispersal habitat, and activities such as road development and widening that may develop barriers for dispersal.

To:

Nearly the entire action area is located within designated critical habitat San Felipe Unit (Unit 12) in the East Bay Region issued on August 23, 2005 (70 FR 49380), which encompasses the entire project footprint for Segments 1 and 2 except the last tenth of a mile of the eastern project terminus, and does not include habitat within the action area south the western terminus of Segment 1 and the eastern terminus of Segment 2. This unit is approximately 6,642 acres; the portion within the action area and subject to ground disturbance totals approximately 4.66 acres, which represents approximately one-tenth of one percent of the total unit acreage. This unit is comprised of 6,642 acres of habitat and is essential to the conservation of the species because it is needed to maintain the current geographic and ecological distribution of the species within the Bay Area Geographic Region. Unit 12 represents part of the center of the distribution within the Bay Area Geographic Region and the southernmost portion of Santa Clara County, northern San Benito County, and center of the Central Coast vernal pool region. It contains all three of the PCEs and 10 extant occurrences of the species. Unit 12 generally is found west of Camadero, south of Kickham Peak, east of San Joaquin Peak, and north of Dunneville. Threats include erosion and sedimentation, pesticide application, introduction of predators such as bullfrogs and mosquito fish, disturbance activities associated with development that may alter the hydrologic functioning of the aquatic habitat, upland disturbance activities that may alter upland refugia and dispersal habitat, and activities such as road development and widening that may develop barriers for dispersal.

17. Change the last paragraph on page 33 under *California Red-Legged Frog and California Tiger Salamander* section of the **Effects of the Action** from:

Temporary effects comprise areas denuded, manipulated, or otherwise modified from their existing, pre-project conditions thereby removing one or more essential components of a listed species' habitat as a result of project activities that include, but are not limited to, construction, staging, storage, lay down, vehicle access, parking, etc. Temporary effects must be restored to baseline habitat values or better within one year following initial disturbance or they will be considered permanent. Areas subjected to ongoing operations and maintenance are considered permanent even if they are restored within one year following initial disturbance. Affected areas not fulfilling these criteria are considered permanent. Construction within terrestrial habitat, i.e. shoulder widening, addition of a left turn pocket and construction of soil nail walls, would result in the permanent loss and/or degradation of 2.60 acres of California red-legged frog upland habitat and 1.91 acres of California tiger salamander upland and dispersal habitat; and the temporary loss and/or degradation of 6.61 acres of California red-legged frog upland habitat and 6.59 acres of California tiger salamander upland and dispersal habitat. The 0.71-acre difference between effects acreages between the two species is attributed to effects to mixed willow riparian forest and riverine habitat considered suitable habitat for the California red-legged frog, but is not considered suitable habitat for the California tiger salamander.

To:

Temporary effects comprise areas denuded, manipulated, or otherwise modified from their existing, pre-project conditions thereby removing one or more essential components of a listed species' habitat as a result of project activities that include, but are not limited to, construction, staging, storage, lay down, vehicle access, parking, etc. Temporary effects must be restored to baseline habitat values or better within one year following initial disturbance or they will be considered permanent. Areas subjected to ongoing operations and maintenance are considered permanent even if they are restored within one year following initial disturbance. Affected areas not fulfilling these criteria are considered permanent. Construction within terrestrial habitat, i.e. shoulder widening, addition of a left turn pocket and construction of soil nail walls, would result in the permanent loss and/or degradation of 2.34 acres of California red-legged frog upland habitat and 2.03 acres of California tiger salamander upland and dispersal habitat; and the temporary loss and/or degradation of 7.20 acres of California red-legged frog upland habitat and 6.19 acres of California tiger salamander upland and dispersal habitat. The 1.32-acre difference between effects acreages between the two species is attributed to effects to mixed willow riparian forest and riverine habitat considered suitable habitat for the California red-legged frog, but is not considered suitable habitat for the California tiger salamander.

18. Retitle the subheading *Proposed California Red-legged Frog Critical Habitat* to *California Red-legged Frog Critical Habitat* and change the corresponding paragraph on page 34 under the **Effects of the Action** from:

The proposed action will result in the permanent loss and/or degradation of 0.26-acre of upland habitat (PCE 3) comprising mixed willow riparian forest between PM 18.9 and

19.0 west of the intersection of SR-152 and Lover's Lane, and remnant mixed oak woodland adjacent to the seasonal wetland located at PM 19.25. The proposed action will result in the temporary loss and/or degradation to 1.51 acres of non-breeding aquatic (PCE 2) (0.07-acre seasonal wetland at PM 19.25) and upland habitat comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural, and urban vegetation communities. All effects to critical habitat are confined to Segment 2 from PM 18.9 to PM 19.35. The portion of critical habitat falling within the project footprint comprises a portion of the southern critical habitat boundary which encompasses predominately undeveloped foothills of southeastern Santa Clara County. Caltrans has minimized effects to critical habitat by incorporating design modifications that avoid or minimize disturbance or loss of designated critical habitat containing PCEs. Permanent loss and/or degradation of 0.26-acre supporting PCE 3 and temporary loss and/or degradation of 1.51 acres supporting PCE 2 in this portion of the California red-legged frog critical habitat will not compromise or assist in achieving the unit goals of preventing further habitat fragmentation or providing connectivity to units farther north in Santa Clara, Alameda, and Contra Costa counties, nor is it expected to exacerbate a known threat of predation by non-native species within this unit.

To:

The proposed action will result in the permanent loss and/or degradation of 0.30-acre of non-breeding aquatic habitat (PCE 2) and upland habitat (PCE 3) comprising seasonal wetland, riverine, and mixed willow riparian forest between PM 18.9 and 19.0 west of the intersection of SR-152 and Lover's Lane, and remnant mixed oak woodland adjacent to the seasonal wetland located at PM 19.25. The proposed action will result in the temporary loss and/or degradation to 0.53-acre of non-breeding aquatic (PCE 2) (0.07-acre seasonal wetland at PM 19.25) and upland habitat comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural, and urban vegetation communities. All effects to critical habitat are confined to Segment 2 from PM 18.9 to PM 19.35. The portion of critical habitat falling within the project footprint comprises a portion of the southern critical habitat boundary which encompasses predominately undeveloped foothills of southeastern Santa Clara County. Caltrans has minimized effects to critical habitat by incorporating design modifications that avoid or minimize disturbance or loss of designated critical habitat containing PCEs. Permanent loss and/or degradation of 0.30-acre supporting PCE 2 and PCE 3, and temporary loss and/or degradation of 0.53-acre supporting PCE 2 in this portion of the California red-legged frog critical habitat will not compromise or assist in achieving the unit goals of preventing further habitat fragmentation or providing connectivity to units farther north in Santa Clara, Alameda, and Contra Costa counties, nor is it expected to exacerbate a known threat of predation by non-native species within this unit.

19. Change the paragraph on page 34 under *California Tiger Salamander Critical Habitat* section of the **Effects of the Action** from:

The proposed action will not result in the permanent loss and/or degradation of habitat within Segment 1, but it will result in the permanent loss and/or degradation of 0.94-acre of upland (PCE 2) and dispersal habitat (PCE 3) comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural, and urban vegetation communities. The proposed action will result in the temporary loss and/or degradation to 4.32 acres of

upland (PCE 2) and dispersal habitat (PCE 3) (0.25-acre within Segment 1 and 4.07 acres within Segment 2) comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural and urban vegetation communities. All permanent effects to critical habitat are confined to Segment 2 from PM 18.6 to PM 19.5. Caltrans has minimized effects to critical habitat by incorporating design modifications that avoid or minimize disturbance or loss of designated critical habitat containing PCEs. Permanent loss and/or degradation of 0.94-acre supporting PCE 2 and 3, and temporary loss and/or degradation of 4.32 acres supporting PCE 2 and 3 in this portion of the California tiger salamander critical habitat will avoid breeding habitat and will not appreciably diminish the overall value or function of San Felipe Unit (Unit 12).

To:

The proposed action will not result in the permanent loss and/or degradation of habitat within Segment 1, but it will result in the permanent loss and/or degradation of 0.97-acre of upland (PCE 2) and dispersal habitat (PCE 3) comprising California annual grassland and ruderal-agricultural vegetation communities. The proposed action will result in the temporary loss and/or degradation to 3.69 acres of upland (PCE 2) and dispersal habitat (PCE 3) (all within Segment 2) comprising California annual grassland, mixed willow riparian forest, ruderal-agricultural and urban vegetation communities. All permanent effects to critical habitat are confined to Segment 2 from PM 18.6 to PM 19.5. Caltrans has minimized effects to critical habitat by incorporating design modifications that avoid or minimize disturbance or loss of designated critical habitat containing PCEs. Permanent loss and/or degradation of 0.97-acre supporting PCE 2 and 3, and temporary loss and/or degradation of 3.69 acres supporting PCE 2 and 3 in this portion of the California tiger salamander critical habitat will avoid breeding habitat and will not appreciably diminish the overall value or function of San Felipe Unit (Unit 12).

20. Change the paragraph under *California Red-legged Frog* of the **Amount or Extent of Take** on page 37 from:

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect due to their cryptic nature and wariness of humans. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. Due to the difficulty in quantifying the number of California red-legged frogs that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed action as the injury and mortality of no more than two (2), and the capture, harm and harassment of all California red-legged frogs inhabiting or utilizing the 9.21 acres (2.60 acres of permanent loss and/or degradation of upland habitat and 6.61 acres of temporary loss and/or degradation of upland habitat) of suitable habitat identified in the Biological Assessment (Caltrans 2009). Incidental take of eggs or larval frogs is not anticipated, since the project has been designed to avoid affecting breeding habitat. The Service anticipates that proposed action may result in take of juvenile and adult life history stages as a result of habitat loss/degradation, construction-related disturbance, or capture and relocation. Upon implementation of the following Reasonable and Prudent Measures, juvenile and adult California red-legged frogs within the action area in proportion to the amount and type of take outlined above will become exempt from the

prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

To:

The Service anticipates that incidental take of the California red-legged frog will be difficult to detect due to their cryptic nature and wariness of humans. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. Due to the difficulty in quantifying the number of California red-legged frogs that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed action as the injury and mortality of no more than two (2) individuals of juvenile or adult life history stages, and the capture, harm and harassment of all California red-legged frogs inhabiting or utilizing the 9.54 acres (2.34 acres of permanent loss and/or degradation of upland habitat and 7.20 acres of temporary loss and/or degradation of upland habitat) of suitable habitat identified in the Biological Assessment (Caltrans 2009). Incidental take of eggs or larval frogs is not anticipated, since the project has been designed to avoid affecting breeding habitat. The Service anticipates that proposed action may result in take of juvenile and adult life history stages as a result of habitat loss/degradation, construction-related disturbance, or capture and relocation. Upon implementation of the following Reasonable and Prudent Measures, juvenile and adult California red-legged frogs within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

21. Change the paragraph under *California Tiger Salamander* of the **Amount or Extent of Take** on page 37 from:

The Service anticipates that incidental take of the California tiger salamander will be difficult to detect because of its cryptic nature, subterranean lifestyle, and predominately nocturnal behavior. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. Due to the difficulty in quantifying the number of California tiger salamanders that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed action, the Service is quantifying take incidental to the proposed action as the injury and mortality of no more than two (2), and the capture, harm and harassment of all California tiger salamanders inhabiting or utilizing the 8.5 acres (1.91 acres of permanent loss and/or degradation of upland and dispersal habitat and 6.59 acres of temporary loss and/or degradation of upland and dispersal habitat) of suitable habitat identified in the Biological Assessment (Caltrans 2009). Incidental take of eggs or larval salamanders is not anticipated, since the project has been designed to avoid affecting breeding habitat. The Service anticipates that proposed action may result in take of juvenile and adult life history stages as a result of habitat loss/degradation, construction-related disturbance, or capture and relocation. Upon implementation of the following Reasonable and Prudent Measures, juvenile and adult California tiger salamanders within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

To:

The Service anticipates that incidental take of the California tiger salamander will be difficult to detect because of its cryptic nature, subterranean lifestyle, and predominately nocturnal behavior. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. Due to the difficulty in quantifying the number of California tiger salamanders that will be taken as a result of the proposed action, the Service is quantifying take incidental to the proposed action, the Service is quantifying take incidental to the proposed action as the injury and mortality of no more than two (2) individuals of juvenile or adult life history stages, and the capture, harm and harassment of all California tiger salamanders inhabiting or utilizing the 8.22 acres (2.03 acres of permanent loss and/or degradation of upland and dispersal habitat and 6.19 acres of temporary loss and/or degradation of upland and dispersal habitat) of suitable habitat identified in the Biological Assessment (Caltrans 2009). Incidental take of eggs or larval salamanders is not anticipated, since the project has been designed to avoid affecting breeding habitat. The Service anticipates that the proposed action may result in take of juvenile and adult life history stages as a result of habitat loss/degradation, construction-related disturbance, or capture and relocation. Upon implementation of the following Reasonable and Prudent Measures, juvenile and adult California tiger salamanders within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

22. Change the first paragraph under **Term and Condition 1.b.** on page 39 from:

To reduce the overall level of take of the California red-legged frog and California tiger salamander, and loss of critical habitat containing PCEs for California red-legged frog and California tiger salamander, Caltrans shall compensate for the effect of incidental take of species resulting from the net loss of habitat and temporal loss between the time the effects are incurred and the time when the compensation habitat is fully functional. Caltrans shall continue to work with the Service and California Department of Fish and Game (CDFG) to identify suitable habitat that comprises high quality breeding, foraging, sheltering, migration and/or dispersal habitat, or provides a functional linkage between areas of occupied habitat that facilitates the (re)colonization of suitable habitat from source populations. Caltrans shall comply with all applicable CDFG regulations pertaining to mitigation for species designated as fully protected and/or listed by the State. Alternatively, if a State Endangered Species Take Permit for California tiger salamander is not required by CDFG at the time the effects associated with the project occur, Caltrans will not be required to obtain CDFG approval for the conservation actions as described in this biological opinion. Caltrans shall submit a Conceptual Compensation Plan to the Service detailing on and off-site habitat compensation schemes – such as Doan Ranch or other potential land acquisition options – and timelines to achieve full habitat functions and values within 6 calendar months following the issuance of this biological opinion. Compensation may consist of a combination of on and off-site habitat preservation, restoration and/or enhancement. Caltrans shall permanently protect 15.07 acres of California red-legged frog and 12.98 acres of California tiger salamander habitat through a combination of the following options:

- i. **On-site Habitat Restoration.** Caltrans shall restore temporarily disturbed habitat(s), at a minimum, to original contours and baseline conditions. Credit for on-site restoration of areas subject to temporary disturbance shall be achieved once it is returned to and functions at baseline conditions or better as determined by the Service.
- ii. **Conservation Bank Credits.** Caltrans shall purchase conservation bank credits at a Service-approved conservation bank whose service area encompasses the action area for the species listed above. Conservation credits shall be purchased and documentation provided to the Service comprising the Agreement for Sale of Conservation Credits, Bill of Sale, Payment Receipt and Updated Credit Ledger within 30 calendar days prior to project ground-breaking.
- iii. **Off-site Habitat Acquisition & In-perpetuity Preservation.** Caltrans shall contribute toward the acquisition of habitat approved by the Service. The habitat shall have a conservation easement or other appropriate entitlement, management plan, and endowment to manage the habitat in perpetuity; all of which shall be reviewed and approved by the Service, and completed within 18 calendar months following project ground-breaking. Acquisition of land shall either be through easement or fee title. The conservation easement shall name the Service as a third-party beneficiary and shall be held by an entity qualified to hold conservation easements subject to Service approval. An endowment to manage the land and monitor the conservation easement shall be held by a Service-approved entity in an amount agreed to by the Service. A management plan shall be developed prior to or concurrent to the acquisition of land and shall include, but is not limited to: a description of existing habitats and – if applicable – planned habitat creation, restoration and/or enhancement; monitoring criteria for California red-legged frog and California tiger salamander; an integrated pest management and monitoring plan to control invasive species to the extent practicable; habitat creation, restoration and/or enhancement success criteria; and adaptive management strategies. Acceptable habitat includes Doan Ranch in Santa Clara County as described in the Conservation Measures, the Biological Assessment, and letter from Caltrans dated April 24, 2009. Other locations will be considered by the Service on a case-by-case basis.

To:

To reduce the overall level of take of the California red-legged frog and California tiger salamander, and loss of critical habitat containing PCEs for California red-legged frog and California tiger salamander, Caltrans shall compensate for the effect of incidental take of species resulting from the net loss of habitat and temporal loss between the time the effects are incurred and the time when the compensation habitat is fully functional. Caltrans shall seek habitat that comprises high quality breeding, foraging, sheltering, migration and/or dispersal habitat, or provides a functional linkage to areas of occupied habitat(s) to facilitate the (re)colonization from source populations. Caltrans shall comply with all applicable California Department of Fish and Game (CDFG) regulations pertaining to mitigation for species designated as fully protected and/or listed by the State. Caltrans shall submit a Conceptual Compensation Plan to the Service detailing on and off-site habitat compensation schemes, such as Doan Ranch or other potential land

acquisition options, and timelines to achieve full habitat functions and values within 6 calendar months following the issuance of this biological opinion. Compensation may consist of a combination of on and off-site habitat preservation, restoration and/or enhancement and shall be completed within 18 calendar months following the date of project ground-breaking. Caltrans shall permanently protect 14.94 acres of California red-legged frog and 12.90 acres of California tiger salamander habitat through a combination of the following options:

- i. **On-Site Habitat Restoration.** At a minimum, Caltrans shall restore temporarily disturbed habitat(s) to original contours and baseline conditions. Credit for on-site restoration of areas subject to temporary disturbance at a ratio of 1:1 shall be achieved once the habitat is returned to and functions at baseline conditions or better as determined by the Service. Credit shall be issued only if these conditions are reached within 12 months following initial disturbance. Additional compensation at a ratio of 0.1:1 is required to offset the temporal effects of the disturbance during which time the habitat is unsuitable for California red-legged frog and California tiger salamander during the construction phase of the proposed action.
 - ii. **Conservation Bank Credits.** Caltrans shall purchase conservation bank credits at a Service-approved conservation bank whose service area encompasses the action area for the species listed above. Conservation bank credits shall be purchased and documentation provided to the Service comprising the Agreement for Sale of Conservation Credits, Bill of Sale, Payment Receipt and Updated Credit Ledger within 30 calendar days prior to project ground-breaking.
 - iii. **Off-Site Habitat Acquisition & In-perpetuity Preservation.** Caltrans shall contribute toward the acquisition of habitat approved by the Service in accordance with the Selected Review Criteria for Section 7 Off-Site Compensation requirements (Appendix A). Acceptable habitat includes Doan Ranch in Santa Clara County as described in the Conservation Measures, the Biological Assessment, and letter from Caltrans dated April 24, 2009. Other locations will be considered by the Service on a case-by-case basis.
23. Remove **Term and Condition 1.e.** on page 40.
24. Change the first paragraph under **Term and Condition 1.h.** on page 41 from:
- Caltrans shall require as part of the construction contract that all contractors comply with the Act in the performance of the work as described in the Project Description of this biological opinion. The contractor(s) may independently seek off-site staging locations outside of the Caltrans right-of-way, which shall be subject to the requirements of endangered species consultations with the Service and CDFG. In such cases, all agency permits, agreements, or consultations for off-site staging locations shall be the responsibility of the contractor(s).

To:

Caltrans shall require all contractors to comply with the Act in the performance of the action and shall perform the action as outlined in the Project Description of this biological opinion as provided by Caltrans in the Biological Assessment dated March 3, 2010, letters from Caltrans dated May 2, 2011, and all other supporting documentation submitted to the Service in support of the action. Caltrans shall include language in their contracts that expressly requires contractors and subcontractors to work within the boundaries of the project footprint identified in this biological opinion, including vehicle parking, staging, laydown areas, and access roads.

25. Add the following text as **Terms and Conditions 1.i.** on page 41:

The wildlife exclusion fencing shall be inspected daily and maintained throughout the project duration. Inspection of the fence shall be performed by the Service-approved biologist or a designated monitor who is trained by the Service-approved biologist. Repairs to the wildlife exclusion fencing shall be completed within 24 hours of discovery.

26. Replace the **Reinitiation—Closing Statement** on page 43 with the following:

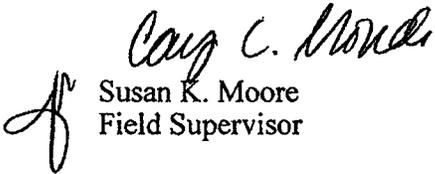
This concludes formal consultation on the SR-152 Old Lake Road to Lovers Lane Safety Improvement Project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion, including work outside of the project footprint analyzed in this opinion and including vehicle parking, staging, lay down areas, and access roads; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion including use of vehicle parking, staging, lay down areas, and access roads; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

This concludes the reinitiation of formal consultation on the SR-152 Old Lake Road to Lovers Lane Safety Improvement Project, Santa Clara County, California. The remainder of the March 10, 2010, biological opinion is unchanged. If you have questions concerning this reinitiation of consultation on the SR-152 Old Lake Road to Lovers Lane Safety Improvement Project, please contact Jerry Roe or Ryan Olah, Coast Bay/Forest Foothills Division Chief, at (916) 414-6600.

Mr. Jim Richards

23

Sincerely,


Susan K. Moore
Field Supervisor

cc:

Monica Gan, California Department of Transportation, Oakland, California
Dave Johnston, California Department of Fish and Game, Yountville, California

APPENDIX A

Sacramento Fish and Wildlife Office
Selected Review Criteria for Section 7 Off-Site Compensation

Property Assurances and Conservation Easement

- Title Report (preliminary at proposal, and Final Title Insurance at recordation), shall be no older than six months;
- Property Assessment and Warranty;
- Subordination Agreement [if there is any outstanding debt on the property];
- Legal Description and Parcel Map;
- Conservation Easement (should use the current SFWO standardized CE template); or
- Non-Template Conservation Easement;

Site Assessment and Development

- Phase I Environmental Site Assessment;
- Restoration or Habitat Development Plan;
- Construction Security [if applicable];
- Performance Security [if applicable];

Site Management

- Interim Management Plan;
- Interim Management Security Analysis and Schedule;
- Long-Term Management Plan;
- Endowment Fund Analysis and Schedule;
- Endowment Funding Agreement or Trust Agreement or Declaration of Trust

**Guidelines to assist in understanding what is required are detailed on the following pages.

Guidelines

Real Estate Assurances and Conservation Easement (CE)

Title Report

1. Who holds fee title to property? Should be the Project Applicant. If not, there may be liability and contracting issues.
2. Are there any liens or encumbrances (existing debts or easements) on the property?
 - a. Review Preliminary Title Report to evaluate liens and encumbrances (see Property Assessment and Warranty, below).
 - b. Could any of these liens or encumbrances potentially interfere with either biological habitat values or ownership? If existing easements can potentially interfere with the conservation values/habitat of the property, those portions of the land should be deducted from the total compensation acreage available on the site.

Property Assessment and Warranty

1. Property owner should submit a Property Assessment and Warranty, which discusses every exception listed on the Preliminary Title Report and Final Title Insurance Policy, evaluating any potential impacts to the conservation values that could result from the exceptions (see below).
2. The Property Assessment and Warranty should include a summary and full explanation of all exceptions remaining on the title, with a statement that the owner/Grantor accepts responsibility for all lands being placed under the CE as available for the primary purposes of the easement, as stated in the easement, and assures that these lands have a free and clear title and are available to be placed under the CE.

Subordination Agreement

1. A Subordination Agreement is necessary if there is any outstanding debt on the property. Review Subordination Agreement language for adequacy—the lending bank or other lien holder must agree to fully subordinate each lien or encumbrance under the CE.

Legal Description and Parcel Map

1. Ensure accuracy of map, and location and acreage protected under the CE.
2. Both the map and the legal description should explain the boundaries of the individual project compensation site. The site should *not* have 'leftover' areas for later use.
3. Ask for an easement map to be prepared (if applicable), showing all easements on the property.

Conservation Easement from Template

1. Who will hold the easement?
 - a. Must have third-party oversight by a qualified non-profit or government agency. Qualifications include:

- i. Organized under IRS 501(c)(3);
 - ii. Qualified under CA Civil Code § 815;
 - iii. Bylaws, Articles of Incorporation, and biographies of Board of Directors on file at, and approved, by SFWO.
 1. Must meet requirements of SFWO, including 51% disinterested parties on the Board of Directors;
 - b. Must be accredited by the Land Trust Accreditation Commission
<http://www.landtrustaccreditation.org/home>.
2. Project Applicant should submit a redline version showing all of their proposed revisions in track changes, along with an explanation of all deviations from the template

Non-Template Conservation Easement

1. If not using the CE template, the Project Applicant should specify objections they have to the template. This may substantially delay processing as the non-template CE will require review by the Solicitor's Office. Alternate CEs must be approved by the SFWO prior to recording.
2. The Project Applicant must either 1) add SFWO as a third-party beneficiary, or 2) add language throughout the document, in all appropriate places, that will assure SFWO the right to enforce, inspect, and approve any and all uses and/or changes under the CE prior to occurrence (including land use, biological management or ownership).
3. Include, at a minimum, language to:
 - a. Reserve all mineral, air, and water rights under the CE as necessary to maintain and operate the site in perpetuity;
 - b. Ensure all future development rights are forfeited;
 - c. Ensure all prohibited uses contained in the CE template are addressed; and
 - d. Link the CE, Management Plan, and the Endowment Trust Fund within the document (e.g., note that each exists to support the others, and where each of the documents can be located if a copy is required).
4. Insert necessary language, particularly, but not exclusively, per: (can compare to CE template)
 - a. Rights of Grantee
 - b. Grantee's Duties
 - c. Reserved Rights
 - d. Enforcement
 - e. Remedies
 - f. Access
 - g. Costs and Liabilities
 - h. Assignment and Transfer
 - i. Merger
 - j. Notices

Site Assessment and Development

Phase I Environmental Site Assessment

1. The Phase I ESA must show that the compensation site is not subject to any recognized environmental conditions as defined by the American Society for Testing and Materials (ASTM) Standard E1527-05 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, available at <http://www.astm.org/Standards/E1527.htm>, (i.e., the presence or likely presence of any Hazardous Substances or petroleum products).
2. If the Phase I ESA identifies any recognized environmental conditions, the Project Applicant must represent and warrant to the SFWO that all appropriate assessment, clean-up, remediation, or removal action has been completed.
3. Phase II ESA may be required to investigate subsurface conditions.

Restoration or Habitat Development Plan [not required if doing preservation only]

1. The overall plan governing construction and habitat establishment activities required to be conducted on the Property, including, without limitation, creation, restoration, and enhancement of habitat.
 - a. This plan should include the baseline conditions of the Property including biological resources, geographic location and features, topography, hydrology, vegetation, past, present, and adjacent land uses, species and habitats occurring on the property, a description of the activities and methodologies for creating, restoring, or enhancing habitat types, a map of the approved modifications, overall habitat establishment goals, objectives and Performance Standards, monitoring methodologies required to evaluate and meet the Performance Standards, an approved schedule for reporting monitoring results, a discussion of possible remedial actions, and any other information deemed necessary by the SFWO.
2. Any permits and other authorizations needed to construct and maintain the site shall be included and in place prior to the start of construction of the habitat.
3. Full construction plans for any habitat construction must be *SFWO-approved prior to the start of construction of the habitat.*

Construction Security

1. The Project Applicant shall furnish a Construction Security in the amount of 100% of a reasonable third party estimate or contract to create, restore, or enhance habitats on the property in accordance with the Restoration or Habitat Development Plan.
2. Construction Security can be drawn on should the project proponent default.
3. The Construction Security shall be in the form of an irrevocable standby letter of credit or a cashier's check.
 - a. The letter of credit, if chosen, shall be issued for a period of at least one year, and shall provide that the expiration date will be automatically extended for at least one year on each successive expiration date unless, until extension is no longer necessary.
 - b. Construction Security shall be in favor of a third party approved by the SFWO.
 - c. Language in a draft letter of credit to be approved by the SFWO.

Performance Security [only necessary if habitat is being restored, enhanced, or constructed]

1. The Project Applicant shall furnish a Performance Security in the amount of 20% of the Construction Security.
2. Performance Security can be drawn on should the Performance Standards not be met, if remedial action becomes necessary.
3. The Performance Security shall be in the form of an irrevocable standby letter of credit or a cashier's check.
 - a. The letter of credit, if chosen, shall be issued for a period of at least one year, and shall provide that the expiration date will be automatically extended for at least one year on each successive expiration date unless, until extension is no longer necessary.
 - b. Construction Security shall be in favor of a third party approved by the SFWO.
 - c. Language in a draft letter of credit to be approved by the SFWO.

Site ManagementInterim Management Plan

1. The Interim Management Plan should identify the short-term management, monitoring, and reporting activities to be conducted from the time construction ends until the Endowment Fund has been fully funded for one year and all the Performance Standards in the Development Plan have been met. This may be the same as the Long-term Management Plan.

Interim Management Security Analysis and Schedule

The purpose of the Interim Management Security is to allow the endowment to grow for at least one year without any disbursements, and is a safeguard to ensure that there will be enough funds in the endowment to pay for future management costs. The period can be longer than one year, and is often 3 years for Conservation Banks. Many endowments have recently experienced losses in principal.

1. The Project Applicant shall furnish an Interim Management Security (in the form of a standby letter of credit) in the amount equal to the estimated cost to implement the Interim Management Plan during the first year of the Interim Management Period, as set for in the Interim Management Security Analysis and Schedule.
2. The Interim Management Security Analysis and Schedule shall consist of a table and/or spreadsheet that shows all of the tasks (management, monitoring, reporting), task descriptions, labor (hours), cost per unit, cost frequency, timing or scheduling of the tasks, the total annual funding necessary for each task, and any associated assumptions for each task required by the Interim Management Plan. The total annual expenses should include administration and contingency costs.
3. The Interim Management Security must:
 - a. Be held by a qualified, SFWO-approved, non-profit organization or government agency [see requirements under CE above], and
 - b. Be held according to minimum standards for assuring maximum success in earning potential, and will assure for no loss of principle.
 - c. Disbursements or releases from the fund must be for documented expenditures, as they occur.

Long-Term Management Plan (LTMP)

1. The LTMP template identifies the long-term management, monitoring and reporting activities to be conducted.
2. The LTMP should include at minimum:
 - a. Purpose of the Project and purpose of the LTMP;
 - b. A baseline description of the setting, location, history, and types of land use activities, geology, soils, climate, hydrology, habitats present (once project meets Performance Standards), and species descriptions;
 - c. Overall management, maintenance and monitoring goals; specific tasks and timing of implementation; and discussion of any constraints, which may affect goals;
 - d. The Endowment Fund Analysis and Schedule (see below);
 - e. Discussion of Adaptive Management actions for reasonably foreseeable events and possible thresholds for evaluating and implementing Adaptive Management;
 - f. Rights of access to the Property and prohibited uses of the Property as provided in the CE; and
 - g. Procedures for Property transfer, land manager replacement, amendments, and notices.
3. The LTMP must be incorporated by reference in the CE.
4. The LTMP is considered a living document and may be revised as necessary upon agreement of the land manager, easement holder, and SFWO.

Endowment Fund Analysis and Schedule

1. Can use a PAR or PAR-like analysis and must be based upon the final, approved LTMP.
 - a. The analysis should be reviewed by the land manager.
2. The analysis and schedule shall consist of a table and/or spreadsheet that shows all of the tasks (management, monitoring, reporting), task descriptions, labor (hours), cost per unit, cost frequency, timing or scheduling of the tasks, the total annual funding necessary for each task, and any associated assumptions for each task required by the Management Plan. The total annual expenses should include administration and contingency costs (contingency can be included on each line item). Unless there is a separate endowment for the purpose of monitoring and reporting on the CE conditions, then, the analysis should also include costs of
 - Monitoring and reporting CE conditions;
 - Defending the CE; and
 - Liability insurance.
3. The Endowment Fund must:
 - a. Be held by a qualified, SFWO-approved, non-profit organization or government agency [see requirements under CE above], and
 - b. Be held according to minimum standards for assuring maximum success in earning potential, and will include assurances for no loss of principle.
 - c. Disbursements or releases from the fund must be for documented expenditures, as they occur.

Endowment Funding Agreement

1. This is the agreement between the endowment holder and the Project Applicant, as to how the endowment is to be funded, held and disbursed;
2. USFWS is not signatory to this agreement, but should be made a third-party beneficiary of the agreement;
3. USFWS has approval authority over the language in the document, and it must state that modifications or transfer of the endowment to another holder are only allowed with USFWS approval;
4. This agreement can also be called: "Trust Agreement", "Declaration of Trust"
5. When the National Fish and Wildlife Foundation (NFWF) holds the endowment, they call this a "Recipient Agreement", and may have an additional MOA with the Project Applicant.

PRELIMINARY SITE INVESTIGATION REPORT

SR 152 SAFETY IMPROVEMENTS PROJECT SANTA CLARA COUNTY, CALIFORNIA

PREPARED FOR:
CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING
111 GRAND AVENUE, MS8C
OAKLAND, CA 94612



PREPARED BY:
GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA



GEOCON PROJECT NO. E8435-06-33
CALTRANS EA 04-2A4401

JULY 2010

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- A. DTSC Variance
- B. Laboratory Reports and Chain-of-Custody Documentation
- C. Lead Regression and Metals and TPHd Statistics

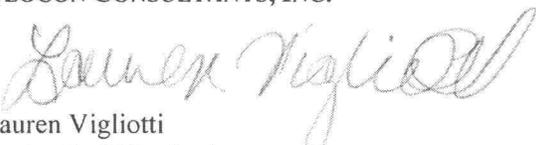
REPORT LIMITATIONS

This report has been prepared exclusively for the State of California Department of Transportation (Caltrans) District 4. The information contained herein is only valid as of the date of the report, and will require an update to reflect additional information obtained.

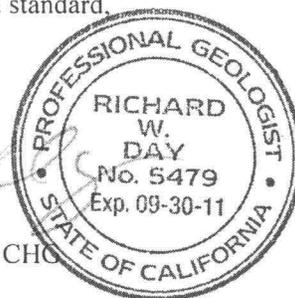
This report is not a comprehensive site characterization and should not be construed as such. The findings as presented in this report are predicated on the results of the limited sampling and laboratory testing performed. In addition, the information obtained is not intended to address potential impacts related to sources other than those specified herein. Therefore, the report should be deemed conclusive with respect to only the information obtained. We make no warranty, express or implied, with respect to the content of this report or any subsequent reports, correspondence or consultation. Geocon strived to perform the services summarized herein in accordance with the local standard of care in the geographic region at the time the services were rendered.

The contents of this report reflect the views of the author who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute a standard specification, or regulation.

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PRELIMINARY SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Preliminary Site Investigation Report for the State Route (SR) 152 Safety Improvements project was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 04A2912 and Task Order (TO) 33, EA 04-2A4401.

1.1 Project Description and Proposed Improvements

The project site consists of Caltrans right-of-way (ROW) along portions of the eastbound (EB) and westbound (WB) shoulders of SR 152 from Old Lake Road, Post Mile (PM) 16.2, to San Felipe Road (PM 19.5) in Santa Clara County, near the City of Gilroy. Proposed construction activities include hillside excavation, drilling for soil nail installation, and providing connectivity with existing drainage systems. The improvement project also consists of adding a left-turn lane between PM 18.5 and 19.5, constructing three retaining walls between PM 18.5 and 19.3, roadway widening and realignment, and bridge widening and expansion. The project location is depicted on the Vicinity Map, Figure 1.

1.2 General Objectives

The purpose of the soil investigation was to evaluate the concentrations of metals, including aeri ally deposited lead (ADL), total petroleum hydrocarbons (TPH), pesticides, herbicides, and naturally occurring asbestos (NOA) in soil at the Site. Groundwater was encountered during the investigation and samples were collected for metals, pesticides, and herbicides analysis. The investigative results will be used by Caltrans to inform the construction contractor if soil and/or groundwater impacts are present within the project boundaries for health, safety, management, and disposal evaluation purposes.

2.0 BACKGROUND

2.1 Hazardous Waste Determination Criteria

Regulatory criteria to classify a waste as California hazardous for handling and disposal purposes are contained in the CCR, Title 22, Division 4.5, Chapter 11, Article 3, §66261.24. Criteria to classify a waste as Resource, Conservation, and Recovery Act (RCRA) hazardous are contained in Chapter 40 of the Code of Federal Regulations (40 CFR), Section 261.

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste has the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten

times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP).

The above regulatory criteria are based on chemical concentrations. Wastes may also be classified as hazardous based on other criteria such as ignitability and corrosivity; however, for the purposes of this investigation, toxicity (i.e., lead concentrations) is the primary factor considered for waste classification since waste generated during the construction activities would not likely warrant testing for ignitability or other criteria. Waste that is classified as either California hazardous or RCRA hazardous requires management as a hazardous waste.

2.2 DTSC Variance

The DTSC issued a statewide Variance effective July 1, 2009, regarding the reuse of aerially deposited lead (ADL)-impacted soils within Caltrans right-of-way. Under the Variance, soil that is classified as a non-RCRA hazardous waste, based primarily on ADL content, may be suitable for reuse within Caltrans right-of-way. ADL soil that is classified as a RCRA hazardous waste is not eligible for reuse under the Variance and must be disposed as a RCRA hazardous waste (Caltrans Type Z3).

Depending on concentration levels, the ADL soil reused under the Variance must be covered with at least one foot of non-hazardous soil or a pavement structure and must always be at least 5 feet above the highest groundwater elevation. The ADL soil may not be placed in areas where it might contact groundwater or surface water (such as streams and rivers), and must be buried in locations that are protected from erosion that may result from storm water run-on and run-off.

Review of the statewide Variance indicates the following conditions regarding the reuse and management of ADL-impacted soil as fill material for construction and maintenance operations. If ADL soil classified as non-RCRA hazardous meets the Variance criteria but is not intended to be reused within Caltrans right-of-way, then the excavated soil must be disposed as a California hazardous waste (Caltrans Type Z2). A copy of the Variance is presented as Appendix A.

Caltrans Type Y1

ADL soil exhibiting a total lead concentration less than or equal to 1,411 milligrams per kilogram (mg/kg), a DI-WET soluble lead concentration less than or equal to 1.5 milligrams per liter (mg/l), and a pH value greater than or equal to 5.5 may be reused within Caltrans right-of-way and must be covered with at least one foot of non-hazardous soil.

Caltrans Type Y2

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration less than or equal to 1.5 mg/l, and a pH value greater than 5 and less than 5.5 may be reused within Caltrans right-of-way and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration less than or equal to 1,411 mg/kg, a DI-WET lead concentration greater than 1.5 mg/l and less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within Caltrans right-of-way and must be covered and protected from infiltration by a pavement structure.

ADL soil exhibiting a total lead concentration greater than 1,411 mg/kg and less than or equal to 3,397 mg/kg, a DI-WET lead concentration less than or equal to 150 mg/l, and a pH value greater than 5 may be reused within Caltrans right-of-way and must be covered and protected from infiltration by a pavement structure.

Caltrans Type Z2

ADL soil exhibiting a total lead concentration greater than 3,397 mg/kg, a DI-WET lead concentration greater than 150 mg/l, or a pH value less than or equal to 5 is not eligible for reuse and must be disposed as a California hazardous waste.

2.3 Environmental Screening Levels

The San Francisco Bay Regional Water Quality Control Board (SFRWQCB) has prepared a technical report entitled *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Interim Final* (May 2008), which presents Environmental Screening Levels (ESLs) for soil, groundwater, soil gas, and surface water, to assist in evaluating sites impacted by releases of hazardous chemicals. The ESLs are conservative values for more than 100 commonly detected contaminants, which may be used to compare with environmental data collected at a site. ESLs are strictly risk assessment tools and “not regulatory clean up standards.” The presence of a chemical at concentrations in excess of an ESL does not necessarily indicate that adverse impacts to human health or the environment are occurring; this simply indicates that a potential for adverse risk may exist and that additional evaluation is or “may be” warranted (SFRWQCB, 2008).

The following ESL tables were for comparison: Table A – Shallow Soil (≤ 3 meters below ground surface; bgs) – Groundwater is a Current or Potential Source of Drinking Water; Table B – Shallow Soil (≤ 3 meters bgs) – Groundwater is NOT a Current or Potential Source of Drinking Water; and Table F – Surface Water. The respective ESLs are listed at the end of Tables 3, 4, 6 and 7 for comparative purposes.

2.4 Naturally Occurring Asbestos

As defined in current California Air Resources Board (CARB) rules, serpentine material refers to any material that contains at least 10% serpentine, and asbestos-containing serpentine refers to serpentine materials with an asbestos content greater than 5% as determined by CARB Test Method 435. The use of serpentine material for road surfacing is prohibited in California by Title 17 of the California Code of Regulations (CCR) Section 93106, Asbestos Airborne Toxic Control Measure (ATCM) for Surfacing Application (ATCM 93106), unless the material has been tested and determined to have an asbestos content of less than 0.25%. Materials found to contain asbestos of 0.25% or more are considered to be designated waste if transported offsite, requiring disposal at a landfill facility designated to accept asbestos waste. Alternatively, soil containing NOA may be reused onsite if buried beneath a minimum six inches of soil or pavement.

3.0 SCOPE OF SERVICES

The scope of services requested by Caltrans under TO-33, EA 04-2A4401 included the following:

3.1 Pre-field Activities

- Prepared a Workplan dated May 26, 2010, that describes the requested scope of services and quality assurance/quality control (QA/QC) sampling and laboratory procedures. The Workplan was approved by Caltrans in the field on June 7, 2010.
- Prepared a site-specific Health and Safety Plan to provide guidelines on the use of personal protective equipment and the health and safety procedures implemented during the field activities.
- Provided a minimum of 48-hours notice to the local public utilities via Underground Service Alert prior to job site mobilization.
- Retained the services of Caltrans-approved and California-certified analytical laboratories to perform the chemical analysis of samples.

3.2 Field Activities

The field investigation was performed between June 7 and 10, 2010, by Geocon staff Chris Merritt, Professional Geologist (PG) and Dave Watts. The following field activities were performed:

- Advanced 38 soil borings to maximum depths of three feet using hand auger techniques, with the exception of borings 10-10 and 10-11. Borings 10-10 and 10-11 were advanced to groundwater, which was encountered at a depth of approximately six feet.
- Collected 96 soil samples for analysis of CAM17 metals, NOA, TPH, pesticides, and pH.
- Collected two grab-groundwater samples for CAM 17 metals analysis. Select grab-groundwater samples were also analyzed for pesticides and herbicides.
- Transported samples to California-certified environmental laboratories for analysis under standard chain-of-custody documentation.

4.0 INVESTIGATIVE METHODS

4.1 Sampling Procedures

Soil samples were collected from 38 boring locations identified by the Caltrans TO Manager. Soil boring locations are shown on the Site Plan, Figure 2. Boring locations were recorded using Differential Global Positioning System (DGPS) equipment, and are presented in Table 1.

The soil samples were collected from borings identified as 10-01 through 10-38 at depth intervals of 0 to 0.5 foot, 1.0 to 1.5 feet, and 2.5 to 3.0 feet, unless refusal was encountered. In addition, grab-groundwater samples were collected at borings 10-10 and 10-11.

Soil samples for metals, TPH, pesticides, and herbicides analyses were collected into new stainless steel tubes that were sealed with Teflon tape and plastic end-caps. Soil samples for lead and NOA analyses were collected into re-sealable plastic bags. For borings 10-10 and 10-11 advanced to groundwater, temporary polyvinyl chloride (PVC) screen was inserted into the borings and grab-groundwater samples were dispensed into laboratory-supplied containers using new PVC tubing fitted with a check valve.

Sample containers were labeled and transported to Caltrans-approved, certified environmental laboratories using standard chain-of-custody (COC) documentation. Soil borings were back-filled to surface with soil cuttings. Groundwater was not encountered during the field activities.

Geocon provided QA/QC procedures during the field activities. These procedures included washing the sampling equipment with a Liqui-Nox® solution followed by a double rinse with deionized water. Decontamination water was disposed to the ground surface within Caltrans right-of-way in a manner not to create runoff, away from drain inlets or potential water bodies.

4.2 Laboratory Analyses

Laboratory analyses were performed under a standard turn-around-time. The samples were submitted to Advanced Technology Laboratories (ATL) and to EMSL Analytical, Inc. (EMSL). Reproductions of the laboratory reports and chain-of-custody (COC) documentation are presented as Appendix B.

Soil samples were analyzed as follows:

- 38 samples for CAM17 metals according to Title 22 CCR, Environmental Protection Agency (EPA) Test Methods 6010 ICAP and 7471A
- 58 samples for total lead using EPA Method 6010 ICAP.
- 38 samples with total lead concentrations greater than 50 mg/kg (i.e. ten times the STLC of 5.0 mg/l) were further analyzed for WET lead

- 13 samples with WET lead concentrations greater than 5.0 mg/l were further analyzed for DI-WET lead.
- 11 samples with total lead concentrations greater than 100 mg/kg and WET lead concentrations greater than 5.0 mg/l were further analyzed for TCLP lead using EPA Method 1445.
- 38 samples for NOA using EPA Air Resources Board (ARB) Test Method 435A.
- 38 samples for TPH as gasoline (TPHg) and as diesel (TPHd) using EPA Test Method 8015M
- 6 samples for TPH as motor oil (TPHmo) using EPA Test Method 8015M.
- 6 samples for benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Test Method
- 22 samples for chlorinated pesticides using EPA Test Method 8081.
- 16 samples for chlorinated herbicides using EPA Test Method 8151.
- 27 soil samples for pH using EPA Method 9045.

Grab-groundwater samples were analyzed as follows:

- 2 samples for CAM17 metals according to Title 22 CCR, EPA Test Methods 6010 ICAP and 7471A
- Sample 10-10-W for chlorinated pesticides using EPA Test Method 8081.
- Sample 10-11-GW for chlorinated herbicides using EPA Test Method 8151.

4.3 Laboratory QA/QC

QA/QC procedures were performed for each method of analysis with specificity for each analyte listed in the test method's QA/QC. The laboratory QA/QC procedures included the following:

- One method blank for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One sample analyzed in duplicate for every ten samples, batch of samples or type of matrix, whichever was more frequent.
- One spiked sample for every ten samples, batch of samples or type of matrix; whichever was more frequent, with spike made at ten times the detection limit or at the analyte level.

Prior to submitting the samples to the laboratories, the COC documentation was reviewed for accuracy and completeness (Appendix B).

5.0 INVESTIGATIVE RESULTS

5.1 Subsurface Conditions

Observations during field activities indicated that surface soil at the project location generally consist of brown, gravelly sand and silt. Refusal was encountered in the borings as follows: at a depth of 1.5 feet in borings 10-05, 10-15, 10-17, 10-18, 10-24, and 10-31; at a depth of 2 feet in boring 10-32; at a depth of 2.5 feet in borings 10-07 and 10-19. Groundwater was encountered at depth of approximately six feet in borings 10-10 and 10-11.

5.2 Laboratory Analytical Results

Summaries of the analytical results are presented in Tables 2 through 7. Reproductions of the laboratory reports and chain-of-custody documentation are presented as Appendix B.

The analytical results are summarized below:

Soil

- The following metals were not detected above their respective laboratory reporting limits: antimony, beryllium, selenium, silver, and thallium.
- Lead was reported at concentrations ranging from 8.0 to 620 mg/kg, with 38 samples exceeding 50 mg/kg
- WET lead was reported at concentrations ranging from 1.1 to 34 mg/l
- DI-WET lead was reported above the laboratory reporting limit of 0.25 mg/l in 2 of 13 samples at concentrations of 0.26 mg/l and 0.30 mg/l.
- TCLP lead was reported in the 11 samples analyzed at concentrations ranging from <0.25 to 0.55 mg/l.
- Remaining CAM 17 metals were reported in the samples at concentrations less than ten times their respective STLCS.
- TPHd was reported at concentrations ranging from <1.0 to 720 mg/kg.
- TPHmo was reported at concentrations ranging from 5.7 to 150 mg/kg.
- Pesticides were reported as follows:
 - 4,4'-DDE in three samples at concentrations between 2.6 and 16 micrograms per kilogram ($\mu\text{g}/\text{kg}$)
 - 4,4'-DDT in six samples at concentrations between 2.4 and 84 $\mu\text{g}/\text{kg}$
- TPHg, BTEX, or herbicides were not detected above their respective laboratory reporting limits.
- NOA was not detected above the CARB limit of 0.25%.

Grab-Groundwater

- CAM 17 metals were reported in the samples, with the exception of the following that were not detected above their respective laboratory reporting limits: antimony, beryllium, cadmium, molybdenum, selenium, silver, and thallium.
- TPHd was reported at concentrations of 0.054 mg/l and 0.055 mg/l.
- TPHmo was reported at concentrations of 0.09 mg/l and 0.12 mg/l.
- TPHg, pesticides, or herbicides were not detected above their respective laboratory reporting limits.

5.3 Laboratory Quality Assurance/Quality Control

We reviewed the QA/QC results provided with the laboratory analytical reports. The data indicate non-detect results for the method blanks.

The relative percent differences (RPDs) of the duplicate samples for several of the analyses were outside criteria. The RPDs for several of the matrix spike duplicate samples for the analyses were outside criteria. The Case Narratives in the laboratory reports state that each analytical batch was validated by the Laboratory Control Sample (LCS). The data showed acceptable recoveries and RPDs for the remainder of the duplicates and matrix spikes. Dilution was necessary for several analyses due to sample matrix.

Based on this limited data review, no additional qualifications of the soil data are necessary and the data are of sufficient quality for the purposes of this report.

5.4 Statistical Evaluation for Lead Detected in Soil Samples

The lead data for the Site were treated as four sample populations for statistical evaluation, which consisted of the following:

- A) SR 152 eastbound shoulder borings 10-01 through 10-09
- B) SR 152 eastbound shoulder borings 10-10 through 10-19
- C) SR 152 eastbound shoulder borings 10-20 through 10-30
- D) SR 152 westbound shoulder borings 10-31 through 10-38

Statistical methods were applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and WET lead concentrations exists that would allow the prediction of WET lead concentrations based on calculated UCLs.

5.4.1 Calculating the UCLs for the Arithmetic Mean

The upper one-sided 90% and 95% UCLs of the arithmetic mean are defined as the values that, when calculated repeatedly for randomly drawn subsets of site data, equal or exceed the true mean 90% and 95% of the time, respectively. Statistical confidence limits are the classical tool for addressing uncertainties of a distribution mean. The UCLs of the arithmetic mean concentration are used as the mean concentrations because it is not possible to know the true mean due to the essentially infinite number of soil samples that could be collected from a site. The UCLs therefore account for uncertainties due to limited sampling data. As data become less limited at a site, uncertainties decrease, and the UCLs move closer to the true mean.

Non-parametric bootstrap techniques were used to calculate the UCLs. For those samples in which total lead was not detected at concentrations exceeding the laboratory reporting limit, a value equal to one-half of the detection limit was used in the UCL calculation. The bootstrap test results are included in Appendix C. The following table presents the calculated UCLs and statistics for the data set.

Borings 10-01 through 10-09

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0.0 to 0.5	56.0	61.8	38.3	7.7	140
1.0 to 1.5	108.9	117.2	80.7	9.1	230
2.5 to 3.0	83.8	93.7	52	12	210

Borings 10-10 through 10-19

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0.0 to 0.5	56.3	60.5	42.6	8.3	110
1.0 to 1.5	55.6	58.9	42.8	14	110
2.5 to 3.0	30.2	32.0	24.2	9.2	38

Borings 10-20 through 10-30

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0.0 to 0.5	237.7	257.8	160.5	15	620
1.0 to 1.5	91.5	99.7	66.5	14	240
2.5 to 3.0	79.3	87.9	50.6	9.6	260

Borings 10-31 through 10-38

SAMPLE INTERVAL (feet)	90% TOTAL LEAD UCL (mg/kg)	95% TOTAL LEAD UCL (mg/kg)	TOTAL LEAD MEAN (mg/kg)	MINIMUM VALUE (mg/kg)	MAXIMUM VALUE (mg/kg)
0.0 to 0.5	70.6	73.2	60.4	26	100
1.0 to 1.5	Not Calculated	Not Calculated	26	20	34

5.4.2 Correlation of Total and WET Lead

Total and corresponding WET lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of WET lead concentrations based on the UCLs calculated above in Section 4.4.1.

To estimate the degree of interrelation between total and corresponding WET lead values (x and y , respectively), the *correlation coefficient* [r] is used. The correlation coefficient is a ratio that ranges from +1 to -1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation coefficient* was calculated for the 38 (x , y) data points (i.e., soil samples analyzed for both total lead [x] and WET lead [y]). The resulting *coefficient of determination* (r^2) equaled 0.8407, which yields a corresponding *correlation coefficient* (r) of 0.9169.

For the *correlation coefficient* that indicates a linear relationship between total and WET lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0585(x)$, where x represents total lead concentrations and y represents predicted WET lead concentrations.

This equation was used to estimate the expected WET lead concentrations for the UCLs calculated in for samples collected from the Site (see Section 5.4.1). Regression analysis results and a scatter plot depicting the (x , y) data points along with the regression line are included in Appendix C. The predicted WET lead concentrations are summarized in Tables 8a-d.

6.0 CONCLUSIONS

Waste classifications are evaluated based on the 90% UCL of the lead content for the relevant excavation depths; this has historically been considered sufficient to satisfy a good faith effort by the EPA as discussed in SW-846. Risk assessment characterization is based on the 95% UCL of the lead content in the waste for the relevant depths; this is in accordance with the Risk Assessment Guidance for Superfund (RAGS) Volume 1 Documentation for Exposure Assessment. Per Caltrans, the 90% UCLs are to be used to evaluate onsite reuse and the 95% UCLs are to be used to evaluate offsite disposal.

6.1 Predicted Waste Classifications

6.1.1 SR 152 Eastbound Shoulder Borings 10-01 through 10-09

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs for data collected from this portion of the Site. Weighted averages are calculated by using the total lead UCL concentration for each 0.5-foot depth interval as the value for the underlying 0.5-foot depth interval (unless a sample was collected from the underlying depth interval). The total and WET lead calculations are summarized in Table 8a.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	56	3.3	62	Non-Hazardous
<i>Underlying soil (1.0 to 3.0 ft)</i>	<i>103</i>	<i>6.0</i>	<i>111</i>	<i>Hazardous</i>
0 to 2.5 ft	88	5.1	95	Hazardous
<i>Underlying Soil 2.5 to 3.0 ft)</i>	<i>84</i>	<i>4.9</i>	<i>94</i>	<i>Non-Hazardous</i>
0 to 3.0 ft	87	5.1	95	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated to a depth of 2.5 feet would be classified as a California hazardous waste since the predicted WET lead concentrations are greater than the lead STLC of 5.0 mg/l. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Underlying soil (i.e., deeper than 2.5 feet) would be classified as non-hazardous.

Based on the reported DI-WET results, soil excavated from the surface to a depth of 2.5 feet may be reused onsite (as Caltrans Type Y1) in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement.

6.1.2 SR 152 Eastbound Shoulder Borings 10-10 through 10-19

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs for data collected from this portion of the Site. The total and WET lead calculations are summarized in Table 8b.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	56	3.3	60	Non-Hazardous
<i>Underlying soil (1.0 to 3.0 ft)</i>	<i>49</i>	<i>2.9</i>	<i>52</i>	<i>Non-Hazardous</i>
0 to 2.5 ft	56	3.3	60	Non-Hazardous
<i>Underlying Soil (2.5 to 3.0 ft)</i>	<i>30</i>	<i>1.8</i>	<i>32</i>	<i>Non-Hazardous</i>
0 to 3.0 ft	52	3.0	55	Non-Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, excavated soil would be classified as non-hazardous since the predicted WET lead concentrations are less than the lead STLC of 5.0 mg/l.

6.1.3 SR 152 Eastbound Shoulder Borings 10-20 through 10-30

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs for data collected from this portion of the Site. The total and WET lead calculations are summarized in Table 8c.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	238	14	258	Hazardous
<i>Underlying soil (1.0 to 3.0 ft)</i>	<i>88</i>	<i>5.2</i>	<i>97</i>	<i>Hazardous</i>
0 to 2.5 ft	150	8.8	163	Hazardous
<i>Underlying Soil (2.5 to 3.0 ft)</i>	<i>79</i>	<i>4.6</i>	<i>88</i>	<i>Non-Hazardous</i>
0 to 3.0 ft	138	8.1	150	Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, soil excavated to a depth of 2.5 feet would be classified as a California hazardous waste since the predicted WET lead concentrations are greater than the lead STLC of 5.0 mg/l. Based on the TCLP lead results, excavated soil would not be classified as a RCRA hazardous waste. Underlying soil (i.e., deeper than 2.5 feet) would be classified as non-hazardous.

Based on the reported DI-WET results, soil excavated from the surface to a depth of 2.5 feet may be reused onsite (as Caltrans Type Y1) in accordance with the DTSC Variance by placing the excavated soil under clean fill or pavement.

6.1.4 SR 152 Westbound Shoulder Borings 10-31 through 10-38

The following table summarizes the predicted waste classification for excavated soil based on the calculated weighted averages of the total lead UCLs for data collected from this portion of the Site. The total and WET lead calculations are summarized in Table 8d.

Excavation Depth	90% UCL Total Lead (mg/kg)	90% UCL Predicted WET Lead (mg/l)	95% UCL Total Lead (mg/kg)	Waste Classification
0 to 1.0 ft	71	4.1	73	Non-Hazardous
<i>Underlying soil (1.0 to 1.5 ft)</i>	<i>34</i>	<i>2.0</i>	<i>34</i>	<i>Non-Hazardous</i>
0 to 1.5 ft	58	3.4	60	Non-Hazardous

90% UCL applicable for waste classification and onsite reuse; 95% UCL applicable for risk assessment and offsite disposal

Based on the data presented in the above table, excavated soil would be classified as non-hazardous since the predicted WET lead concentrations are less than the lead STLC of 5.0 mg/l.

6.2 Soil Results

6.2.1 CAM 17 Metals

The CAM 17 metals concentrations in site soil were compared to ESLs (Table A, SFRWQCB, May 2008). Arsenic and vanadium were the only metals with reported concentrations greater than their respective ESL values in the soil samples collected at the site. Arsenic was detected in the samples at concentrations between 1.1 and 25 mg/kg, exceeding the residential land use ESL of 0.39 mg/kg and the commercial/industrial land use ESL of 1.6 mg/kg for shallow soil (≤ 3 meters; SFRWQCB, Table A). Vanadium was reported in the soil samples at concentrations between 25 mg/kg and 63 mg/kg, exceeding the residential land use ESL of 16 mg/kg for shallow soil.

Upper one-sided 95% UCLs were calculated for the full set of arsenic and vanadium concentrations. The UCLs were compared with the residential and commercial/industrial land use ESLs and with published background levels typically present in California soils as presented in *Background Concentrations of Trace and Major Elements in California Soils* (Kearney Foundation of Soil Science, Division of Agriculture and Natural Resources, University of California, March 1996). The bootstrap results are included in Appendix C. The calculated standard bootstrap UCLs, ESLs and published background concentrations are summarized in the table below:

Metal	95% UCL	RESIDENTIAL ESL	COMMERCIAL/ INDUSTRIAL ESL	PUBLISHED BACKGROUND MEAN ¹	PUBLISHED BACKGROUND RANGE ¹
Arsenic	7.3	0.39	1.6	3.5	0.6 to 11.0
Vanadium	39.5	16	200	112	39 to 288

Concentrations reported in milligrams per kilogram (mg/kg)

¹ Kearney Foundation of Soil Science, March 1996

The 95% UCL value for arsenic in the soil samples collected at the Site is greater than the residential and commercial/industrial land use ESLs, and is within the published background range. The SFRWQCB *November 2007 Update to Environmental Screening Levels (ESLs) Technical Document* states that ambient background concentrations of arsenic typically exceed risk-based screening levels. In such instances, it may be more appropriate to compare site data to regionally specific established background levels.

The 95% UCL value for vanadium in the soil samples collected at the site is greater than the residential land use ESL, however is less than the commercial/industrial land use ESL and published background concentrations.

Offsite reuse or disposal of excavated soil may be restricted based on arsenic and vanadium content.

6.2.2 Naturally Occurring Asbestos

The soil sample results indicate that NOA is not present at the Site at concentrations exceeding the CARB regulatory limit of 0.25%. Therefore, based upon the data collected during this investigation, there are no restrictions for materials generated during proposed construction activities at the Site with respect to NOA content.

6.2.3 Total Petroleum Hydrocarbons

TPHd was detected in 30 out of the 33 samples analyzed, at reported concentrations ranging from 1.6 to 720 mg/kg. Five samples had reported TPHd concentrations exceeding the residential and commercial/industrial land use ESLs of 83 mg/kg. We calculated 95% UCLs for each sample population, which are summarized below:

Sample Population	Borings	95% UCL TPHd
A	10-01 through 10-09	135.6
B	10-10 through 10-19	276.1
C	10-20 through 10-30	36.7
D	10-31 through 10-38	22.4

The calculated 95% UCLs for sample populations A and B exceed the residential and commercial/industrial land use ESLs, and the 95% UCLs for sample populations C and D are less than the ESLs.

Offsite reuse or disposal of excavated soil from the eastbound shoulders between borings 10-01 and 10-19 may be restricted based on TPHd content.

6.2.4 Pesticides and Herbicides

Pesticides and herbicides were not reported above their respective ESLs.

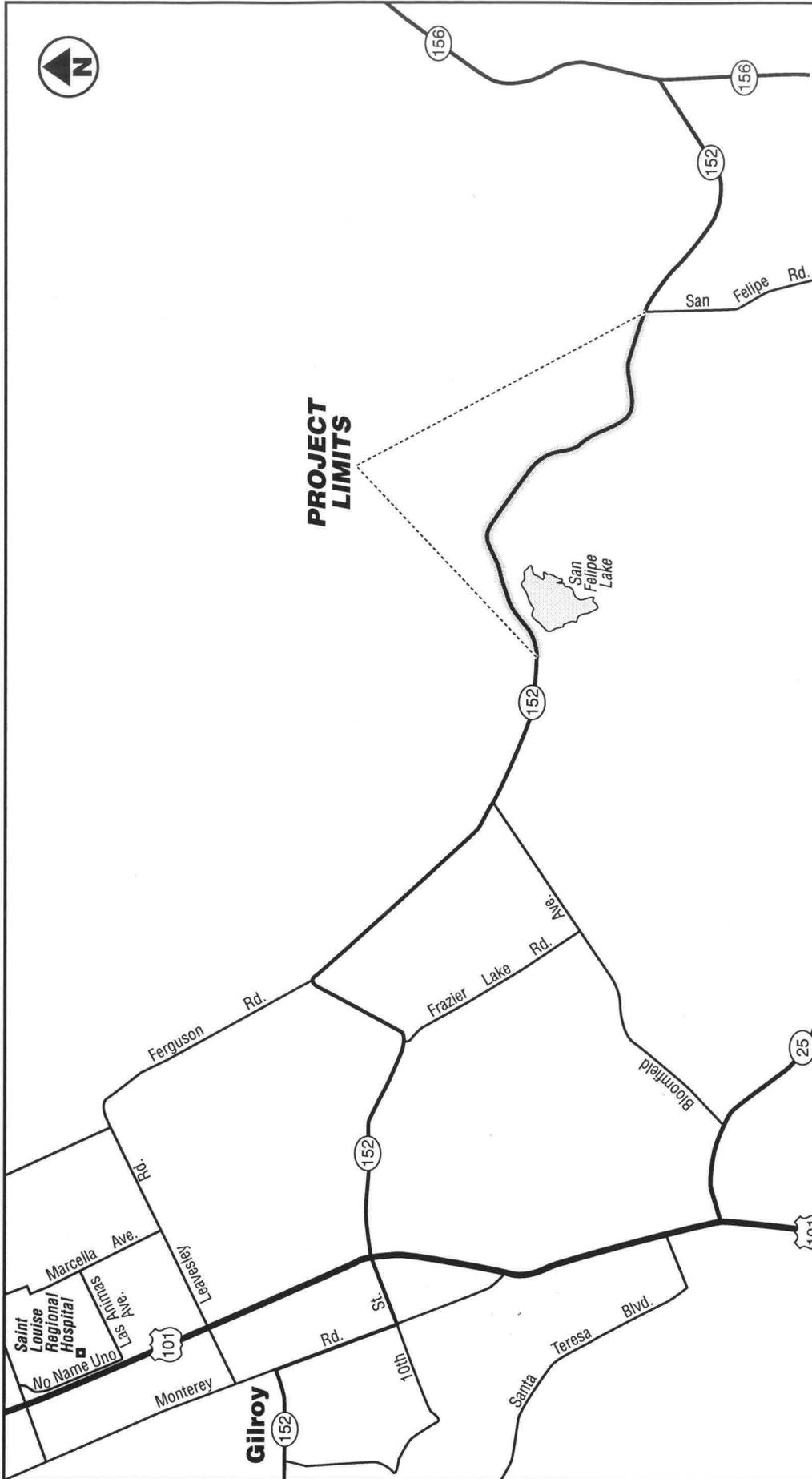
6.3 Grab-Groundwater Results

CAM 17 metals, with the exception of silver, were reported in the grab-groundwater samples at concentrations exceeding their respective ESLs for groundwater and surface water (Tables A and F).

Groundwater encountered during the construction project may require special handling and/or treatment prior to disposal or discharge based on CAM 17 metals concentrations.

6.4 Worker Protection

Per Caltrans requirements, the contractor(s) should prepare a project-specific health and safety plan to prevent or minimize worker exposure to soil and groundwater. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of soil and groundwater.



GEOCON
 CONSULTANTS, INC.
 6671 BRISA STREET - LIVERMORE, CA 94550
 PHONE 925.371.5900 - FAX 925.371.5915

**SCL-152 Improvements Project -
 Old Lake Road to San Felipe Road**

Santa Clara County, California

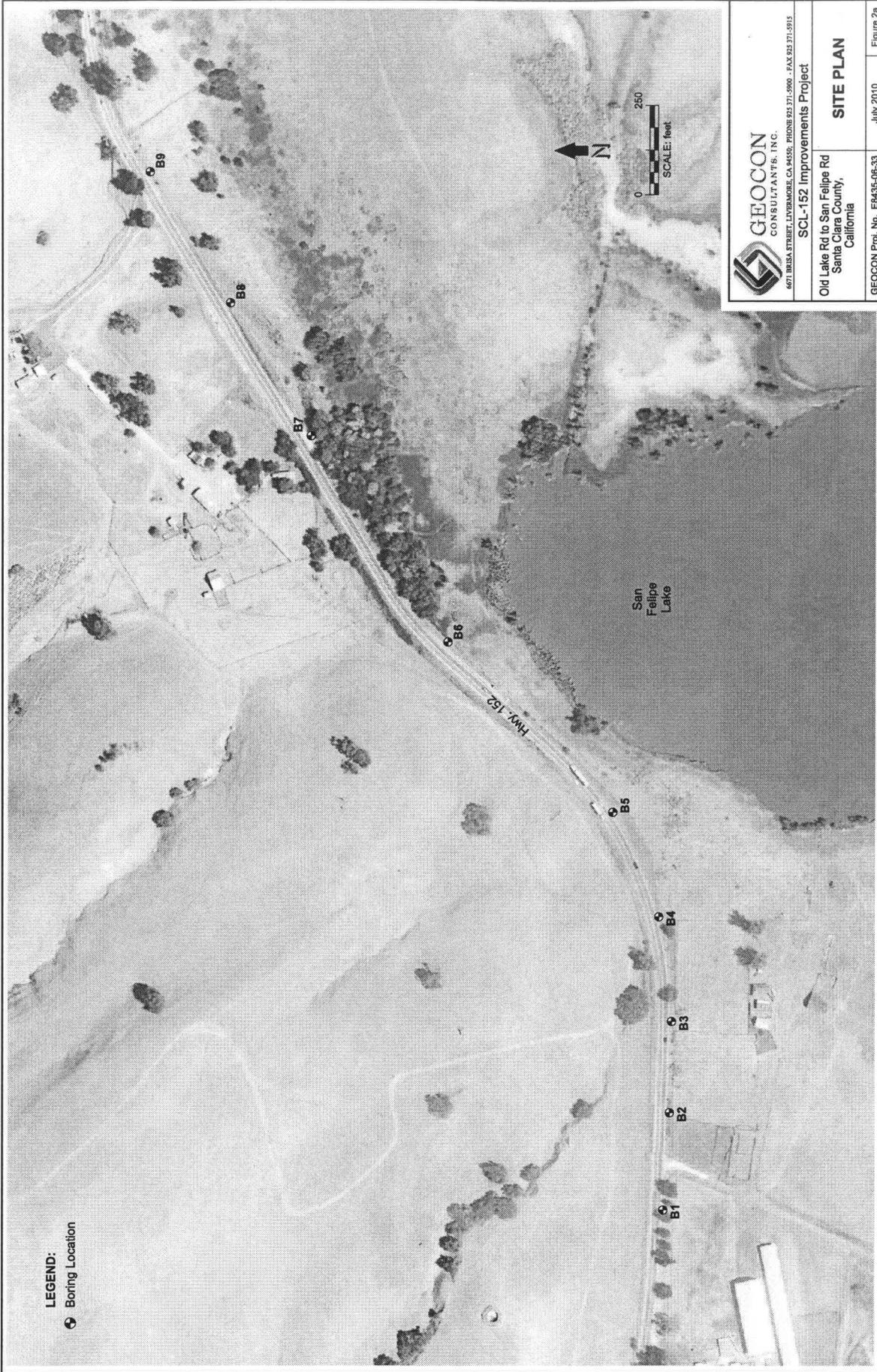
GEOCON Proj. No. E8435-06-33

Task Order No. 33

July 2010

Figure 1







 <p>GEOCON CONSULTANTS, INC. 6971 BRISA STREET, LIVERMORE, CA 94550. PHONE 925.371.5900 - FAX 925.371.5915</p>	<p>SCL-152 Improvements Project</p>
	<p>Old Lake Rd to San Felipe Rd Santa Clara County, California</p>
<p>GEOCON Proj. No. EB435-06-33</p>	<p>July 2010</p>
<p>Figure 2b</p>	

SITE0710



LEGEND:
 Boring Location



6071 BRISA STREET, DUBLIN, CA 94568, PHONE 925.371.4900, FAX 925.371.9915

SCL-152 Improvements Project

Old Lake Rd to San Felipe Rd
 Santa Clara County,
 California

SITE PLAN

GEOCON Proj. No. EB485-06-33 July 2010 Figure 2c

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. BRIAN MORI
Senior Bridge Engineer
Office of Bridge Design - West

Date: July 29, 2010

Attention: D. Romero

File: 04-SCL-152 PM 16.2/16.5
PM 18.5/19.5
04-2A4400
Soil Nail Walls #1 & #2

From: ^{AK} M. ZABOLZADEH/A. KADDOURA
Associate Materials & Research Engineers
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

^{H. Nikou} HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: Foundation Report for the Proposed Soil Nail Retaining Walls #1 & #2

1. INTRODUCTION

This report supersedes our Foundation Report dated April 23, 2010 for the above referenced project. This is due to the design changes of minor wall elevations and the proposed extension of Wall #2.

This memorandum provides our foundation recommendation for the proposed new Retaining Walls #1 and #2 in the above referenced project. These retaining walls are proposed to be soil nail walls and will be referred to as Soil Nail Wall #1 and #2 (SNW #1 and SNW #2) throughout this report.

To accommodate for the proposed widening and realignment of Route 152 (from west of Lovers Lane and east of San Felipe Road) by cutting into the adjacent hills, we have considered different types of retaining wall alternatives such as Caltrans Standard Type 1 and Type 7 Retaining Walls, and Soil Nail Walls. However, for this project, because of the geology of the adjacent hills, long and continuous cut slope above the proposed wall, and most importantly for seismic reasoning and ease of construction, we believe Soil Nail Wall would be the most feasible and economical alternative. Therefore, we recommend constructing Soil Nail Walls along the face of the proposed cuts.

MR. BRIAN MORI
Attn: D. Romero
July 29, 2010
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2. SCOPE OF WORK

The scope of our foundation investigation included:

- Field mapping, reviewing existing reports and information available on site, geology, seismicity and subsurface soil/rock conditions.
- Subsurface investigation using exploratory boring and a laboratory-testing program.

3. REGIONAL AND SITE GEOLOGIC SETTING

Located within the Coast Range geomorphic province of California, the geology of the region consists of northwest-trending ridges, gently sloping hills, intermontane valleys, and large elongated depressions. The San Andreas Fault system, the most prominent geologic feature in the area, includes the San Andreas Fault as well as numerous splays, including the Hayward and Calaveras Faults, which together take up strain between the northward migrating Pacific plate and the southward (relatively) moving North American plate. The major faults within the system are predominantly right-lateral, strike-slip faults with some compressional component, and these act together to form the prominent ridges and valleys. The San Francisco Bay, a partially filled northwest-trending depression extending from the Santa Clara Valley in the south to the Petaluma Valley in the north, is a direct result of these fault interactions.

Site geology is based on the mapping of Graymer, 1997, and Logs of Test Borings recovered during a geotechnical investigation within the project limits in 2001.

The oldest rocks within the project limits are unnamed Cretaceous sandstone, mudstone, and conglomerates. Borings from along the alignment indicate that this unit is typically moderately to thinly bedded, moderately to intensely weathered, and intensely fractured. Fractures are typically filled with moist, firm, orange clay. Locally the sandstone can be slightly weathered and hard. Conglomerates were not encountered in previous borings. Stratigraphically above the Cretaceous sedimentary rocks is a Paleocene and/or Eocene-age glauconitic sandstone. This unit is poorly exposed along the alignment. Lying above the sandstone are the Quaternary Packwood Gravels, which are exposed along the western end of the alignment. Within the exposure of the Packwood Gravels is the Calaveras Fault, an active right-lateral strike slip fault that comprises part of the larger San Andreas Fault system. This fault juxtaposes slivers of Jurassic Serpentine against the Packwood

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Gravels within a drainage north of the alignment. The serpentine is limited to exposures north of the roadway and will not impact the project.

SR 152 within the project limits traverses roughly perpendicular to the strike of the major geologic units. Where the alignment crosses drainages, alluvial fan or stream deposits underlie the roadway, otherwise the roadbed is constructed on shallow cuts in bedrock.

Refer to the attached Geologic Map for Details.

4. FAULT AND SEISMIC DATA

The southern end of the Calaveras Fault crosses the western extent of the project. The fault is best expressed by a series of linear ridges and valleys northwest of San Felipe Lake, as well as the lake itself. Other faults affecting the project include the Sargent and San Andreas Faults to the west and the Quien Sabe Fault to the south (see Regional Fault Map herein). The project would be exposed to significant seismic hazards during a strong event including fault rupture, strong ground shaking, subsidence, and liquefaction. These are described in greater detail in Section 7.3. The following Table 1 lists the nearest faults, their maximum magnitude, and peak ground accelerations during maximum events.

Table 1

FAULT	Distance from project	Maximum Credible Earthquake	Peak Ground Acceleration
Calaveras	0 mi	7.5	0.70g
San Andreas	9.3 mi	8.0	0.45g
Quien Sabe	2.5 mi	6.25	0.45 g
Sargent	6.2 mi	6.75	0.32g

Refer to the attached Regional Fault Map for Details.

5. FOUNDATION SOIL AND GROUNDWATER

The Office of Geotechnical Design – West, a Division of Engineering Services, investigated the subsurface conditions (June and July of 2002 for EA 04-174900 that was

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Page 4

shelved due to budgetary reasons, and February 2010) at the site using Christensen CS 2000 track drill rig.

The foundation investigation for Walls #1 and #2 consisted of drilling six sub horizontal boring (HP-1 through HP-5 and R-10-001). Bedrock recovered in the boring was siltstone, sandstone, and claystone. The bedrock is moderately hard, intensely weathered, and intensely to very intensely fractured. Local clayey shears are common. Recovery and RQD values were low to high. The boring was inclined upward slightly (<5°) for groundwater control, however no groundwater was encountered. Refer to the LOTB for complete soil/rock description.

LOTB sheets will be furnished to you upon completion.

6. RECOMMENDATIONS

The approximate limits, lengths, and maximum heights of the walls are listed in Table 2 below.

Table 2

Soil Nail Wall No.	Approximate Wall Limits	Length (ft)	Maximum Height (ft)
SNW #1	"L" Sta. 228+33± to Sta. 230+42±	209	15±
SNW #2	"L" Sta. 234+98± to Sta. 258+92±	2394	21±

A. Design Criteria for Soil Nail Walls

In this project, the design for the proposed soil nail walls is performed using the recently improved Caltrans' Computer Program "SNAILZWIN", Version 5.1. The rock/soil parameters used in this program were selected based on the horizontal borings (See LOTB sheets for details) drilled within the proposed wall limits, and field observations.

The following limiting criteria are used in the design of the soil nail retaining Walls #1 and #2

- The minimum factor of safety with seismic loading (pseudo-static): $FOS_{dynamic} = 1.0$; a horizontal pseudo-static coefficient of 0.20 g was used to simulate seismic loading conditions.

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- The maximum spacing of the nails ($S_v \times S_h$),
 S_v is the vertical spacing of the nails
 $S_{v,MAX} = 5$ ft.
 S_h is the horizontal spacing of the nails
 $S_{h,MAX} = 5$ ft.
- The inclination angle (θ) of all the nails to the horizontal = 15 degrees
- The average soil/rock design parameters used for design of each soil nail wall (based on the LOTB sheet) were:
Friction Angle (ϕ) = 34 degrees
Cohesion (c) = 500 psf
Unit Weight (γ) = 125 pcf
- Soil nail profiles lines shall be parallel to the top of the wall except the bottom most line, which shall be parallel to the bottom of the wall.
- Minimum and maximum vertical distances from the bottom of the wall to the bottom level of the soil nail assembly (SB) shall be 1.5 ft and 3 ft, respectively.
- Soil nails shall be of ASTM Designation: A615, Grade 60, $f_s = 60,000$ psi and #9 bars for both Soil Nail Walls.
- Pullout resistance between grout and drilled hole = 3.0 kips per linear foot of bonded length.
- Punching shear capacity = 40 kips.
- The vertical distance between the bottom of the wall and the finished grade of the proposed bench = 1.5 ft.
- Vertical distance between top of wall (cut line as shown on the plans) and the top most row of soil nails. $ST = 2$ ft.

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- Minimum and maximum spacing, both horizontal and vertical, of soil nail assembly = 1.5 and 5 ft, respectively.
- Minimum and maximum distances between the beginning/end of wall and the first/last soil nail = 1.5 ft and 2.5 ft, respectively.
- The designed lengths (embedment depth) of the soil nails will be shown on the proposed Soil Nail Retaining Wall Plans.

B. Field Testing

Field verification of the design pullout resistance values used in the design ensures that the nail design loads can be carried without excessive movements and with an acceptable factor of safety for the service life of the wall. Verification testing and proof testing shall be conducted in order to verify the design pullout resistance and to ensure consistency of the quality of drilling, installation and grouting technique.

Verification testing and stability testing for each “wall zone” shall be conducted prior to the installation of production soil nails in accordance to the special provisions at locations recommended by the Engineer. It is recommended that locations for these tests be shown in the Contractor’s working drawing submittal for approval. The wall zones shall be defined as follows:

Soil Nail Wall #1

<u>Zone</u>	<u>Begin Stationing</u>	<u>End Stationing</u>	<u>Upper Elev.</u>	<u>Lower Elev.</u>
1	228+33	230+42	165 ft	158 ft
2	228+33	230+42	158 ft	151 ft

Soil Nail Wall #2

<u>Zone</u>	<u>Begin Stationing</u>	<u>End Stationing</u>	<u>Upper Elev.</u>	<u>Lower Elev.</u>
1	234+98	246+00	181 ft	165 ft
2	234+98	246+00	165 ft	150 ft
3	246+00	258+92	190 ft	175 ft
4	246+00	258+92	175 ft	160 ft

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Proof test on at least eight (8) sacrificial test nails shall be performed for every one hundred production soil nails. The locations of such proof test locations of pullout tests are shown on the plan. An additional two (2) sacrificial test nails for every one hundred production soil nails may be necessary during construction for further quality assurance. Locations of both the proof testing and verification testing shall be chosen in such a manner that the entire limits of the wall is covered, particularly where significant changes in the ground condition and soil/rock characteristics are expected. The pullout test procedure described in the standard special provisions shall be followed. If the test nails fail to meet the requirements stated in the special provisions, the OGDW shall be contacted immediately for assessment of the failure and modification of the wall design, if necessary.

C. Wall Drainage System

Although groundwater was not encountered during drilling operations (based on the boring logs), still, to protect against any possible hydrostatic pore pressure build up behind the wall and to direct the surface runoff away from the wall, we recommend constructing a proper internal and external drainage system. For these drainage systems, we recommend the following:

i. Internal Drainage System

- Place 1 ft wide prefabricated geotextile drain strips (placed with the geotextile side against the ground) vertically on 5 ft centers prior to applying shotcrete. The geotextile drain strips shall start from the bottom of the proposed gutter and end at the bottom PVC pipe weep hole as shown on the attached Exhibit A.
- Install PVC pipe (2 inches to 3 inches in diameters) weep holes through the shotcrete face at the center and base of the prefabricated geotextile drainage strips were shown on the attached Exhibit A.

ii. External Drainage System

- A concrete cap is needed at the top of the wall from the beginning of the wall to the end of the wall for sheet flow of the surface water away from the wall.

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- A Drainage Inlet (DI) may be needed at the beginning and end of the wall to collect the surface runoff.
- The District Hydraulics Branch should be contacted for specific drainage recommendations.

D. Wall Facing System

The design of the wall facing system is the responsibility of the Office of Structures Design (DSD) and Landscape Architecture Branch.

7. CONSTRUCTION CONSIDERATIONS

Due to the sandy nature of the soils, caving of the nail holes is anticipated and the use of casing may be required.

8. CORROSION

Corrosion studies are conducted in accordance with the requirements of California Test Method No. 643.

The Department considers the site to be corrosive to foundation elements if one or more of the following conditions exist for the representative soil and/or water samples taken at the site:

The following table provides our corrosion test summary:

<i>Boring</i>	<i>SIC Number</i>	<i>Sample Depth</i>	<i>Resistivity (Ohm-Cm)</i>	<i>pH</i>	<i>Chloride Content (ppm)</i>	<i>Sulfate Content (ppm)</i>
R-10-001	634916	15'-25'	2088	7.8	N/A	N/A

Note: *Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.*

Based on the laboratory test results on the soil samples, the site appears to be non-corrosive

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Corrosion mitigation measures should be designed using these test results according to the guidelines provided in the Structure Reference Specification 19-660 (19NAIL).

9. DISCLAIMER

The recommendations contained in this report are based on specific project information regarding structure type, location, and design loads that have been provided by the Office of West. If any conceptual changes are made during final project design, the Office of Geotechnical Design-West, Branch A should review those changes to determine if these foundation recommendations are still applicable.

* * * * *

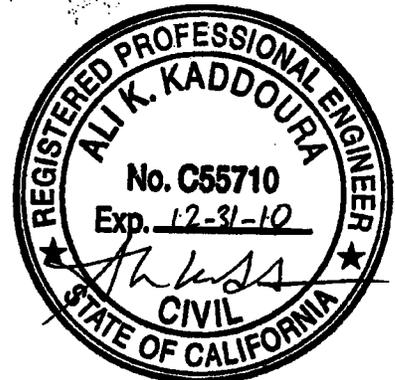
Any questions regarding the above recommendations should be directed to the attention of Mohammad Zabolzadeh/Ali Kaddoura at 510-286-4831/4676 or Hooshmand Nikoui at 510-286-4811, at the Office of Geotechnical Design-West, Branch A.

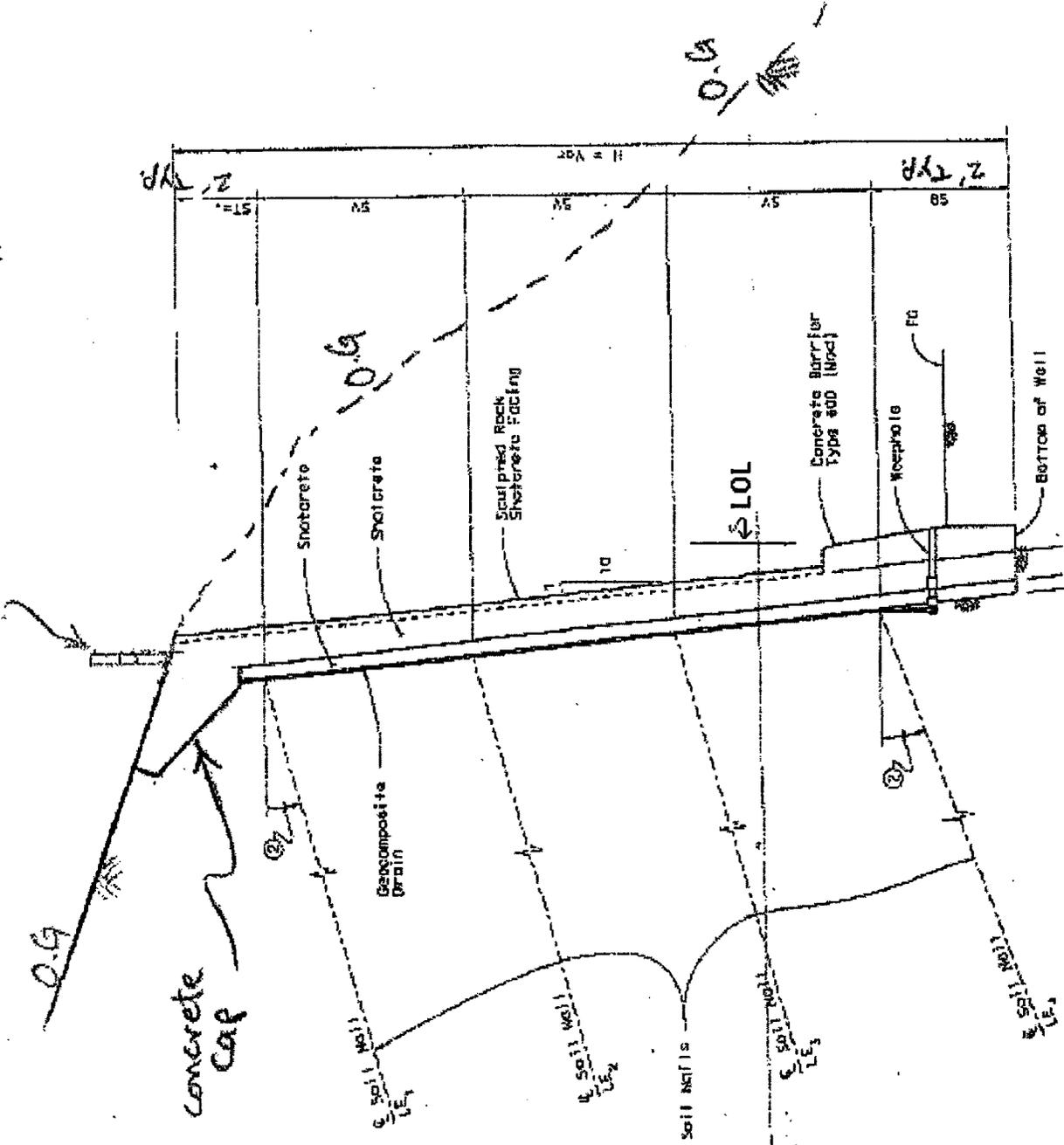
Attachments:

c: TPokrywka, HNikoui, MZabolzadeh, AKaddoura - (GS west), Mark Willian (GS Corporate), RE pending File (Structure Construction), John Stayton (DES OE), Brian Kearney (District ME), Fariba Zohoury (District PM), Fatemeh Arbabian (District PE)

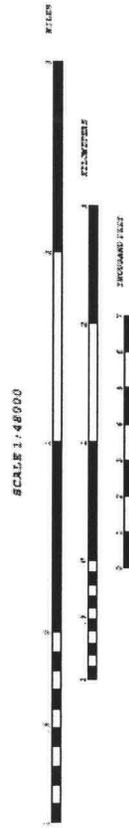
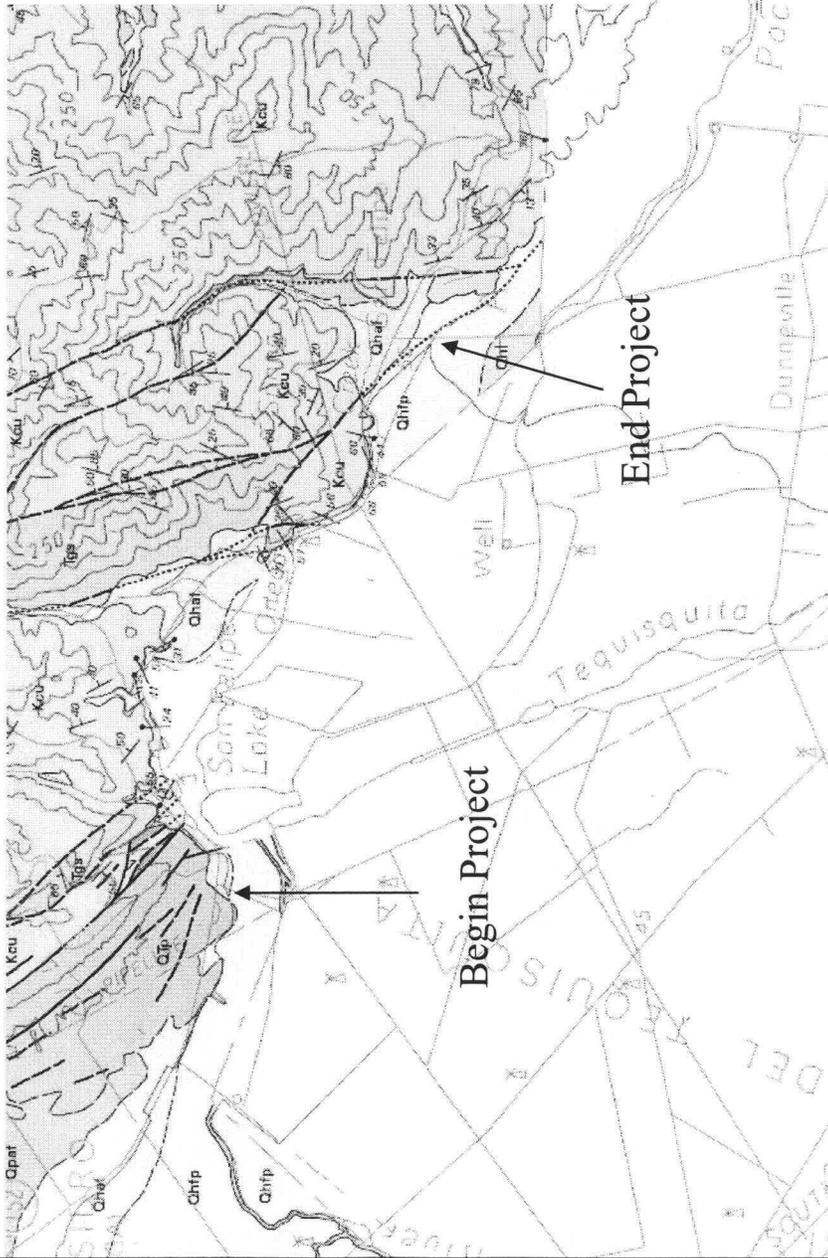
Zabolzadeh-Kaddoura/mm/2A4400-Soil Nail Walls #1 & 2 FR new

AKaddoura/mm





TYPICAL SECTION



CONTOUR INTERVAL 50 METERS

MAP UNITS
SURFICIAL DEPOSITS

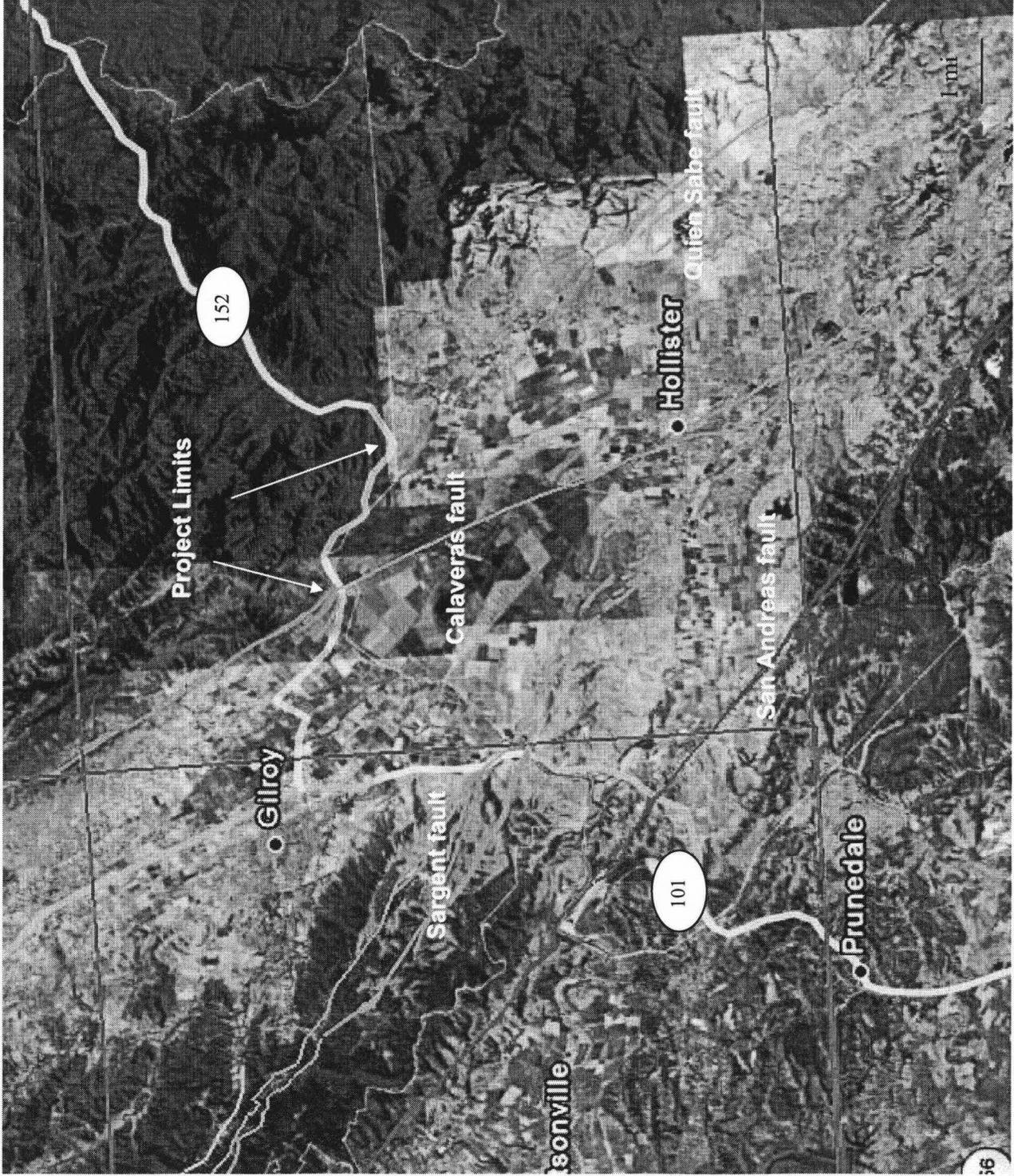
- af - Artificial fill (Historic)
- alf - Artificial levee fill (Historic)
- Qhasc - Artificial stream channels (Holocene)
- Qhsc - Stream channel deposits (Holocene)
- Qhl - Natural levee deposits (Holocene)
- Qhfp - Floodplain deposits (Holocene)
- Qhb - Floodbasin deposits (Holocene)
- Qhaf - Alluvial fan and fluvial deposits (Holocene)
- Qls - Landslide deposits (Pleistocene and/or Holocene)
- Qpaf - Alluvial fan and fluvial deposits (Pleistocene)
- Qpaf1 - Alluvial terrace deposits (Pleistocene)
- Qpoaf - Older alluvial fan deposits (Pleistocene)
- QTV - Unnamed volcanic rocks (Pliocene and/or Pleistocene)
- QTP - Packwood gravels (Pliocene and Pleistocene)
- COYOTE BLOCK**
- Tgs - Glauconitic sandstone (Paleocene and/or Eocene)
- Kcu - Sandstone, mudstone, and conglomerate (Cretaceous)
- sp - Serpentinite (Jurassic?)



Geologic Map

04-SCL-152 **PM 16.2-19.5**
EA 04-2A4400 **November 6, 2008**

U.S. Geological Survey Open-File Report 97-710
 Geology of the Southernmost Part of Santa Clara
 County, California: A Digital Database
 By R. W. Graymer
 1997



U.S. Geological Survey and California Geological Survey, 2006, Quaternary fault and fold database for the United States, 12/01/2008, from USGS web site: <http://earthquakes.usgs.gov/regional/qfaults/>
 Base map from Google Earth 2008



Regional Fault Map

04-SCL-152

PM 16.2-19.5

EA 04-2A4400

December 2008

DATE	COUNTY	ROUTE	TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE

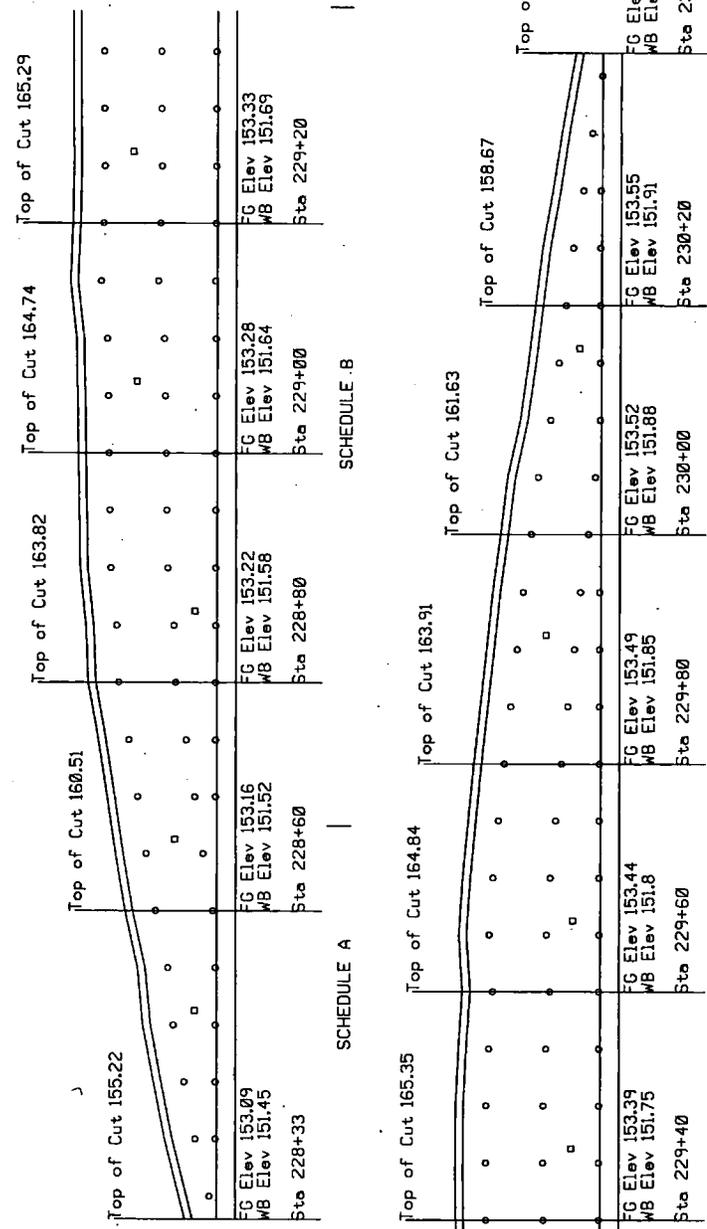
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 SAN FRANCISCO OFFICE

- SOIL NAIL ASSEMBLY
- PROOF TEST NAIL

SCHEDULE A	
NO. OF SOIL NAIL ROWS	2
ROW NO. TOP TO BOTTOM	1 2
EMBEDMENT LENGTH (FT)	10 10

SCHEDULE B	
NO. OF SOIL NAIL ROWS	3
ROW NO. TOP TO BOTTOM	1 2 3
EMBEDMENT LENGTH (FT)	15 14 12



SCHEDULE A

SCHEDULE B

BORDER LAST REVISED 4/11/2008

RELATIVE NUMBER SCALE
 15' IN INCHES

CU 00000

EA 000000

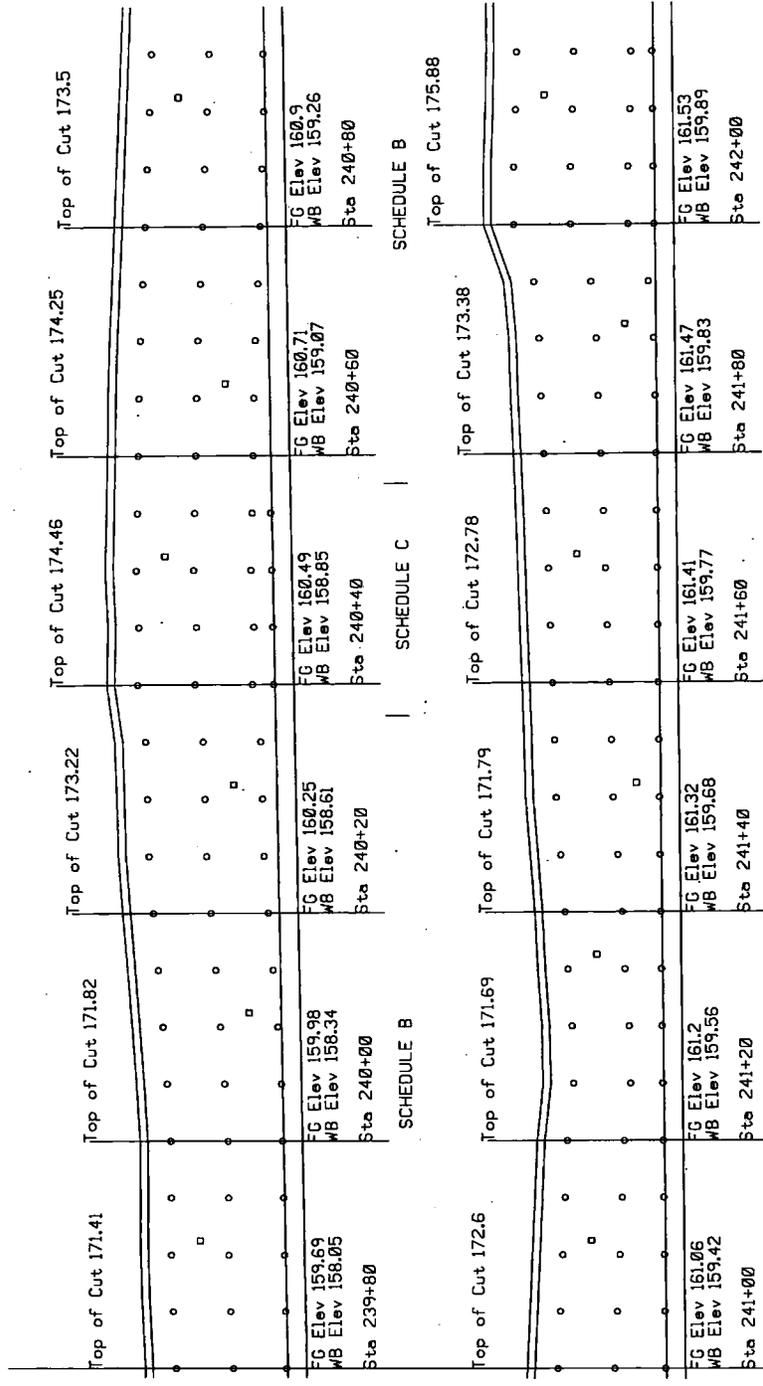
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CHECKED BY	DATE REVISED
		DESIGNED BY	REVISOR BY

DATE	COUNTY	ROUTE	TOTAL SHEETS	NO. SHEETS

REGISTERED CIVIL ENGINEER	DATE

PLANS APPROVAL	DATE

THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 THE ACCURACY OF THE INFORMATION CONTAINED HEREIN IS THE RESPONSIBILITY OF THE ENGINEER.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	CHECKED BY	DATE REVISED

REVISIONS	NO.	DATE	BY

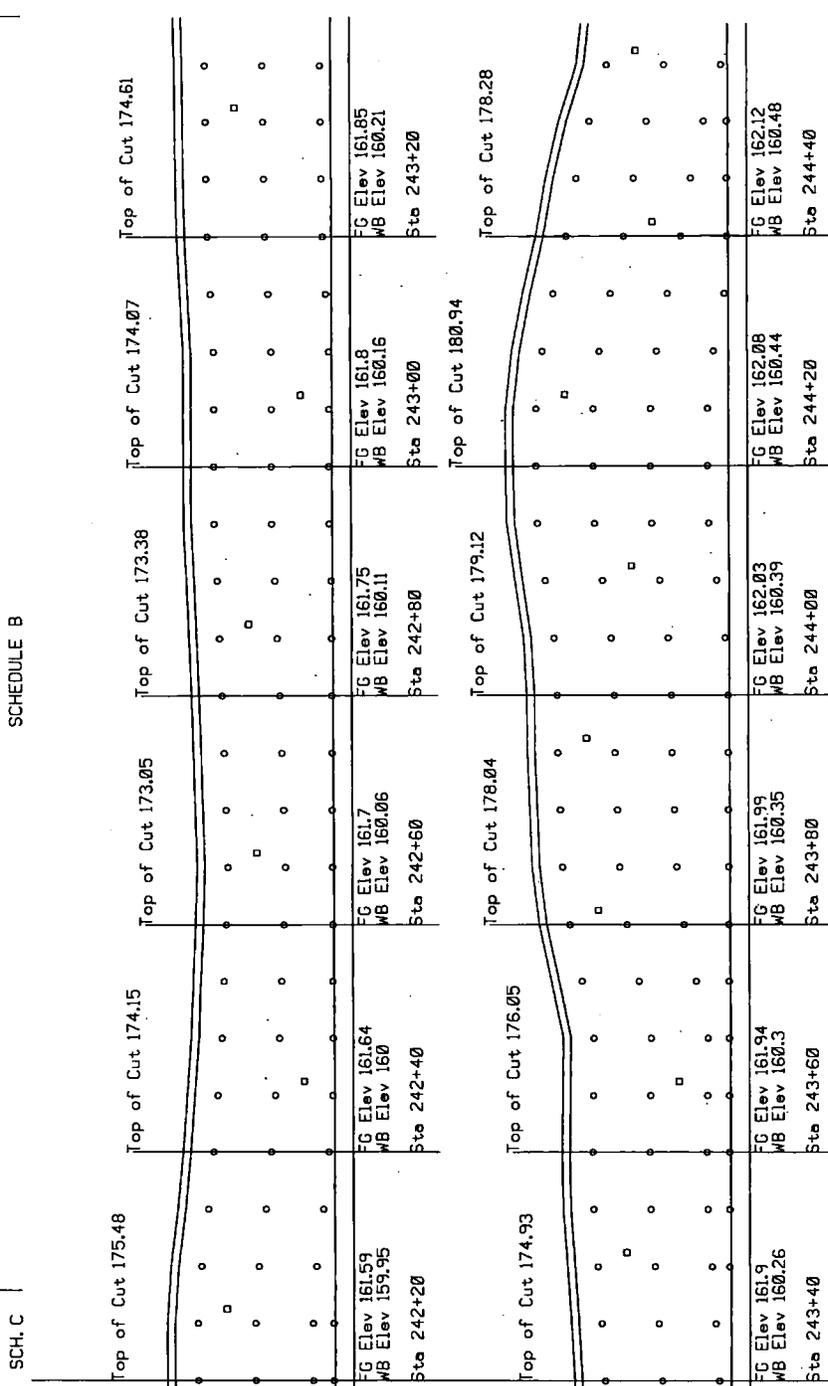
DIST	COUNTY	ROUTE	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE

PLANS APPROVAL DATE	

FOR THE STATE OF CALIFORNIA
 I HEREBY CERTIFY THAT THE ABOVE IS A TRUE AND CORRECT COPY OF THE ORIGINAL AS SUBMITTED TO THE BOARD OF CIVIL ENGINEERS OF THE STATE OF CALIFORNIA.

SCHEDULE B



SCHEDULE C

SCH. B

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	DATE REVISION

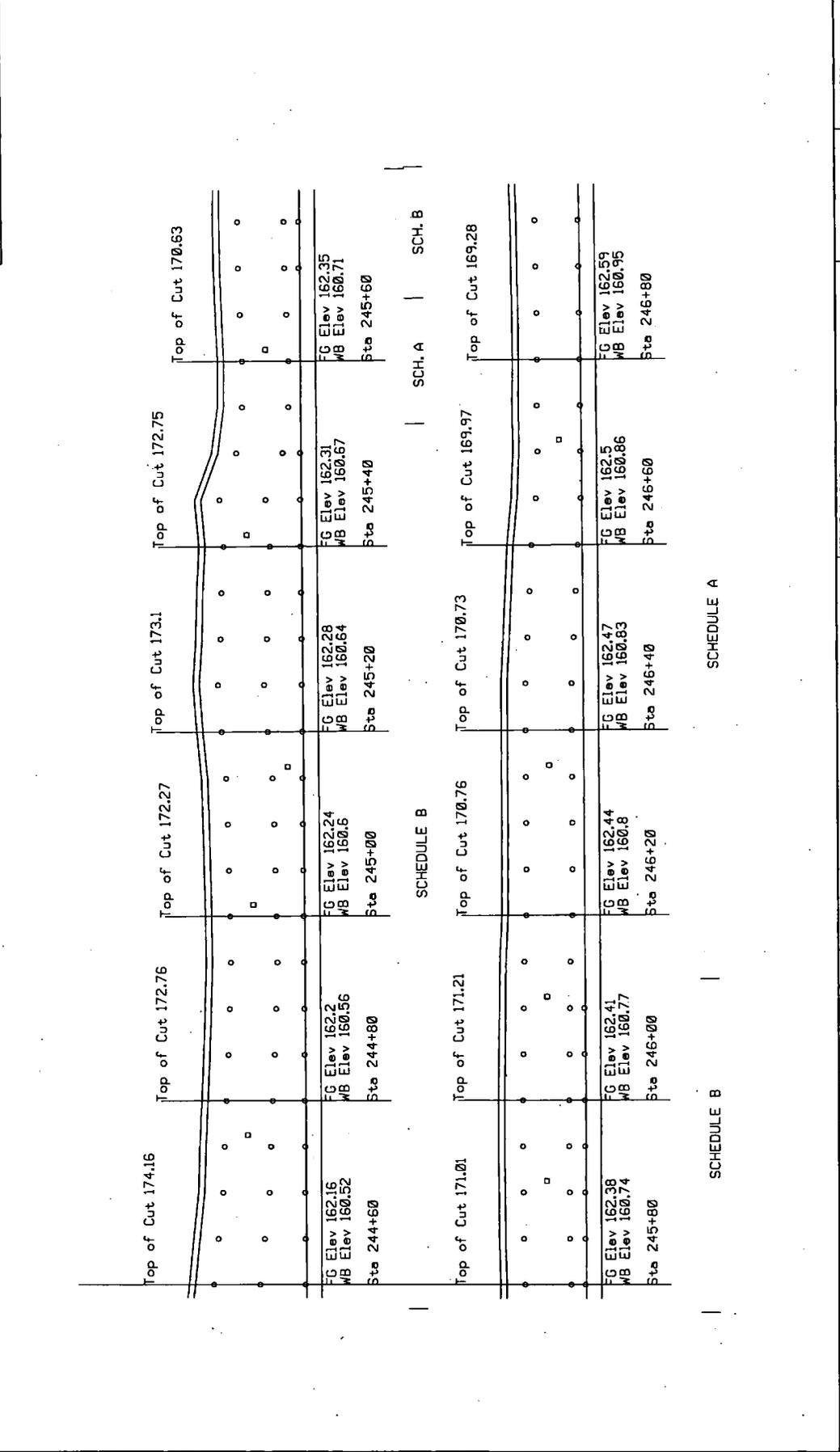
CHECKED BY	DATE REVISION

REVISIONS	DATE	BY

Dist	County	Route	Project	Sheet	of	Total

REGISTERED CIVIL ENGINEER	DATE
PLANE APPROVAL DATE	

THE STATE OF CALIFORNIA, BY ITS OFFICERS OF PUBLIC WORKS, HAS CAUSED THESE PLANS TO BE DRAWN BY THIS FIRM IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 5 OF TITLE 9 OF THE PUBLIC WORKS CODE.



DESIGNED BY	CHECKED BY	DATE REVISED
FUNCTIONAL SUPERVISOR		

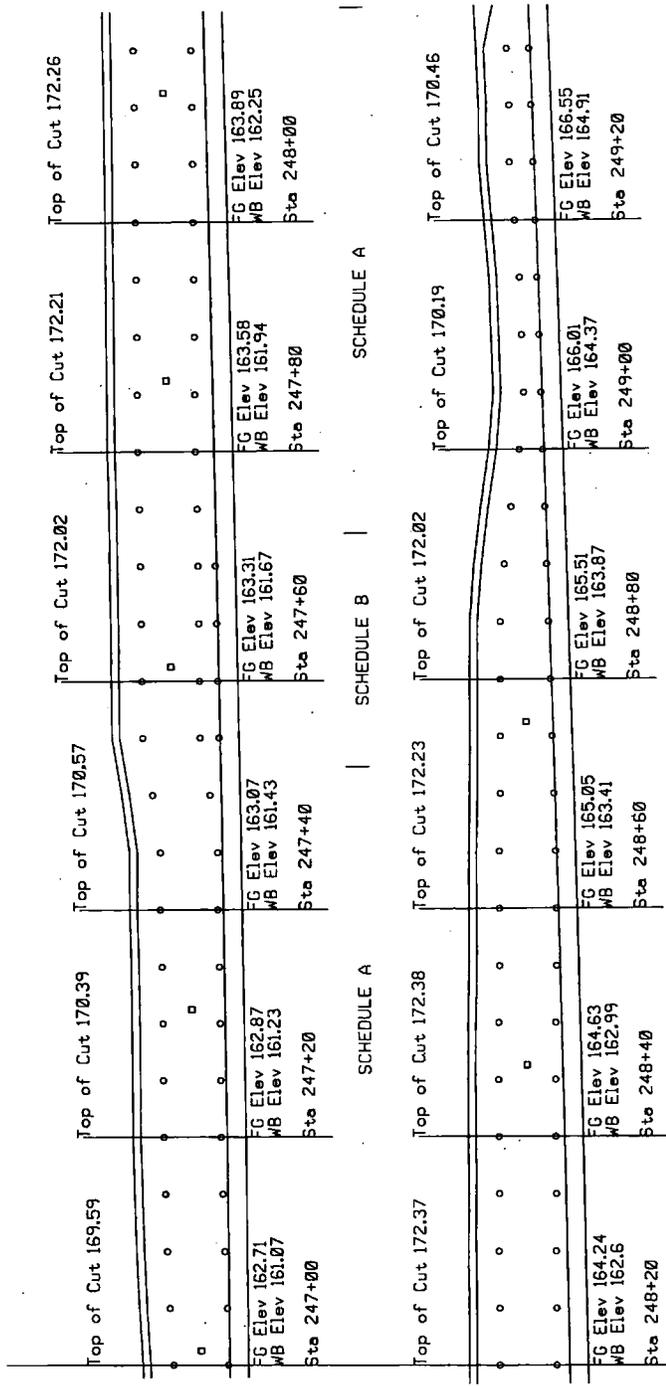
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USER: P9138RT1	TIME PLOTTED: 4-28-04-2010

DIST	COUNTY	ROUTE	PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER DATE

PLANE APPROVAL DATE

THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 THE AUTHORITY OF THE STATE ENGINEER
 I HEREBY APPROVE THE ACCURACY OF THE INFORMATION CONTAINED ON THIS PLAN SHEET.



SCHEDULE A

EA 000000

CU 000000

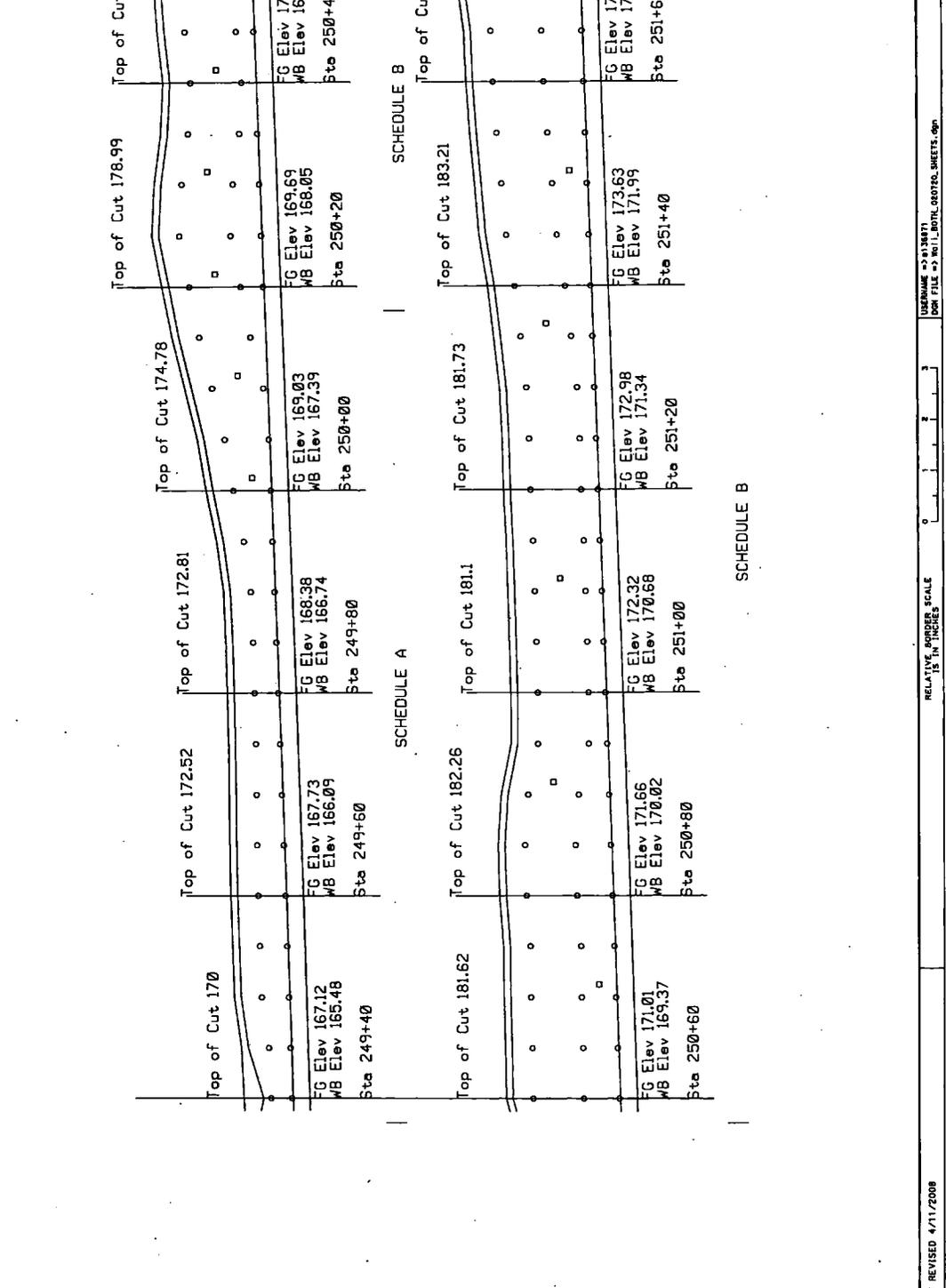
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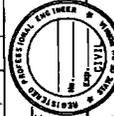
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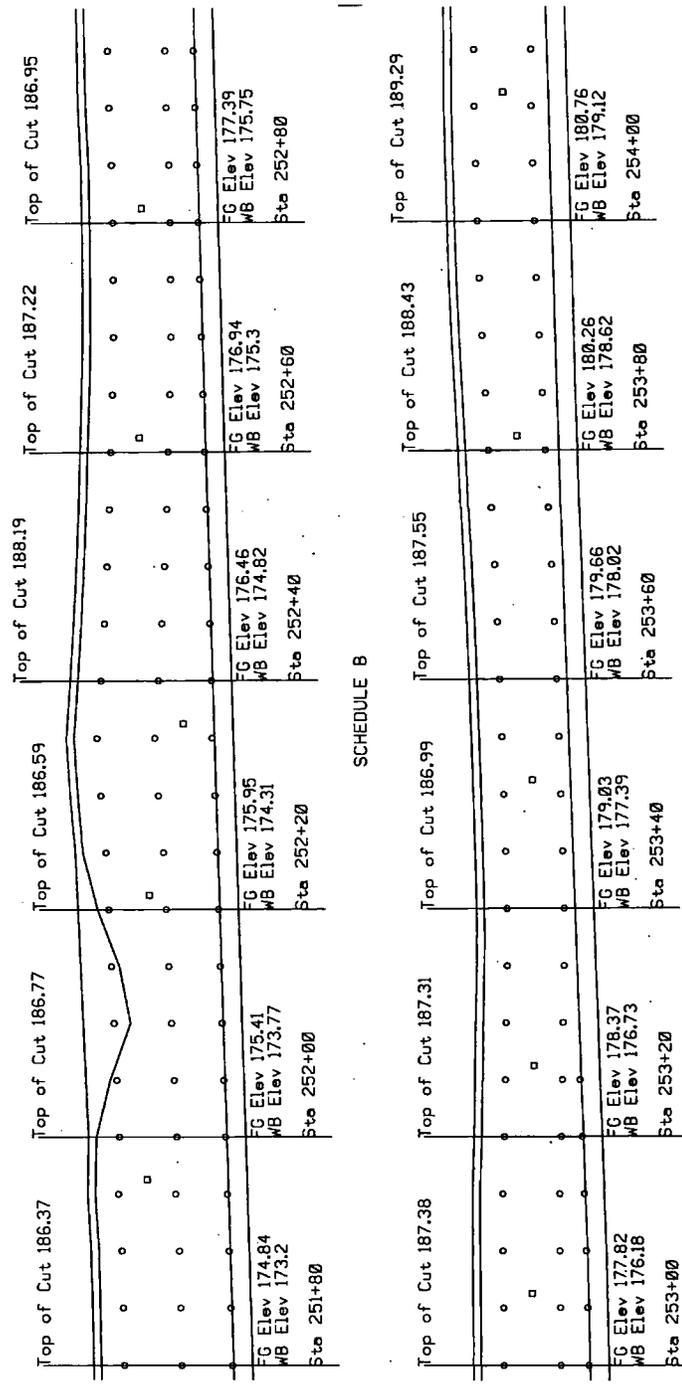


PROJECT TOTAL SHEET NO. SHEETS
 COUNTY ROUTE PROJECT TOTAL PROJECT SHEETS
 REGISTERED CIVIL ENGINEER DATE REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF CALIFORNIA
 PLANS APPROVAL DATE REGISTERED CIVIL ENGINEER
 THE ABOVE SIGNATURES ARE VALID FOR THE PROJECT ONLY AND ARE NOT VALID FOR ANY OTHER PROJECTS OR SCALES.

DATE PLOTTED => 28-JUL-2010
 TIME PLOTTED => 08:51
 USER NAME => 0138971
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 EA 000000
 CUE 000000



Dist	County	Route	Post Miles	Sheet	Total
					
REGISTERED CIVIL ENGINEER			DATE		
PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICES OR AGENTS SHALL NOT BE RESPONSIBLE FOR CONSEQUENCES OF THIS PLAN SHEET.					

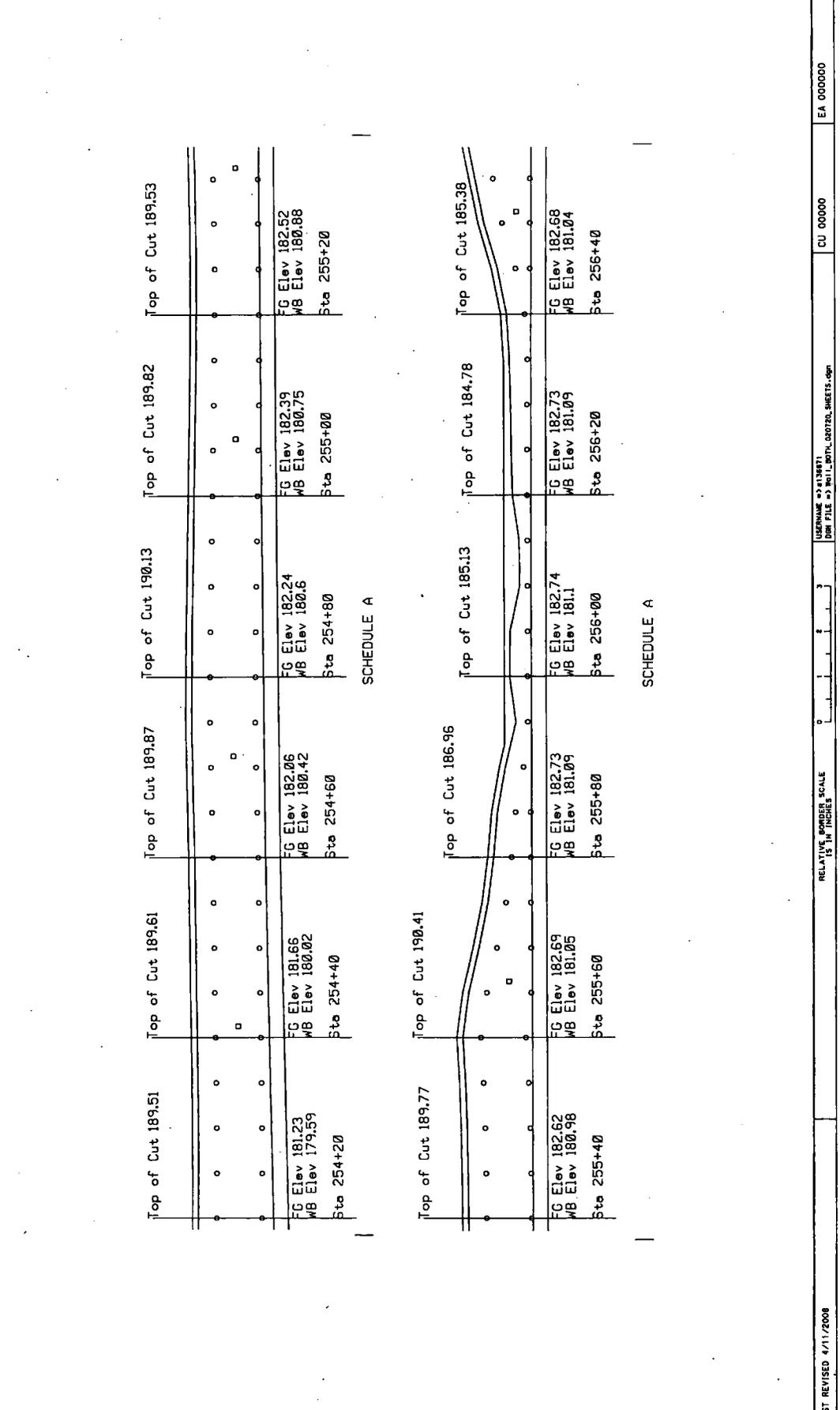


SCHEDULE B | SCHEDULE A

DESIGNED BY	DATE REVISION
CHECKED BY	
FUNCTIONAL SUPERVISOR	
DESIGNED BY	
DATE REVISION	

DIST	COUNTY	ROUTE	POST MILES	SHEET NO.	TOTAL SHEETS

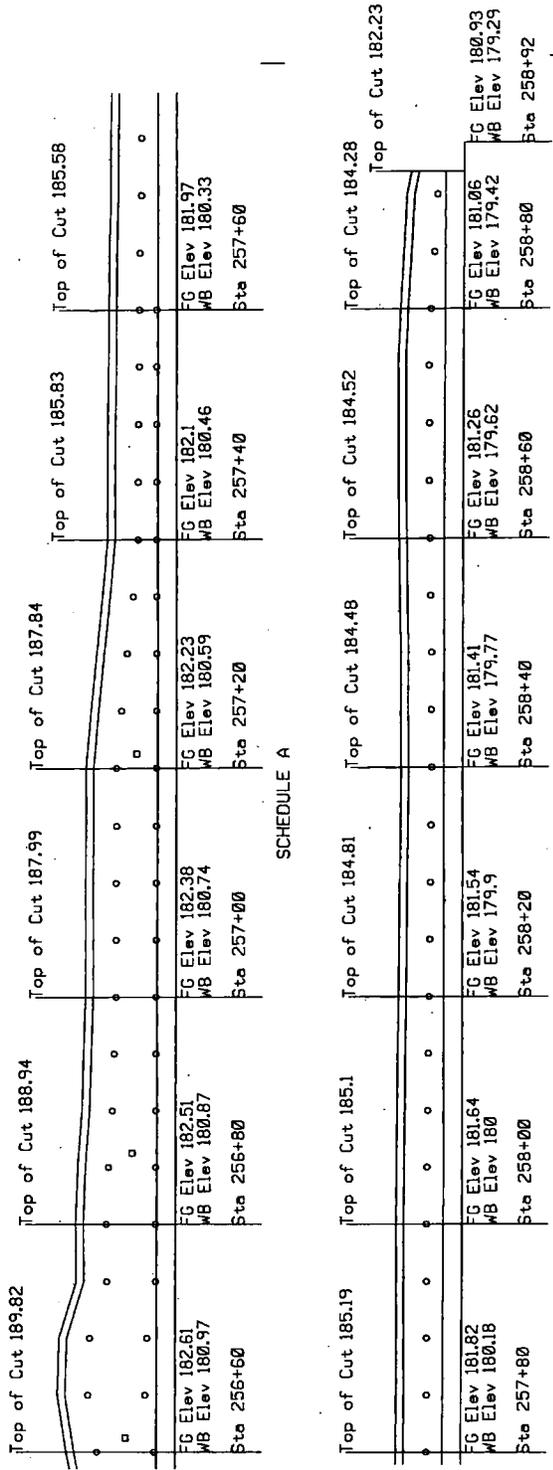
REGISTERED CIVIL ENGINEER DATE _____
 PLANS APPROVAL DATE _____
 THE STATE OF CALIFORNIA BE IT ORDERED THAT THESE PLANS BE APPROVED FOR THE PROJECT OF THIS PLAN SHEET.



DATE	COUNTY	ROUTE	POST MILES	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER	DATE
PLEASE APPROVAL DATE	

I HEREBY APPROVE OF THE OFFICE OF PUBLIC WORKS AND HIGHWAYS OF THE STATE OF CALIFORNIA IN THE MATTER OF THE PROJECT OF THE ROADWAY AND BRIDGE OVER THE RIVER AT STA 256+00 TO STA 258+00.



SCHEDULE A

SCHEDULE A

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISION BY	DATE REVISION
EA 000000	CU 00000	EA 000000	CU 00000	EA 000000

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. DAVID SALLADAY
District Office Chief
Design South, SHOPP Safety

Date: November 4, 2010

Attention: M. Azimi
A. Rahid

File: 04-SCL-152 PM 16.2/16.5
PM 18.5/19.5
04-2A4400
Efis: 0400000823-0
Retaining Wall No. 3

From: ^{Ah} A. KADDOURA/M. ZABOLZADEH
Associate Materials & Research Engineers
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

^{H. Nikoui} HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject: Foundation Report for the Proposed Retaining Wall #3

1. INTRODUCTION

This memorandum provides our foundation recommendation for the proposed new Retaining Wall #3 for the above referenced project. This retaining wall is proposed to be a standard either Type 1 or Type 5 retaining wall.

Retaining Wall # 3 is being proposed to accommodate for the proposed widening and realignment of Route 152 to contain the fill and for constructing a private access road for a private property at Lovers Lane. We believe standard Type 1 or 5 retaining wall would be the most feasible and economical alternative.

2. SCOPE OF WORK

The scope of our foundation investigation included:

- Field mapping, reviewing existing reports and information available on site, geology, seismicity and subsurface soil/rock conditions.
- Subsurface investigation using exploratory boring and a laboratory-testing program.

MR. DAVID SALLADAY
Attn: Azimi/Rahid
November 4, 2010
Page 2

3. REGIONAL AND SITE GEOLOGIC SETTING

Located within the Coast Range geomorphic province of California, the geology of the region consists of northwest-trending ridges, gently sloping hills, intermontane valleys, and large elongated depressions. The San Andreas Fault system, the most prominent geologic feature in the area, includes the San Andreas Fault as well as numerous splays, including the Hayward and Calaveras Faults, which together take up strain between the northward migrating Pacific plate and the southward (relatively) moving North American plate. The major faults within the system are predominantly right-lateral, strike-slip faults with some compressional component, and these act together to form the prominent ridges and valleys. The San Francisco Bay, a partially filled northwest-trending depression extending from the Santa Clara Valley in the south to the Petaluma Valley in the north, is a direct result of these fault interactions.

Site geology is based on the mapping of Graymer, 1997, and Logs of Test Borings recovered during a geotechnical investigation within the project limits in 2001.

The oldest rocks within the project limits are unnamed Cretaceous sandstone, mudstone, and conglomerates. Within the exposure of the Packwood Gravels is the Calaveras Fault, an active right-lateral strike slip fault that comprises part of the larger San Andreas Fault system. This fault juxtaposes slivers of Jurassic Serpentine against the Packwood Gravels within a drainage north of the alignment. The serpentine is limited to exposures north of the roadway and will not impact the project.

SR 152 within the project limits traverses roughly perpendicular to the strike of the major geologic units. Where the alignment crosses drainages, alluvial fan or stream deposits underlie the roadway, otherwise the roadbed is constructed on shallow cuts in bedrock.

4. FAULT AND SEISMIC DATA

The southern end of the Calaveras Fault crosses the western extent of the project. The fault is best expressed by a series of linear ridges and valleys northwest of San Felipe Lake, as well as the lake itself. Other faults affecting the project include the Sargent and San Andreas Faults to the west and the Quien Sabe Fault to the south (see Regional Fault Map herein). The project would be exposed to significant seismic hazards during a strong event including fault rupture, strong ground shaking, subsidence, and liquefaction. These are described in greater detail in Section 7.3. The following Table 1 lists the nearest

MR. DAVID SALLADAY
Attn: Azimi/Rahid
November 4, 2010
Page 3

faults, their maximum magnitude, and peak ground accelerations during maximum events.

Table 1

FAULT	Distance from project	Maximum Credible Earthquake	Peak Ground Acceleration
Calaveras	0 mi	7.5	0.70g
San Andreas	9.3 mi	8.0	0.45g
Quien Sabe	2.5 mi	6.25	0.45 g
Sargent	6.2 mi	6.75	0.32g

Refer to the attached Regional Fault Map for Details.

5. FOUNDATION SOIL AND GROUNDWATER

The Office of Geotechnical Design – West, a Division of Engineering Services, investigated the subsurface conditions (August 2010) at the site. The foundation investigations consisted of drilling one power boring (A-10-02 to the depth of 15 ft below roadway surface of the private property) using Hollow Stem Auger drilling method within the project limits to the depth of 15 ft below roadway surface. Soil was sampled every 5 feet using a Standard Penetration Test (SPT) sampling. The unconfined compressive strength of the clayey soil (using a pocket penetrometer) was estimated to range between 0.5 tsf and 3.0 tsf. The SPT blow count values ranged from 2 blows per foot to 12 blows per foot.

Groundwater was encountered in boring A-10-002 at 10 ft below roadway surface during drilling (MSL 150)

LOTB sheets will be furnished to you upon completion.

6. RECOMMENDATIONS

The approximate limits, lengths, and maximum heights of the wall #3 are listed in Table 2 below.

MR. DAVID SALLADAY
Attn: Azimi/Rahid
November 4, 2010
Page 4

Table 2

Retaining Wall No.	Approximate Wall Limits	Length (ft)	Maximum Height (ft)
RW #3	"L" Sta. 248+74± to Sta. 249+10±	36	10±

Based on the soil information from power borings A-10-002, the allowable bearing capacity of the foundation soils, using a factor of safety of 3 is estimated to be 1.8 ksf for Wall # 3. This is below the required toe pressures of 2.5 ksf specified in the Standard Plans for Type 1 Retaining Wall (Case I loading) and 3.0 ksf for Type 5 Retaining Wall having a maximum height of 10 feet. We recommend using either Caltrans Standard Plans Type 1 or Type 5 Standard Retaining Wall on spread footing foundation with loading Condition Case I with the following provisions.

To ensure the required bearing capacity we recommend the following:

- Sub-excavate 2.5 feet below the planned bottom of the proposed retaining wall footing and 1 foot to each side.
- Place subgrade enhancement geotextile at the bottom of the sub-excavated area. Specification for the proposed subgrade geotextile fabric is attached.
- Backfill the sub-excavated area with structural backfill or Class 3 aggregate base and compact to 95% relative compaction.

Based on the above recommended foundation treatment, the allowable bearing capacity is estimated to be about 3.5 ksf using a factor of safety of 3.

8. SETTLEMENT

Based on boring A-10-002 for the proposed 10 ft of fill, the estimated 90% primary settlement is calculated to be 0.58 inches. The estimated 90% primary settlement under the wall is calculated to be 0.46 inches, which is within wall tolerance.

MR. DAVID SALLADAY
Attn: Azimi/Rahid
November 4, 2010
Page 5

9. CORROSION

Corrosion studies are conducted in accordance with the requirements of California Test Method No. 643.

The Department Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on the laboratory test results on the soil samples from borings taken in the vicinity of Soil Nail #2 near this retaining wall, the site appears to be non-corrosive

10. DISCLAIMER

The recommendations contained in this report are based on specific project information regarding structure type, location, and design loads that have been provided by the Office of West. If any conceptual changes are made during final project design, the Office of Geotechnical Design-West, Branch A should review those changes to determine if these foundation recommendations are still applicable.

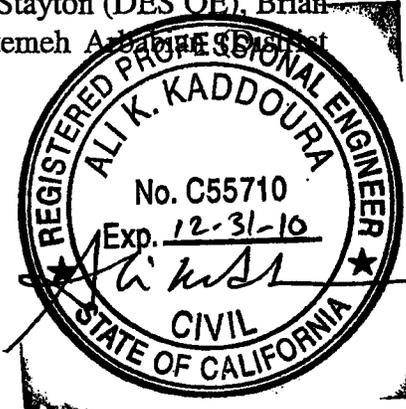
* * * * *

Any questions regarding the above recommendations should be directed to the attention of Ali Kaddoura/Mohammad Zabolzadeh at 510-286-4676/4831 or Hooshmand Nikoui at 510-286-4811, at the Office of Geotechnical Design-West, Branch A.

Attachments:

- c: TPokrywka, HNikoui, MZabolzadeh, AKaddoura - (GS west), Mark Willian (GS Corporate), RE pending File (Structure Construction), John Stayton (DES OE), Brian Kearney (District ME), Fariba Zohoury (District PM), Fatemeh Arabi (District PE), Ahmed Rahid (District PE)

Zabolzadeh-Kaddoura/mm/2A4400 Ret Wall #3



Memorandum

*Flex your power!
Be energy efficient!*

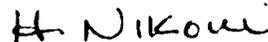
To: MR. DAVID SALLADAY
District Office Chief
Design South, SHOPP Safety

Date: March 30, 2011

Attention: M. Azimi
A. Rahid

File: 04-SCL-152 PM 16.2/16.5
PM 18.5/19.5
Efis: 040000 0823 1
04-2A4401
Retaining Wall No. 4

From:  A. KADDOURA/M. ZABOLZADEH
Associate Materials & Research Engineers
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services


HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Foundation Report for the Proposed Retaining Wall #4-Gabion Gravity Retaining Wall

1. INTRODUCTION

This memorandum provides our foundation recommendation for the proposed new Retaining Wall #4 for the above referenced project. This retaining wall is proposed to be either a Caltrans Standard Type 5 retaining wall or Standard Gabion Basket Wall.

Retaining Wall# 4 is being proposed to accommodate the proposed widening and realignment of Route 152 to contain the fill. We believe standard Gabion retaining wall would be the most feasible and economical alternative than Type 5 retaining wall.

2. SCOPE OF WORK

The scope of our foundation investigation included:

- Field mapping, reviewing existing reports and information available on site, geology, seismicity and subsurface soil/rock conditions.
- Subsurface investigation using exploratory boring and a laboratory-testing program.

MR. DAVID SALLADAY

Attn: M. Azimi/A. Rahid

March 30, 2011

Page 2

3. REGIONAL AND SITE GEOLOGIC SETTING

Located within the Coast Range geomorphic province of California, the geology of the region consists of northwest-trending ridges, gently sloping hills, intermontane valleys, and large elongated depressions. The San Andreas Fault system, the most prominent geologic feature in the area, includes the San Andreas Fault as well as numerous splays, including the Hayward and Calaveras Faults, which together take up strain between the northward migrating Pacific plate and the southward (relatively) moving North American plate. The major faults within the system are predominantly right-lateral, strike-slip faults with some compressional component, and these act together to form the prominent ridges and valleys. The San Francisco Bay, a partially filled northwest-trending depression extending from the Santa Clara Valley in the south to the Petaluma Valley in the north, is a direct result of these fault interactions.

Site geology is based on the mapping of Graymer, 1997, and Logs of Test Borings recovered during a geotechnical investigation within the project limits in 2001.

The oldest rocks within the project limits are unnamed Cretaceous sandstone, mudstone, and conglomerates. Within the exposure of the Packwood Gravels is the Calaveras Fault, an active right-lateral strike slip fault that comprises part of the larger San Andreas Fault system. This fault juxtaposes slivers of Jurassic Serpentine against the Packwood Gravels within a drainage north of the alignment. The serpentine is limited to exposures north of the roadway and will not impact the project.

SR 152 within the project limits traverses roughly perpendicular to the strike of the major geologic units. Where the alignment crosses drainages, alluvial fan or stream deposits underlie the roadway, otherwise the roadbed is constructed on shallow cuts in bedrock.

4. FAULT AND SEISMIC DATA

The southern end of the Calaveras Fault crosses the western extent of the project. The fault is best expressed by a series of linear ridges and valleys northwest of San Felipe Lake, as well as the lake itself. Other faults affecting the project include the Sargent and San Andreas Faults to the west and the Quien Sabe Fault to the south (see Regional Fault Map herein). The project would be exposed to significant seismic hazards during a strong event including fault rupture, strong ground shaking, subsidence, and liquefaction. These are described in greater detail in Section 7.3. The following Table 1 lists the nearest faults, their maximum magnitude, and peak ground accelerations during maximum events.

MR. DAVID SALLADAY
 Attn: M. Azimi/A. Rahid
 March 30, 2011
 Page 3

Table 1

FAULT	Distance from project	Maximum Credible Earthquake	Peak Ground Acceleration
Calaveras	0 mi	7.5	0.70g
San Andreas	9.3 mi	8.0	0.45g
Quien Sabe	2.5 mi	6.25	0.45 g
Sargent	6.2 mi	6.75	0.32g

Refer to the attached Regional Fault Map for Details.

5. FOUNDATION SOIL AND GROUNDWATER

The Office of Geotechnical Design – West, a Division of Engineering Services, investigated the subsurface conditions (March 2011) at the site. The foundation investigations consisted of drilling two power boring (A-11-03 and A-11-04) to the depth of 20 ft below roadway surface using Hollow Stem Auger drilling. Soil was sampled every 5 feet using a Standard Penetration Test (SPT) sampling. The unconfined compressive strength of the clayey soil (using a pocket penetrometer) was estimated to range between 0.25 tsf and 3.0 tsf. The SPT blow count values ranged from 2 blows per foot to 33 blows per foot.

Groundwater was encountered in borings A-11-03 and A-11-04 at 12 ft and 15 ft, respectively below roadway surface during drilling (MSL 151.5 and 151).

LOTB sheets will be furnished to you upon completion.

6. RECOMMENDATIONS

The approximate limits, lengths, and maximum heights of the wall #4 are listed in Table 2 below.

Table 2

Retaining Wall No.	Approximate Wall Limits	Length (ft)	Maximum Height (ft)
RW #4	"L" Sta. 241+00± to Sta. 248+10±	710	10±

We recommend the following alternatives for the proposed wall No 4:

MR. DAVID SALLADAY
Attn: M. Azimi/A. Rahid
March 30, 2011
Page 4

Alternative 1 – Gabion Gravity Wall (Preferred Alternative)

A standard gabion basket retaining wall will be constructed from Station 241+00 to Station 248+10 along the south side of Highway 152. The maximum wall height will be 12 ft (with 2 ft embedment into original ground as shown on the attached Exhibit) and it will be tapered at both ends. Gabion Retaining structures are rectangular wire mesh baskets filled with rock at the project site to form flexible, permeable, monolithic retaining wall. Gabions baskets are 3 ft wide 6 ft to 12 ft long x 1 ft to 3 ft high. (Refer to Standard Plans D100A and D100B for details).

Based on the available soil information from borings A-11-03 and A-11-04, the allowable bearing capacity of the foundation soils, using a factor of safety of 3 is estimated to be 4.0 ksf for Wall # 4. This exceeds the required toe pressure of 3.0 ksf for the proposed Gabion wall. This is based on the Gabion wall width of 7.5 ft and the bottom gabion baskets will be embedded a minimum of 2 feet below original ground along the entire length of the wall to protect against scour. We recommend using Gabion basket gravity wall. A typical section is attached.

Gabion Wall Manufacturer's specifications should be followed in constructing this wall in addition to the Caltrans Standard Plans Sheets D100A and D100B guidelines.

This is our preferred alternative because of the wall's tolerance to differential settlement. Refer to Section 8 for settlement information.

Alternative 2 – Standard Type 5 Retaining Wall

Based on the soil information from power borings A-11-03 and A-11-04, the allowable bearing capacity of the foundation soils, using a factor of safety of 3 is estimated to be 2.0 ksf for Wall # 4. This is below the required toe pressure of 3.9 ksf for Type 5 Retaining Wall having a maximum height of 10 feet (Case III loading). We recommend using Caltrans Standard Type 5 Standard Retaining Wall on spread footing foundation with loading Condition Case III with the following provisions.

To ensure the required bearing capacity we recommend the following:

- Sub-excavate 3.0 feet below the planned bottom of the proposed retaining wall footing and 1 foot to each side.
- Place subgrade enhancement geotextile at the bottom of the sub-excavated area. Specification for the proposed subgrade geotextile fabric is attached.

MR. DAVID SALLADAY
Attn: M. Azimi/A. Rahid
March 30, 2011
Page 5

- Backfill the sub-excavated area with structural backfill or Class 3 aggregate base and compact to 95% relative compaction.

Based on the above recommended foundation treatment, the allowable bearing capacity is estimated to be about 4 ksf using a factor of safety of 3.

8. SETTLEMENT

Based on borings A-11-03 and A-11-04 for the proposed 10 ft of fill, the estimated 90% primary settlement is calculated to range between 0.0 and 1.65 inches. The estimated differential settlement under the proposed wall is calculated to be as high as 1 inch.

9. CORROSION

Corrosion studies are conducted in accordance with the requirements of California Test Method No. 643.

The Department Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist: Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on the laboratory test results on the soil samples from borings taken in the vicinity of Soil Nail #2 near this retaining wall, the site appears to be non-corrosive

10. DISCLAIMER

The recommendations contained in this report are based on specific project information regarding structure type, location, and design loads that have been provided by the Office of West. If any conceptual changes are made during final project design, the Office of Geotechnical Design-West, Branch A should review those changes to determine if these foundation recommendations are still applicable.

* * * * *

MR. DAVID SALLADAY

Attn: M. Azimi/A. Rahid

March 30, 2011

Page 6

Any questions regarding the above recommendations should be directed to the attention of Ali Kaddoura/Mohammad Zabolzadeh at 510-286-4676/4831 or Hooshmand Nikoui at 510-286-4811, at the Office of Geotechnical Design-West, Branch A.

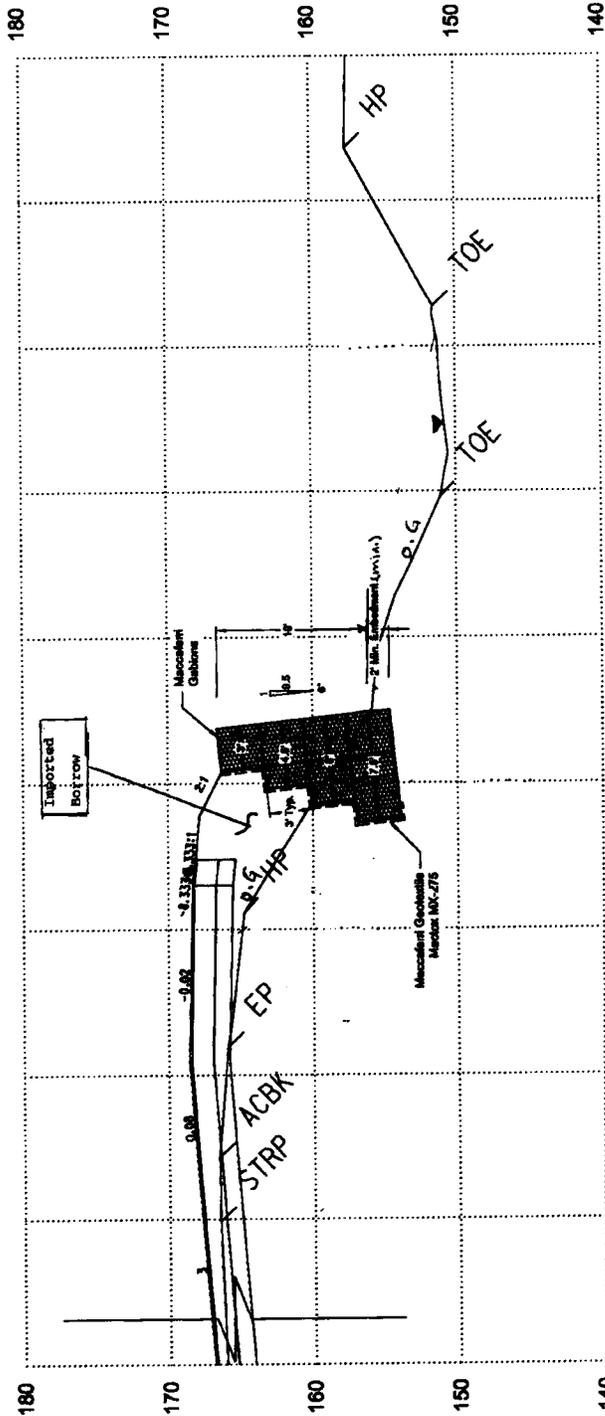
Attachments:

c: TPokrywka, HNikoui, MZabolzadeh, AKaddoura - (GS west), Mark Willian (GS Corporate), RE pending File (Structure Construction), John Stayton (DES OE), Brian Kearney (District ME), Fariba Zohoury (District PM), MAzimi (District Senior) Ahmed Rahid (District PE)

Kaddoura/mm/2A4400 Ret Wall #4 Gabion Report



SECTION VIEW



TYPICAL CROSS SECTION
Maccaferri Gabion Wall

- NOTES:**
- All Dimensions in ft unless otherwise specified.
 - Maccaferri Gabions to ASTM A976.
 - Gabions used shall be Zinc/PVC Coated.
 - Compaction:
 - Backfill and Foundation Soil shall be compacted to minimum 90% of modified proctor density (ASTM D1557) at moisture content of 2.2% of OMC.
 - Gabion Fill to ASTM D871:
 - Rock Size: 4" to 8", D50 = 6"
 - Rock Unit Weight: 160 pcf min.
 - Void: 30% max.
 - Soil:
 - Soil: 0g
 - Soil Acceleration: 250g
 - This is typical design and is valid only for the stated soil parameters. Any variation from the stated design parameters renders the design void and will require a new design.
 - It is the responsibility of the Owner or the Owner's Representative to verify the soil parameters and Foundation Bearing Capacity prior to construction.

MACCAFERRI
Maccaferri, Inc.
10000 Governor Lane Blvd.
Williamsport, MD 21790-5119 USA
Ph. (301) 222-9610 Fax (301) 222-9134

Drawing Title: Typical Cross Section Gabion Retaining Wall Client:		Designer: SM Date: 02/24/11	Project: GABION RETAINING WALL FOR SCL-152
Project No: USA2011-XXXX Drawing No: 1/1	Scale: NTS Feet: 1/1	Designer: SG Date: 02/24/11	NOT FOR CONSTRUCTION
Issue / Revision:	Date:	Checked: SM Date: 02/24/11	

Maccaferri Inc. assumes no responsibility for the drawings and calculations it provides, as they must be reviewed as a general indication to suggest the proper use of its products.

Rev: _____ Date: _____
 Drawn: _____ Date: _____
 Checked: _____ Date: _____

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. DAVID SALLADAY
District Office Chief
Design South, SHOPP Safety

Date: November 8, 2011

Attention: M. Azimi
A. Rahid

File: 04-SCL-152 PM 16.2/16.5
PM 18.5/19.5
Efis: 040000 0823 1
04-2A4401
Box Culvert Extension

From: ^{AK} A. KADDOURA/ M. ZABOLZADEH
Associate Materials & Research Engineers
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

^{H. Nikou} HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Existing Reinforced Box Culvert (RCB) Extension

1. INTRODUCTION

This memorandum provides our foundation recommendation for the proposed extension of the existing 4 ft x3 ft RCB near "L" Station 262+50. The RCB is located approximately 1200 ft east of Lovers Lane and crosses under Route 152 (Pacheco Pass) in the incorporated area of the Town of Gilroy in Santa Clara County.

The extension of the existing RCB is being proposed to accommodate the proposed widening and realignment of Route 152.

2. SCOPE OF WORK

The scope of our foundation investigation included:

- Field mapping,
- Reviewing existing reports and information available on site,
- Geology, and subsurface soil/rock conditions.

3. FOUNDATION SOIL AND GROUNDWATER

No subsurface investigation was performed at the site due to time constraints. However, we used the subsurface soil information from boring A-10-02 that was drilled for retaining wall #3 to the depth of 15 ft below private property roadway surface.

MR. DAVID SALLADAY

Attn: Azimi/Rahid

November 8, 2011

Page 2

Groundwater was encountered in boring A-10-002 at 10 ft below roadway surface during drilling (MSL 150)

Refer to the LOTB sheets for retaining wall No. 3 for more details.

4. RECOMMENDATIONS

Based on the soil information from power borings A-10-002, the allowable bearing capacity of the foundation soils, using a factor of safety of 3 is estimated to be 1.8 ksf.

To ensure the required bearing capacity below the RCB foundation, we recommend the following:

- Sub-excavate 2.0 feet below the planned bottom of the proposed culvert footing and 1 foot to each side.
- Place subgrade enhancement geotextile at the bottom of the sub-excavated area. Specification for the proposed subgrade geotextile fabric is attached.
- Backfill the sub-excavated area with structural backfill or Class 3 Aggregate Base (AB 3) and compact to 95% relative compaction.

Based on the above recommended foundation treatment, the allowable bearing capacity is estimated to be about 3.5 ksf using a factor of safety of 3.

5. CORROSION

Corrosion studies are conducted in accordance with the requirements of California Test Method No. 643.

The Department Caltrans currently considers a site to be corrosive to foundation elements if one or more of the following conditions exist:

Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on the laboratory test results on the soil samples from borings taken in the vicinity of Soil Nail #2 near the box culvert, the site appears to be non-corrosive

* * * * *

MR. DAVID SALLADAY

Attn: Azimi/Rahid

November 8, 2011

Page 3

Any questions regarding the above recommendations should be directed to the attention of Ali Kaddoura/Mohammad Zabolzadeh at 510-286-4676/4831 or Hooshmand Nikoui at 510-286-4811, at the Office of Geotechnical Design-West, Branch A.

Attachments:

c: TPokrywka, HNikoui, MZabolzadeh, AKaddoura - (GS west), Mark Willian (GS Corporate), RE pending File (Structure Construction), John Stayton (DES OE), Brian Kearney (District ME), Fariba Zohoury (District PM), MAzimi (District Senior) Ahmed Rahid (District PE)

Zabolzadeh-Kaddoura/mm/2A4401 Box Culvert Extension Report

