

**SUPPLEMENTAL INFORMATION HANDOUT**  
**MATERIALS INFORMATION**

1. RWQCB 401 Permit, dated January 8, 2014
2. National Marine Fishery Service Letter re: Endangered Species, dated February 24, 2014

**AVAILABLE AS SPECIFIED IN THE STANDARD  
SPECIFICATIONS**

1. Foundation Report (FR) for the Proposed Steel Soldier Pile Wall, dated August 21, 2013

**ROUTE: 04-SCI-152 PM 0.0/5.2**

**Addendum No. 3 March XX, 2014.**



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## Central Coast Regional Water Quality Control Board

January 8, 2014

Fariba Zohoury  
California Department of Transportation  
111 Grand Avenue  
Oakland, CA 94612  
email: fariba\_zohoury@dot.ca.gov

**VIA ELECTRONIC MAIL**

Dear Fariba Zohoury:

**TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION NUMBER 34313WQ06 FOR HECKER PASS SAFETY IMPROVEMENT PROJECT EA 2A250, ORIGINALLY CERTIFIED UNDER TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION NUMBER 34313WQ01, SANTA CLARA COUNTY**

The Central Coast Regional Water Quality Control Board (Central Coast Water Board) issued Technically Conditioned Water Quality Certification No. 34313WQ01 for the Hecker Pass Safety Improvement Project EA 2A250 (Project) on May 24, 2013. Technically Conditioned Water Quality Certification No. 34313WQ01 expired on September 3, 2013, due to Caltrans' failure to meet specific conditions of the Certification. The Project, if implemented as described in your application and supplemental information, and with the additional mitigation requirements and conditions required by this Certification, appears to be protective of beneficial uses of State waters. Therefore, we are issuing the enclosed Technically Conditioned Water Quality Certification No. 34313WQ06, which replaces Technically Conditioned Water Quality Certification No. 34313WQ01.

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 Certification application and California Environmental Quality Act (CEQA) documents indicate that Project activities have the potential to 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 any time after, are required per Section 13267 of the California Water Code.

Failure to submit reports required by this Certification, or 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 Water Board) to review this action in accordance with California Water Code Section 13320; and Title 23, California Code of

JEFFREY S. YOUNG, CHAIR | KENNETH A. HARRIS JR., EXECUTIVE OFFICER

Regulations, Sections 2050 and 3867-3869. The State Water 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.

If you have questions please contact **Jon Rohrbough** at (805) 549-3458 or via email at [Jon.Rohrbough@waterboards.ca.gov](mailto:Jon.Rohrbough@waterboards.ca.gov), or Phil Hammer at (805) 549-3882. Please mention the above certification number in all future correspondence pertaining to this Project.

Sincerely,

for  
Kenneth A. Harris, Jr.  
Executive Officer

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

cc: With enclosures

Cyrus Vafai (Caltrans), [cyrus\\_vafai@dot.ca.gov](mailto:cyrus_vafai@dot.ca.gov)  
Holly Costa (USACE), [holly.n.costa@usace.army.mil](mailto:holly.n.costa@usace.army.mil)  
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Devon Striegel (CCRWQCB), [Devon.Striegel@waterboards.ca.gov](mailto:Devon.Striegel@waterboards.ca.gov)  
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Action on Request for  
Clean Water Act Section 401 Water Quality Certification  
for Discharge of Dredged and/or Fill Materials

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**PROJECT:** Hecker Pass Safety Improvement Project EA 2A250

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

**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) is conditioned upon total payment of the fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

**ADMINISTRATIVE CONDITIONS:**

1. 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.
2. 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.

3. 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.
4. In response to any violation of the conditions of this Certification, the Central Coast Water Board may add to or modify the conditions of this Certification as appropriate to ensure compliance.
5. The Central Coast Water Board reserves the right to suspend, cancel, or modify and reissue this Certification, after providing notice to the applicant, if the Central Coast Water Board determines that the Project fails to comply with any of the terms or conditions of this Certification.
6. A copy of this Certification, the application, and supporting documentation must be available at the Project site during construction for review by site personnel and agencies. A copy of this Certification must also be provided to the contractor and all subcontractors who will work at the Project site. All personnel performing work on the proposed Project shall be familiar with the content of this Certification and its posted location on the Project site.
7. The Applicant shall grant Central Coast Water Board staff, or an authorized representative, upon presentation of credentials and other documents as may be required by law, permission to enter the Project site at reasonable times, to ensure compliance with the terms and conditions of this Certification and/or to determine the impacts the Project may have on waters of the State.
8. The Applicant must, at all times, fully comply with the application, engineering plans, specifications, and technical reports submitted to support this Certification; all subsequent submittals required as part of this Certification; and the attached Project Information and Conditions. The conditions within this Certification and attachment supersede conflicting provisions within applicant submittals.
9. The Applicant shall notify the Central Coast Water Board within 24 hours of any unauthorized discharge to waters of the U.S. and/or State; measures that were implemented to stop and contain the discharge; measures implemented to clean up the discharge; the volume and type of materials discharged and recovered; and additional BMPs or other measures that will be implemented to prevent future discharges.
10. This Certification is not transferable to any person except after notice to the Executive Officer of the Central Coast Water Board. The Applicant shall submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new responsible party containing a specific date for the transfer of this Certification's responsibility and coverage between the current responsible party and the new responsible party. This agreement shall include an acknowledgement that the existing responsible party is liable for compliance and violations up to the transfer date and that the new responsible party is liable from the transfer date on.
11. This Certification expires if Project construction does not begin (a) prior to expiration of the associated U.S. Army Corps of Engineers (Corps) authorization or permit for the Project, or

(b) within five years from the date of this Certification. If a Corps authorization or permit was unnecessary for this Project due to coverage under a non-reporting Nationwide Permit (NWP), and Project construction has not begun, this Certification expires when the non-reporting NWP expires. If the Corps issues a one-year grace period for uncompleted projects that began under a NWP that has since expired, this Certification is valid during the grace period for such projects. If this Certification does not expire as described above, it remains in effect until the Applicant complies with all Certification requirements and conditions.

12. The total fee for this project is \$10,412. The remaining fee payable to the Central Coast Water Board is \$0.

## **ADDITIONAL CONDITIONS**

### **A. Work Windows**

1. Caltrans shall not conduct construction activities in Waters of the State, including riparian areas, between November 1 and April 14 (inclusive) unless prior written approval has been obtained from Central Coast Water Board staff. Requests to conduct construction activities in Waters of the State, including riparian areas, between November 1 and April 14 (inclusive) shall be submitted to Central Coast Water Board staff at least 21 days prior to the planned winter period work date.
2. Riparian areas include at least all of the following:
  - a) In Project locations 1, 2, and 3, all areas on the side of State Route 152 toward the tributary to Bodfish Creek;
  - b) In Project location 4, all areas on the side of State Route 152 toward Bodfish Creek;
  - c) In Project location 4, all unpaved areas on the north side of State Route 152 between approximate stations 159+50 and 162+00 (Blackhawk Creek); and
  - d) In Project locations 1, 2, 3, and 4, areas on the side of State Route 152 away from the creek which are nevertheless at the bottom of small local watersheds (such as at approximate stations 11+60, 64+60, 69+80, and 137+80).
3. Caltrans shall not conduct construction activities in Project locations 1, 2, 3, and 4 during rain events. Caltrans shall implement effective erosion control, sediment control, and other protective measures prior to the start of any rain events. Between October 1 and May 30, Caltrans shall not conduct construction activities in Project locations 1, 2, 3, 4, and 5 on any day for which the National Weather Service has predicted a 25% or more chance of at least 0.1 inch rain in 24 hours. In preparation for any such predicted rain event between October 1 and May 30, Caltrans shall install effective erosion control, sediment control, and other protective measures no later than the day prior to the predicted rain event. Construction activities may resume after the rain has ceased, the National Weather Service predicts clear weather, and site conditions are dry enough to continue work without discharge of sediment or other pollutants from the Project site.

### **B. Advanced Tree Removal**

1. Caltrans may conduct removal of trees and large vegetation prior to April 15 only after securing prior written approval from Central Coast Water Board staff. Advanced Tree Removal shall comply with the following conditions:

- a) Caltrans shall not conduct Advanced Tree Removal activities except within the impact footprint of proposed subsequent construction activities, and only during the winter period (October 1 – May 30) immediately preceding planned construction activities.
  - b) Caltrans shall minimize ground disturbance by: restricting equipment to paved surfaces, except where ground must be disturbed to place crane outriggers; cutting trees and large vegetation to be removed at least 4 inches above the ground; and using a crane or other fixed rigging to lower cut limbs and trunk sections to paved surfaces. Caltrans shall not drag limbs or trunk sections along the ground.
  - c) Caltrans shall implement effective inlet protection at all storm drain inlets. In Project locations 1, 2, 3, and 4, Caltrans shall also implement effective inlet protection at all locations, such as culverts, where stormwater runoff is able to cross State Route 152 and enter Bodfish Creek or its tributary.
  - d) Caltrans shall not conduct Advanced Tree Removal activities on any day for which the National Weather Service has predicted a 25% or more chance of at least 0.1 inch rain in 24 hours. In preparation for any such predicted rain event, Caltrans shall install effective erosion control, sediment control, and other protective measures no later than the day prior to the predicted rain event. Advanced Tree Removal activities may resume after the rain has ceased, the National Weather Service predicts clear weather, and site conditions are dry enough to continue work without discharge of sediment or other pollutants from the Project site.
  - e) Caltrans shall remove all cut wood and chips from the Project site, except for chips used for erosion control as provided below.
  - f) Caltrans shall implement effective erosion and sediment control measures on all disturbed ground and all ground exposed to rain drop impacts due to removal of overhead vegetative canopy. Wood chips may be utilized for erosion control provided they are covered with staked erosion control netting.
  - g) Caltrans shall prepare and keep current a Rain Event Action Plan (REAP), and shall implement the REAP in the event of rain.
  - h) Advanced Tree Removal activities shall comply with the conditions of Central Coast Water Board Order No. R3-2012-0008, *General Conditional Waiver of Waste Discharge Requirements for Timber Activities in the Central Coast Region*, if applicable.
2. Requests for approval of Advanced Tree Removal shall be submitted in writing at least 60 day prior to the beginning of each season of proposed tree and large vegetation removal work, and shall include the following information, at a minimum:
- a) Plans identifying the area proposed for Advanced Tree Removal activities and the trees and large vegetation proposed to be removed;
  - b) A description of procedures that will be followed in conducting the proposed activities;
  - c) The beginning and ending dates of the proposed activities;
  - d) A historical rainfall record indicating the likelihood of rainfall events exceeding 0.1 inch per day during the period between the beginning and ending dates of the proposed activities;
  - e) A water pollution control plan indicating erosion and sediment control measures that will be implemented; and
  - f) Photographs of the proposed work area.
3. Within 30 days of completion of Advanced Tree Removal activities each year, Caltrans shall submit a monitoring report that contains at least the following elements:
- a) A description of Advanced Tree Removal activities, including the number of trees removed and the method of removal;

- b) A discussion of any problems encountered during Advanced Tree Removal activities, lessons learned, and any additional measures Caltrans proposes to implement to avoid additional problems in any subsequent Advanced Tree Removal work; and
  - c) Photographs of Advanced Tree Removal activities, including documentation of activities and pre- and post-removal photographs.
4. This Certification constitutes written approval for Caltrans to conduct Advanced Tree Removal activities in Project locations 3 and 5 between January 7 and February 14, 2014, in accordance with the *2014 Hecker Pass Advanced Tree Removal Plan*, dated December 20, 2013, and Additional Conditions B.1 and B.3 above.

### **C. Post-Construction Stormwater and Hydromodification Management**

1. The Project shall incorporate post-construction stormwater and hydromodification management in accordance with supplemental information submitted to Central Coast Water Board staff on April 19, 2013.
  - a) The Project shall achieve infiltration of 85 percent of the runoff volume from all post-project impervious areas generated by all storms occurring over a period of at least 30 years.
  - b) Post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations for a range of storm events from 20 percent of the 2-year event to the 10-year event.
2. Prior to commencement of construction activities, Caltrans shall submit the following information demonstrating compliance with the post-construction stormwater and hydromodification management requirements stated above:
  - a) The total pre-project and total post-project impervious surface areas for each of the five Project locations;
  - b) The runoff volume equivalent to 85 percent of the runoff volume from all storms occurring over a period of at least 30 years, calculated for pre-project and post-project conditions for each of the five Project locations;
  - c) The runoff flow rates and durations for a range of storm events from 20 percent of the 2-year event to the 10-year event, calculated for pre-project and post-project conditions for each of the five Project locations;
  - d) A description of the control measures that will be used to achieve the post-construction stormwater and hydromodification management requirements, including the design, size, and dimensions of each control measure;
  - e) Engineering calculations demonstrating that the proposed control measures are adequately sized to achieve the requirements for each of the five Project locations, including an explanation of the hydraulic model and identification and justification of all assumptions used; and
  - f) The maintenance plan Caltrans will implement to ensure that all construction stormwater and hydromodification management control measures will continue to function as designed for the life of the Project.

### **D. Mitigation**

1. Project construction shall not commence without Central Coast Water Board Executive Officer approval of the final mitigation and monitoring plan (Final MMP). Caltrans shall submit a Final MMP acceptable by the Executive Officer by **July 1, 2014**. The Final MMP must fully describe Trash Removal mitigation, Understory Planting Onsite Mitigation, Fall

Creek Property Acquisition Mitigation, and Doan Ranch Offsite Mitigation. If Caltrans fails to submit a Final MMP acceptable by the Executive Officer by July 1, 2014, this Water Quality Certification will expire on July 15, 2014. Caltrans shall implement the Final MMP accepted by the Executive Officer.

2. Caltrans has developed the *Hecker Pass Safety Improvement Project Draft Final Mitigation and Monitoring Plan*, dated December 31, 2013 (DFMMP). The Final MMP shall be revised where necessary to incorporate all elements described in this Additional Condition D.
3. Trash Removal. Caltrans shall remove all noticeable trash and debris in Bodfish Creek and its tributary adjacent to Project areas.
  - a) The Trash Removal area must include at least 1.4 acres of concentrated trash removal, which means removal in areas where trash and debris are concentrated.
  - b) Trash removal shall be conducted by hand, and all trash and debris shall be removed from the Project areas and disposed of properly.
  - c) Trash removal shall be completed prior to installation of Understory Planting Onsite Mitigation.
  - d) Caltrans shall provide permanent signage within the Project area following completion of construction that discourages littering and illicit dumping, indicates the fine that can be levied against littering, and provides a telephone number that can be used to report violators.
4. Understory Planting Onsite Mitigation. Caltrans shall implement at least 0.95 acre of native riparian understory planting adjacent to Bodfish Creek (Project location 4) and its tributary (Project locations 1, 2, and 3) in accordance with the following Final MMP and other conditions.
  - a) The Final MMP shall identify the species, number, and size of non-herbaceous plants that will be installed as Understory Planting Onsite Mitigation.
  - b) In the Final MMP, Appendix F shall include planting details and spacing as stated in section 2.1 of the DFMMP.
  - c) Caltrans shall install Understory Planting Onsite Mitigation within 12 months of completion of Project construction.
  - d) Statements in the DFMMP notwithstanding (e.g., "On-site mitigation will consist of revegetating and restoring impacted features within the construction limits to pre-construction conditions," p. 13), Caltrans shall conduct Understory Planting Onsite Mitigation only in areas that are not impacted by Project activities, unless the Understory Planting Onsite Mitigation is implemented in accordance with Additional Condition D.4.f below. Caltrans shall revise the Final MMP to make this clear.
  - e) Understory Planting Onsite Mitigation shall be conducted only in areas between State Route 152 and Bodfish Creek or its tributary that are not currently vegetated, and where vegetation will be allowed to mature without pruning to maintain sight lines.
  - f) Understory Planting Onsite Mitigation may be conducted in currently vegetated areas or areas temporarily impacted by Project activities provided that the understory planting provides significant restoration/enhancement benefits beyond those provided by pre-project vegetation. Currently vegetated and temporary impact areas proposed for understory planting must be clearly identified and described in the Final MMP, including detailed information about the pre-project and proposed post-planting conditions.
  - g) Caltrans shall conduct hand removal of all non-native vegetation within the Understory Planting Onsite Mitigation area prior to planting activities.

5. Doan Ranch Offsite Mitigation. Caltrans shall implement 2,270 linear feet and 2.0 acres of riparian habitat creation/enhancement along an unnamed tributary to Canada de los Osos Creek, in the area known as Doan Ranch, in accordance with the Final MMP and the following conditions:
  - a) Caltrans shall enact a maintenance agreement with Santa Clara County Open Space Authority (SCCOSA) to implement the Doan Ranch Offsite Mitigation. Caltrans shall provide funding to SCCOSA to maintain the Doan Ranch Offsite Mitigation in perpetuity. The Final MMP shall identify the mechanism Caltrans will use to provide this funding.
  - b) Caltrans shall provide eight rock weir/check dam structures with plunge pools capable of achieving the wetted conditions described in the WRECO *Doan Ranch Proposed Rock Weirs Technical Memorandum*, dated November 15, 2013.
  - c) The entire mitigation area shall be permanently fenced to exclude cattle from the site, and individual plantings shall be provided with browsing guards to discourage foraging deer. Browsing guards shall be removed prior to final acceptance of the mitigation.
6. Fall Creek Property Acquisition Mitigation. Caltrans shall acquire and preserve in perpetuity the 18.3-acre parcel known as Fall Creek 1, located at the head of Manson Creek in Santa Cruz County.
  - a) Caltrans shall establish a maintenance agreement with Sempervirens to provide ongoing maintenance of the Fall Creek Property Acquisition Mitigation site, and shall enact a mechanism to fund this maintenance in perpetuity.
  - b) The Final MMP shall identify and/or describe the maintenance agreement and funding mechanism, and shall clearly identify the date(s) by which these arrangements will be completed.
  - c) The Final MMP shall identify procedures Caltrans will follow to report on the status of the Fall Creek Property Acquisition Mitigation site acquisition, maintenance agreement, and funding mechanism until these arrangements are completed.
  - d) Caltrans shall complete the Fall Creek Property Acquisition Mitigation site activities and requirements prior to completion of Project construction.
7. All areas subject to temporary Project impacts shall be restored to pre-project conditions.
8. Caltrans shall seed all exposed areas with a native seed mix and provide effective erosion controls until vegetation is established.
9. Supplemental irrigation must cease at least two years prior to final acceptance of mitigation. Irrigation systems must be removed prior to final acceptance of mitigation.
10. Caltrans shall provide protection for all mitigation areas through enactment of an easement or other encumbrance that ensures preservation of the mitigation sites in perpetuity. The Final MMP shall clearly identify the instruments Caltrans will enact to provide protection for mitigation areas in perpetuity, and shall indicate the schedule Caltrans will follow to enact them.
11. Monitoring. Caltrans shall conduct monitoring activities in accordance with the Final MMP and this Certification. The Final MMP shall include detailed descriptions of monitoring and reporting activities for impacted areas, post-construction stormwater and hydromodification management control measures, and compensatory mitigation areas, including the following conditions:
  - a) Caltrans shall visually inspect construction areas associated with the Project and the Doan Ranch Offsite Mitigation site, and areas of waters of the State adjacent to

construction areas, following completion of construction and for five subsequent rainy seasons to ensure that the construction is not causing excessive erosion, stream instability, or other water quality problems. Doan Ranch Offsite Mitigation inspections shall include visual monitoring of the status of the installed rock weirs, pools, and other channel complexity features. If either the Project or the Doan Ranch Offsite Mitigation is causing water quality problems, Caltrans shall contact the Central Coast Water Board staff overseeing the Project. Caltrans will be responsible for obtaining any additional permits necessary for implementing plans for restoration to prevent further water quality problems.

- b) Caltrans shall monitor the Understory Planting Onsite Mitigation and Doan Ranch Offsite Mitigation sites for five years. If success criteria are not achieved within that time, Caltrans shall continue annual monitoring and maintenance until success criteria are achieved. Compensatory mitigation monitoring shall include assessment of growth, survival, percent cover, general health and stature, signs of reproduction, progress towards achieving success criteria, and any other measures identified in the Final MMP, as accepted by the Central Coast Water Board Executive Officer.
- c) Statements in the DFMMP notwithstanding (e.g., "The Department will conduct qualitative monitoring of the on-site and off-site mitigation plantings twice a year during the plant establishment period in years 1-3," p. 42), Caltrans shall conduct monitoring of the Understory Planting Onsite Mitigation and Doan Ranch Offsite Mitigation sites for five years. Caltrans shall revise the Final MMP to make this clear.
- d) Statements in the DFMMP notwithstanding (e.g., "Performance criteria for all plantings (including on-site and Doan Ranch) will be at least 80% survival and cover for all planted tree and shrub species after 2 years and will demonstrate 70% at the end of 5 years," p. 44), success criteria for Understory Planting Onsite Mitigation and Doan Ranch Offsite Mitigation sites shall be as follows:
  - 75% survival and cover for all planted shrub and tree species after 5 years, with species survival reflecting the species distribution planted; and
  - 85% cover by native species in seeded areas after 5 years, not including channel-bottom areas, with species survival reflecting the proportions in the seed mix and no more than 10% cover by non-native species.

Caltrans shall revise the Final MMP to make this clear.

**CENTRAL COAST WATER BOARD CONTACT PERSON:**

Jon Rohrbough  
(805) 549-3458  
Jon.Rohrbough@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 as long as all the conditions listed in this Certification are met, any discharge from the Hecker Pass Safety Improvement Project EA 2A250 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. This discharge is also regulated pursuant to State Water Board Water

Quality Order No. 2003-0017-DWQ, which requires compliance with all conditions of this Certification.

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 and Conditions, and (b) compliance with all applicable requirements of the Central Coast Water Board's policies and Water Quality Control Plan (Basin Plan).

for \_\_\_\_\_  
Kenneth A. Harris, Jr.  
Executive Officer  
Central Coast Water Board

\_\_\_\_\_  
January 8, 2014  
Date

**PROJECT INFORMATION AND CONDITIONS**

Application Date	Received: December 17, 2012 Completed: December 17, 2012
Applicant	Fariba Zohoury California Department of Transportation 111 Grand Avenue Oakland, CA 94612 <a href="mailto:Fariba_Zohoury@dot.ca.gov">Fariba_Zohoury@dot.ca.gov</a> 510-715-9846
Applicant Representatives	Cyrus Vafai California Department of Transportation 111 Grand Avenue Oakland, CA 94612 <a href="mailto:Cyrus_Vafai@dot.ca.gov">Cyrus_Vafai@dot.ca.gov</a> 510-286-5585
Project Name	Hecker Pass Safety Improvement Project EA 2A250
Application Number	34313WQ06
Type of Project	Highway widening
Project Location	Santa Clara County Latitude: From 36.990817 N to 37.013441 N Longitude: From 121.65154 W to 121.714598 W
County	Santa Clara County
Receiving Water(s)	Bodfish Creek 305.20 Santa Cruz Mountains Hydrologic Unit
Water Body Type	Streambed
Designated Beneficial Uses	Municipal and Domestic Supply (MUN) Agricultural Supply (AGR) 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) Rare, Threatened or Endangered Species (RARE) Commercial and Sport Fishing (COMM)
Project Description (purpose/goal)	The purpose of this Project is to improve safe driving conditions on State Route 152 through Hecker Pass.  Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff understands that the Project includes the following activities in various locations totaling approximately 1.67 miles: 1. Widen existing paved shoulders to 8 feet; 2. Remove trees to construct shoulders and to provide improved sight lines; 3. Excavate cuts on the uphill side of State Route 152;

	<ol style="list-style-type: none"> <li>4. Construct nine retaining walls on the uphill side of State Route 152;</li> <li>5. Modify or extend 15 culverts, including placement of RSP;</li> <li>6. Modify drainage systems adjacent to State Route 152;</li> <li>7. Provide left-turn channelization in State Route 152 at the intersection with Watsonville Road;</li> <li>8. Overlay pavement to improve roadway super-elevation; and</li> <li>9. Install warning signs.</li> </ol>
U.S. Army Corps of Engineers Permit No	Nationwide Permit 14 – Linear Transportation Projects
Federal Public Notice	N/A
Dept. of Fish and Wildlife Streambed Alteration Agreement	Streambed Alteration Agreement is pending. Final, signed copy shall be forwarded immediately upon execution.
Status of CEQA Compliance	Environmental Impact Report Lead Agency: California Department of Transportation
Total Certification Fee	\$10,412
Area of Disturbance	<p>Approximately 2.03 acres total</p> <p>Streambed: 0.001 acre permanent, 0.003 acre temporary</p> <p>Riparian Area: 1.89 acres permanent, including 156 trees (57 coast redwood, 53 big leaf maple, 26 California bay laurel, 32 coast live oak, and 32 other species)</p> <p>Other Waters: 0.1 acre permanent, 0.037 acre temporary</p>
Dredge Volume	Approximately 246 cubic yards

<p>Compensatory Mitigation Requirements</p>	<ol style="list-style-type: none"> <li>1. The Project shall include the following compensatory mitigation for 2.03 acres of permanent and temporary impacts to streambed, riparian area, and other waters:             <ol style="list-style-type: none"> <li>a. At least 1.4 acres of concentrated trash removal in Bodfish Creek;</li> <li>b. At least 0.95 acre of native riparian understory planting adjacent to Bodfish Creek;</li> <li>c. Preservation of 18.3 acres of second-growth redwood forest in the area known as Fall Creek 1, located at the head of Manson Creek in Santa Cruz County; and</li> <li>d. Creation/enhancement of 2,270 lf and 2.0 acres of riparian habitat along an unnamed tributary to Canada de los Osos Creek in the area known as Doan Ranch.</li> </ol> </li> <li>2. Trash Removal Mitigation shall be conducted in accordance with Additional Condition D.3 of this Certification, and shall be completed prior to installation of understory planting. Understory Planting Onsite Mitigation shall be conducted in accordance with Additional Condition D.4 of this Certification, and shall be installed within 12 months of completion of Project construction. Doan Ranch Offsite Mitigation shall be conducted in accordance with Additional Condition D.5 of this Certification, and shall be commenced no later than June 2016. Fall Creek Property Acquisition Mitigation shall be conducted in accordance with Additional Condition D.6 of this Certification, and shall be completed prior to completion of Project construction.</li> </ol>
<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"> <li>1. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize land disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation.</li> <li>2. Caltrans shall conduct construction activities only during the work windows and weather conditions described in Additional Condition A of this Certification.</li> <li>3. Caltrans shall conduct Advanced Tree Removal activities only after securing prior written approval from Central Coast Water Board staff, and only in accordance with Additional Condition B of this Certification.</li> <li>4. Erosion and sediment control measures shall be on site prior to the start of construction and/or Advanced Tree Removal activities, and kept on site at all times so they are immediately available for installation in anticipation of rain events.</li> <li>5. Caltrans shall implement and maintain an effective combination of erosion and sediment control measures (e.g., revegetation, fiber rolls, erosion control blankets, hydromulching, compost, straw with tackifiers, temporary basins) to prevent erosion and capture sediment. Caltrans shall implement and maintain washout, trackout, dust control, and any other applicable source</li> </ol>

	<p>control BMPs.</p> <ol style="list-style-type: none"><li>6. Erosion and sediment control measures and other construction BMPs shall be implemented and maintained in accordance with all specifications governing their proper design, installation, operation, and maintenance.</li><li>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 control BMPs.</li><li>8. Caltrans shall retain a spill plan and appropriate spill control and clean up materials (e.g., oil absorbent pads) onsite in case spills occur.</li><li>9. 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.</li><li>10. 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.</li><li>11. Caltrans shall designate a staging area for equipment and vehicle fueling and storage at least 50 feet away from waterways, in a location where fluids or accidental discharges cannot flow into waterways.</li><li>12. All vehicle fueling and maintenance activity shall occur at least 50 feet away from waterways, and in designated staging areas.</li><li>13. 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 for Central Coast Water Board staff approval at least 21 days prior to any dewatering or diversion. Dewatering/diversion plans shall include the area to be dewatered, timing of dewatering, and method of dewatering to be implemented. All temporary dewatering/diversion methods shall be designed to have the minimum necessary impacts to waters of the State and to isolate the immediate work area. All dewatering/diversion methods shall be installed such that natural flow is maintained upstream and downstream of the Project area. Any temporary dams or diversions shall be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the Project area. All dewatering/diversion methods shall be removed immediately upon completion of dewatering/diversion activities. Dewatering or diversion shall not commence until applicant has obtained Central Coast Water Board staff approval of the dewatering/diversion plans.</li><li>14. Caltrans shall implement post-construction stormwater and hydromodification management control measures in accordance with Additional Condition C of this Certification. All post-construction stormwater and hydromodification management control measures shall be implemented and functioning as designed prior to completion of the Project.</li><li>15. All construction-related equipment, materials, and any temporary</li></ol>
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	<p>BMPs no longer needed shall be removed and cleaned from the site upon completion of the Project.</p> <p>16. Central Coast Water Board staff shall be notified if mitigations as described in the 401 Water Quality Certification application and supplemental information for this Project are altered by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. The Applicant shall inform Central Coast Water Board staff of any modifications that interfere with compliance with this Certification.</p>
<p>Monitoring and Reporting Requirements</p>	<p>Caltrans shall conduct monitoring in accordance with the Final MMP, as accepted by the Central Coast Water Board Executive Officer, and Additional Condition D.11 of this Certification.</p> <p>Caltrans shall provide the following reporting to RB3_401Reporting@waterboards.ca.gov:</p> <ol style="list-style-type: none"> <li>1. Streambed Alteration Agreement - Submit a signed copy of the Department of Fish and Game's streambed alteration agreement to the Central Coast Water Board immediately upon execution and prior to any discharge to waters of the State.</li> <li>2. Post-Construction Stormwater and Hydromodification Management Information – Prior to commencement of construction activities, Caltrans shall submit the information described in Additional Condition C.2 of this Certification.</li> <li>3. Advanced Tree Removal Monitoring Report – Within 30 days of completion of Advanced Tree Removal activities each year, Caltrans shall submit a monitoring report in accordance with Additional Condition B.3 of this Certification.</li> <li>4. Project Commencement Notification - Contact Central Coast Water Board staff when construction activities begin to allow for a site visit.</li> <li>5. Doan Ranch Offsite Mitigation Commencement Notification - Contact Central Coast Water Board staff when activities begin to allow for a site visit.</li> <li>6. Project Completion Report - Within 30 days of Project completion, Caltrans shall submit a Project completion report that contains:             <ol style="list-style-type: none"> <li>a. Date of construction initiation;</li> <li>b. Date of construction completion;</li> <li>c. Status of post-construction BMPs;</li> <li>d. A summary of daily activities, monitoring and inspection observations, and problems incurred and actions taken;</li> <li>e. Clearly identified photo-documentation of all areas of permanent and temporary impact, prior to and after Project construction;</li> <li>f. Clearly identified representative photo-documentation of other Project areas, prior to and after Project construction;</li> <li>g. Photo-documentation of all permanent post-construction BMPs;</li> <li>h. Verification that all post-construction stormwater and hydromodification management control measures are constructed and function as designed; and</li> </ol> </li> </ol>

	<ul style="list-style-type: none"><li>i. Verification that Caltrans has initiated the maintenance plan for post-construction stormwater and hydromodification management control measures.</li></ul> <p>7. Annual Report – Caltrans shall submit to the Central Coast Water Board an Annual Report by May 31 of each year following the issuance of this Certification, regardless of whether Project construction has started or not. Caltrans shall submit Annual Reports until Caltrans has conducted all required monitoring, mitigation has achieved all success criteria, and Caltrans has notified the Central Coast Water Board of mitigation completion. Each Annual Report shall include at a minimum:</p> <ul style="list-style-type: none"><li>a. The status of the Project: construction not started, construction started, or construction complete.</li><li>b. The date of construction initiation, if applicable.</li><li>c. The date of construction completion, if applicable.</li><li>d. If Project construction is complete, a description of the results of the annual visual inspection of the Project site and areas of waters of the State adjacent to Project impact areas, including:<ul style="list-style-type: none"><li>i. Erosion conditions;</li><li>ii. Stream stability conditions;</li><li>iii. Water quality and beneficial use conditions;</li><li>iv. Representative photographs of the Project site and areas of waters of the State adjacent to Project impact areas; and</li><li>v. If the visual inspection monitoring period is over, but water quality problems persist, the Annual Report shall identify corrective measures to be undertaken, including extension of the monitoring period until the Project is no longer causing excessive erosion, stream instability, or other water quality problems.</li></ul></li><li>e. If Project construction is complete, a description of maintenance activities conducted in accordance with the maintenance plan for post-construction stormwater and hydromodification management control measures, including verification that all control measures are functioning as designed.</li><li>f. Mitigation reporting, if mitigation installation has started, including the following information:<ul style="list-style-type: none"><li>i. Date of initiation of mitigation installation and date mitigation installation was completed;</li><li>ii. Analysis of monitoring data collected in the field, including results of visual monitoring as described in Additional Condition D.11 of this Certification;</li><li>iii. Quantification of growth, percent cover, survival, general health and stature, signs of reproduction, and documentation of progress toward achieving all mitigation performance criteria;</li><li>iv. Qualitative and quantitative comparisons of current mitigation conditions with preconstruction conditions and previous mitigation monitoring results;</li></ul></li></ul>
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	<ul style="list-style-type: none"><li>v. Any remedial or maintenance actions taken or needed;</li><li>vi. Any additional information specified in the Final MMP, as accepted by the Central Coast Water Board Executive Officer, and Additional Condition D; and</li><li>vii. Annual photo-documentation representative of the Understory Planting Onsite Mitigation and Doan Ranch Offsite Mitigation areas, taken from vantage points from which Central Coast Water Board staff can identify changes in size and cover of plants. Compare photos of installed mitigation with photos of the mitigation areas prior to installation.</li><li>g. A description of mitigation completion status that identifies the amount of mitigation monitoring and maintenance remaining, or certifies that mitigation is complete and all required mitigation monitoring and maintenance has been conducted and all success criteria achieved. If the monitoring period is over, but all success criteria have not been achieved, the Annual Report shall identify corrective measures to be undertaken, including extension of the monitoring period until the criteria are met.</li></ul>
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**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE

West Coast Region  
777 Sonoma Avenue, Room 325  
Santa Rosa, California 95404-4731

February 24, 2014

In response refer to:  
2012-4877

Carie S. Montero  
California Department of Transportation  
District Branch Chief, East and West Branches  
Office of Biological Sciences and Permits  
111 Grand Avenue, Mail Station 8E  
Oakland, California 94612

Re: Endangered Species Act Section 7(a)(2) Request for Technical Assistance for the Hecker Pass Safety Improvement Project

Dear Ms. Montero:

Thank you for your January 21, 2014, request for technical assistance regarding the California Department of Transportation's (Caltrans) Hecker Pass Safety Improvement Project in Santa Clara County, California. On March 13, 2013, NOAA's National Marine Fisheries Service (NMFS) issued its letter of concurrence (LOC) for the Hecker Pass Safety Improvement Project and determined the project was not likely to adversely affect the South-Central California Coast (S-CCC) steelhead (*Oncorhynchus mykiss*) Distinct Population Segment (DPS) and was not likely to result in the destruction or adverse modification of designated critical habitat for S-CCC steelhead in Bodfish Creek (a tributary to Uvas Creek in the Pajaro River Watershed). The LOC assessed the effects of widening portions of Highway 152 (5.06 miles spread over five different locations) to improve sight distances and provide standard shoulder widths, and the addition of a left turn lane at the junction with Watsonville Road. Other project activities included tree removal, retaining wall construction, pavement resurfacing, and culvert modifications on ephemeral, non-fish bearing streams. No work would occur below the Ordinary High Water Mark (OHWM) of Bodfish Creek and all activities were to be completed during the dry season (*i.e.*, between June 15 and October 15).

On January 21, 2014, Caltrans provided NMFS with an updated project description. Specific changes to the project include: (1) an extension of the work window within riparian forested areas (but above the OHWM of Bodfish Creek) to between April 15 and October 15 including night work; (2) an extension of the work window for activities in upland areas to year-round,



including night work; (3) inclusion of tree removal between October 16 and the end of February 29 (if necessary); (4) a minor change in the type of retaining wall at Location 4; and (5) minor updates to the proposed culvert modifications (*e.g.*, extensions).

The updated project includes the construction of nine soil nail walls on the upland side of Highway 152. Construction of the soil nail walls and widening of the roadway and shoulders will involve grading in upland areas immediately adjacent to the existing shoulders. These activities will be conducted between April 15 and October 15. One soldier pile retaining wall will be constructed on the riparian side of the highway at Location 4. Caltrans has confirmed the retaining wall will remain above the OHWM and will be constructed from the roadway between June 15 and October 15.

Caltrans has proposed and will adhere to the following avoidance and minimization measures for vegetation clearing between October 16 and the end of February: (1) Heavy equipment (*e.g.*, cranes and trucks) will be restricted to the roadway surface except where crane outriggers will rest; (2) trees and large vegetation will be cut no more than four inches above the ground surface (*i.e.*, no grubbing); and (3) a crane will be used to lift logs and other debris to the roadway (*i.e.*, no dragging of logs or large limbs on the forest floor).

Modifications to 15 existing culverts (extensions or modifications to inlets/outlet types) will occur at Locations 4 and 5. Caltrans proposes to restrict these activities to the dry season, and all disturbed soil will be stabilized prior to subsequent winter rain.

All of the project activities will occur above the OHWM of Bodfish Creek, and therefore, direct impacts to critical habitat or steelhead are not likely to occur. The work window extensions will reduce the number of full seasons necessary to complete the project from five to three. Caltrans has proposed several general and species-specific avoidance and minimization measures and will adhere to all erosion control measures outlined in the project's final Storm Water Pollution Prevention Plan, Erosion Control Plan, and its Final Mitigation and Monitoring Plan.

Based on the above information, NMFS has determined proposed modifications to the project will not cause additional effects to S-CCC steelhead or designated critical habitat not previously considered in the original LOC. Therefore, reinitiation is not required at this time. However, reinitiation of consultation may be required if: (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (3) a new species is listed or critical habitat designated that may be affected by the action.

Thank you for your continued coordination and cooperation on this project. If you have questions regarding the above comments, please contact Joel Casagrande of my staff at (707)-575-6016 or at joel.casagrande@noaa.gov.

Sincerely,



for William W. Stelle, Jr.  
Regional Administrator

Enclosure

cc: Monica Gan, Caltrans, Oakland  
Paula Gill, Corps, San Francisco  
Melissa Escaron, CDFW, Napa  
Jerry Roe, USFWS, Sacramento  
Copy to file 151416-SWR-2012-SR01874

# Memorandum

*Flex your power!  
Be energy efficient!*

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

Date: August 21, 2013

Attention: S. Hegazi

File: 04-SCL-152 PM 3.1/3.2  
04-2A2501  
Efis: 04 0000 0813-1  
Steel Soldier Pile Wall

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 (FR) for the Proposed Steel Soldier Pile Wall

## 1. INTRODUCTION

As per your request dated August 5, 2013, we are providing you with our foundation recommendation for the design of the proposed steel soldier pile wall for the proposed widening at the above referenced location. The wall is located along the eastbound shoulder of Route 152 (Hecker Pass) about 0.7 miles west of Whitehurst Road in the City of Gilroy in Santa Clara County. Refer to the attached Wall Location Map.

### 1.1 History

The proposed widening of Route 152 is being accommodated by cutting into the adjacent hills on the north side of Route 152 with some minor fill on the south side at this location. A Caltrans Standard Type 5 was deemed to be the most suitable alternative since it has a relatively short height of about 8'. We sent a Geotechnical Design Report (GDR) for Type 5 Retaining wall dated October 24, 2011 to Design for this location. However, because of environmental concerns and constructability issues, it is decided to construct a soldier pile wall instead. This Foundation Report supersedes our GDR for Type 5 Retaining wall dated October 24, 2011.

## 2. PROJECT PURPOSE AND NEED

The need for this project is to contain the fill to accommodate the proposed widening at this location. We have considered different types of retaining wall alternatives such as Caltrans Standard Type 1, Type 7 Retaining Wall and MSE wall. However, for this project, in order to contain the minor fill for the proposed widening, a Caltrans Standard Type 5 was deemed to be the best alternative since it has a maximum height of about 8 ft. However, due to environmental and constructability concerns above the existing creek, we were asked to look into other types of

MR. BRIAN MORI  
 Attn: S. Hegazi  
 August 21, 2013  
 Page 2

walls that do not require excavation. Therefore, the use of soldier pile for this wall is being considered to alleviate the environmental concerns.

The following Table 1 lists wall name, type, locations, height, length and boring information:

Table 1

Wall No.	Location	Boring Name	LOL Sta. limits/ Boring Location	Boring Depth (ft.)	Boring Elev. (ft.)	Wall/ (Boring Type)	Max. Wall Height (ft)	Length (ft)
166	4		Sta. 165+20 to 166+90			Soldier pile	8	170
		A-13-001	14' RT. 160+10	46	493.0	VERTICAL		

### 3. SCOPE OF WORK

The following tasks were performed for the preparation of this Foundation Report:

- Field mapping
- Field geotechnical exploration, including drilling one boring
- Review of the previously prepared memorandums by this office
- Laboratory testing on selected samples
- Preparation of this FR.

### 4. SITE GEOLOGIC

The project area lies in the southern part of Santa Clara County in the Santa Cruz Mountains, part of the Central California Coast Range. The area includes five fault- bounded structural blocks, each containing a distinct stratigraphic assemblage, and Santa Clara Valley which contains a large Quaternary alluvial complex overlying and obscure bedrock relationships.

The project is located along the Sargent fault, which separates two structural blocks to the Sierra Azul Block and the New Alameden block. The project is underlain by the following rock units:

- **Alluvial fan deposits (Pleistocene)** – Unconsolidated boulders, sand, silt and soil, deposited in older alluvial fans. Includes deposits of older Pleistocene alluvial fans incised by younger Pleistocene and Holocene alluvial deposits. Units include channel and overbank deposits of major Pleistocene fluvial systems, found within Bodyfish Creek, directly below the proposed wall.

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Attn: S. Hegazi

August 21, 2013

Page 3

- **Volcanic rocks (Franciscan -Lower Cretaceous)** – Pillowed basalt flows, flow breccias, and andesitic tuff.
- **Sandstone and mudstone of Loma Chiquita Ridge** – thick-to thin bedded, locally pebbly, quartzo-feldspathic and arkosic sandstone and interbedded micaceous carbonaceous mudstone.

Refer to the attached Geologic Map and the Log of Test Borings for Details.

## 5. FAULT AND SEISMIC DATA

The Project site is located in an area of extremely high seismicity, even for the Bay area.

The Sargent Fault is an active fault and located 0.13 miles south and west of the project site. The Sargent Fault is an east-dipping strike slip fault with a Maximum Magnitude 7. The Sargent Fault forms the boundary between the Sierra Azula and the New Almaden blocks.

The San Andreas Fault is an active fault and located 2.8 miles west of the project site. The San Andreas Fault consists of a complex zone of right lateral strike –slip faulting up to 1.2 mile wide with a Maximum Magnitude 8.

The following table lists the distance from the project site to the nearby active faults, the Maximum Magnitude of these faults, estimated Deterministic Peak Bed Rock Acceleration (PBA), and probabilistic USGS 5% in 50 years hazard anticipated using the Caltrans ARS online (Shake Program).

Fault	Site to source distance (mile)	Maximum Magnitude (Mmax)	Peak Bed Rock Acceleration (PBA)	probabilistic USGS 5% in 50 years
Sargent fault (NW section)	0.13	7.0	0.69	0.80
San Andreas	2.8	8.0	0.46	
Sargent fault (NE section)	0.5	7.0	0.53	

The Sargent Fault is the controlling fault in the project site and its probabilistic value is 0.80

MR. BRIAN MORI  
Attn: S. Hegazi  
August 21, 2013  
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Due to the close proximity of the Sargent Fault and the possibility of off-fault rupture, the proposed wall may be subject to fault rupture. Refer to the attached Regional Fault Map, ARS Curve. Also, refer to the attached preliminary Seismic Design Recommendation by Mr. Hossain Salimi dated August 21, 2013.

## **6. SUBSURFACE SOIL CONDITIONS**

One Power boring (A-13-001) was drilled by 6 inches Hollow Stem Auger method with Standard Penetration Test (SPT) sampling in August 2013, to the depths of 46 feet. The boring describes the foundation soils/rocks as approximately 7 feet medium dense clayey sand. This overlies about 25 feet of decomposed to hard, intensely to moderately fractured sedimentary rock (Sandstone/Mudstone). The remainder of the boring describes the foundation soils/rocks as moderately hard, intensely fractured, intensely weathered metamorphic rock (Franciscan Serpentine). The SPT blow counts range from 20 to more than 50 (refusal) blows per foot.

Groundwater was not encountered in boring A-13-001 at the time during drilling (August 2013). The Log of Test Boring Sheets (LOTB) will be furnished to you when completed. The LOTB sheets should be included with the contract plans.

## **7. GEOTECHNICAL TESTING**

### **7.1 Laboratory and In-Situ Testing**

Laboratory testing was performed on selected samples of the subsurface materials obtained during our subsurface investigation. Tests include moisture content and corrosion testing.

## **8. FOUNDATION RECOMMENDATIONS**

In order to contain the proposed fill and based on the site conditions and the results of our field investigation, we recommend constructing soldier piles in eastbound direction of Route 152 for a distance of about 170 ft. The wall will be constructed at about 23 ft offset from the existing Route 152 centerline. See attached Exhibit A.

We recommend that the soldier piles be designed to act as an 8 feet-high (max.) cantilever wall with wood lagging where needed. The 8-foot maximum wall height limits are between approximate Stations 165+20 and 166+90.

We recommend the soldier piles wall be designed for the following:

### **Lateral Earth Pressures**

The wall should be designed for the following:

MR. BRIAN MORI  
Attn: S. Hegazi  
August 21, 2013  
Page 5

For *active pressure* against the wall, use the following:

Between 0' and 8' depth:

- Internal friction angle  $\phi = 32^\circ$ ,  $C = 500$  psf & soil moist unit weight ( $\gamma$ ) = 125 lb/ft<sup>3</sup>.
- For earth pressure distribution, use a triangular pressure distribution.
- A rectangular pressure diagram from top of the wall to a depth of 10 ft for traffic surcharge equivalent to about 2 ft of fill.
- The wall shall be capable of resisting an additional seismic uniform earth pressure estimated to be equal to 17H psf.

For *passive pressure* against the soldier piles, use the following input:

Below Dredge line:

- Internal friction angle  $\phi = 35^\circ$ ,  $C = 0$  psf & soil moist unit weight ( $\gamma$ ) = 125 lb/ft<sup>3</sup>.
- Friction Factor =  $3/4\phi$
- Use Isolation Factor of 3.0

**Vertical soldier Pile Capacities and Penetration Depth**

Based on the borings, the soldier piles should be embedded (to the competent rock layer) a minimum of 30 feet (pile length) below the roadway surface.

The ultimate vertical compression and tension capacities of piles may be calculated using the following design parameters:

Use a unit pile shaft friction of 2.5 ksf per unit surface area of the pile length below the dredge line of the wall.

Use 60 percent of the compression shaft resistance values mentioned above to calculate the ultimate tension (uplift) resistance of the pile.

For ultimate pile tips compression, use bearing capacity of 70 ksf per unit tip.

The above recommendations are based on parameters established by our field exploration and engineering judgment.

MR. BRIAN MORI  
Attn: S. Hegazi  
August 21, 2013  
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## 9. LIQUEFACTION

Liquefaction is a phenomenon in which loose, saturated and relatively cohesionless soil deposits located beneath the groundwater table loose strength during strong ground motions. The USGS Bay Area liquefaction Map shows location 4 has a very low to moderate level of susceptibility for liquefaction. The potential for liquefaction at this wall location is considered to be negligible since groundwater was not encountered in Boring A-13-001 and the sand layer was medium dense.

## 10. 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-09-013	c634947	19'-29'	4247	7.1	N/A	N/A
R-09-014	c634946	20'-30'	2514	6.8	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.

\* Borings taken for soil nail walls in the vicinity of Retaining Wall No 166

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

MR. BRIAN MORI  
Attn: S. Hegazi  
August 21, 2013  
Page 7

## 11. CONSTRUCTION CONSIDERATIONS

The following construction considerations and requirements should be included in the design and construction specifications for the proposed wall.

- Installation of the piles should be performed in accordance with Section 49-4 of the 2010 Caltrans Standard Specifications.
- Drilling and concrete placement of pile construction shall be staggered. No open holes shall be adjacent.

## 12. 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.

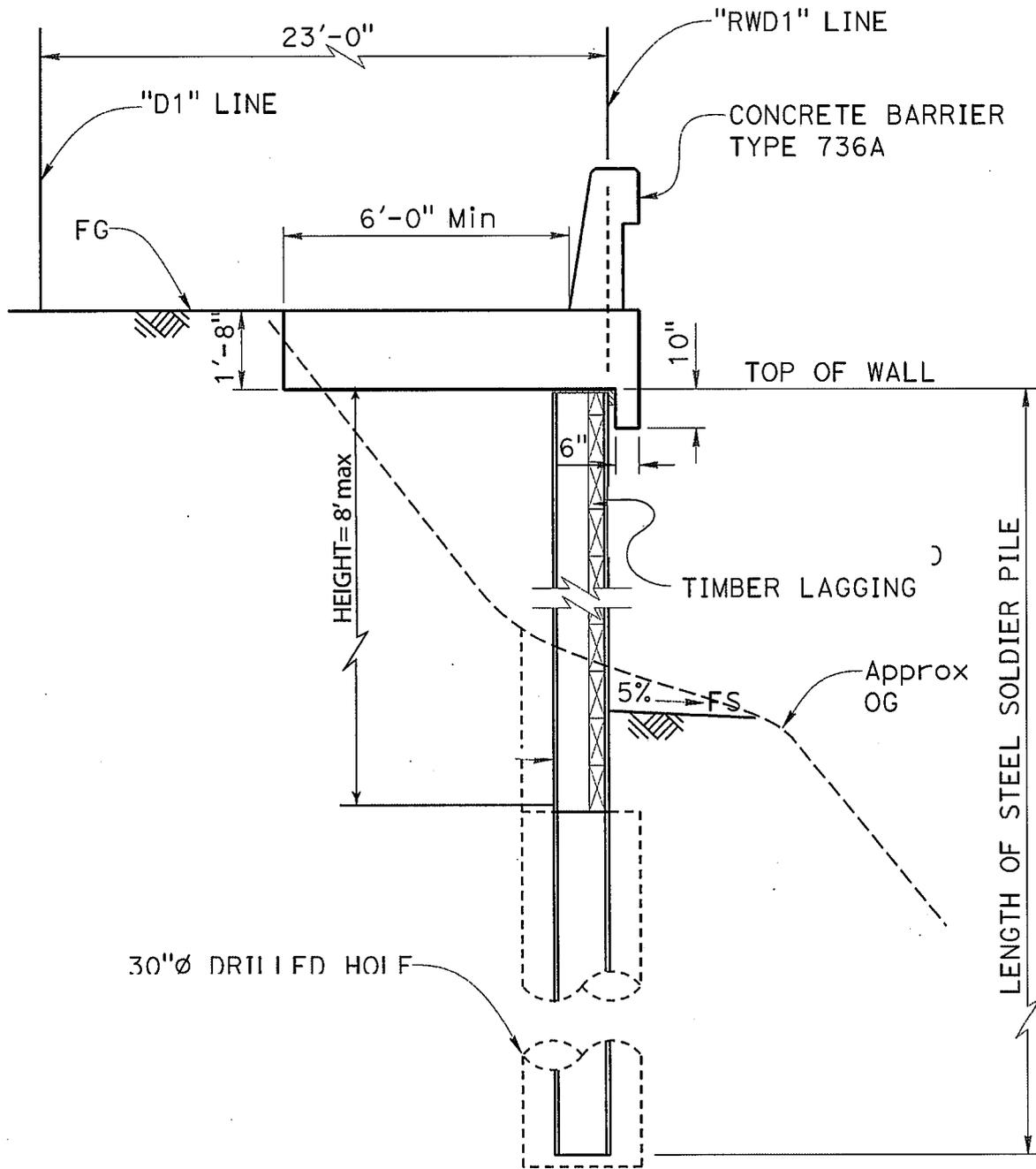
Attachments:

c: TPokrywka, HNikoui, MZabolzadeh, AKaddoura - (GS west), SRajendra (GS Support-Office Chief), Structure Construction RE pending File, Ofelia Alcantara (DES OE), Rubin Woo (District ME), Fariba Zohoury (District 4 PM), Hydraulics (District 4), Steve Fukagawa PE (District 6 PE), Getachew Eshete (District 6 Senior).

Attachments

Kaddoura-Zabolzadeh/mm/2A2501-steel soldier Pile Wall #166 FR





**TYPICAL SECTION**

NOT TO SCALE

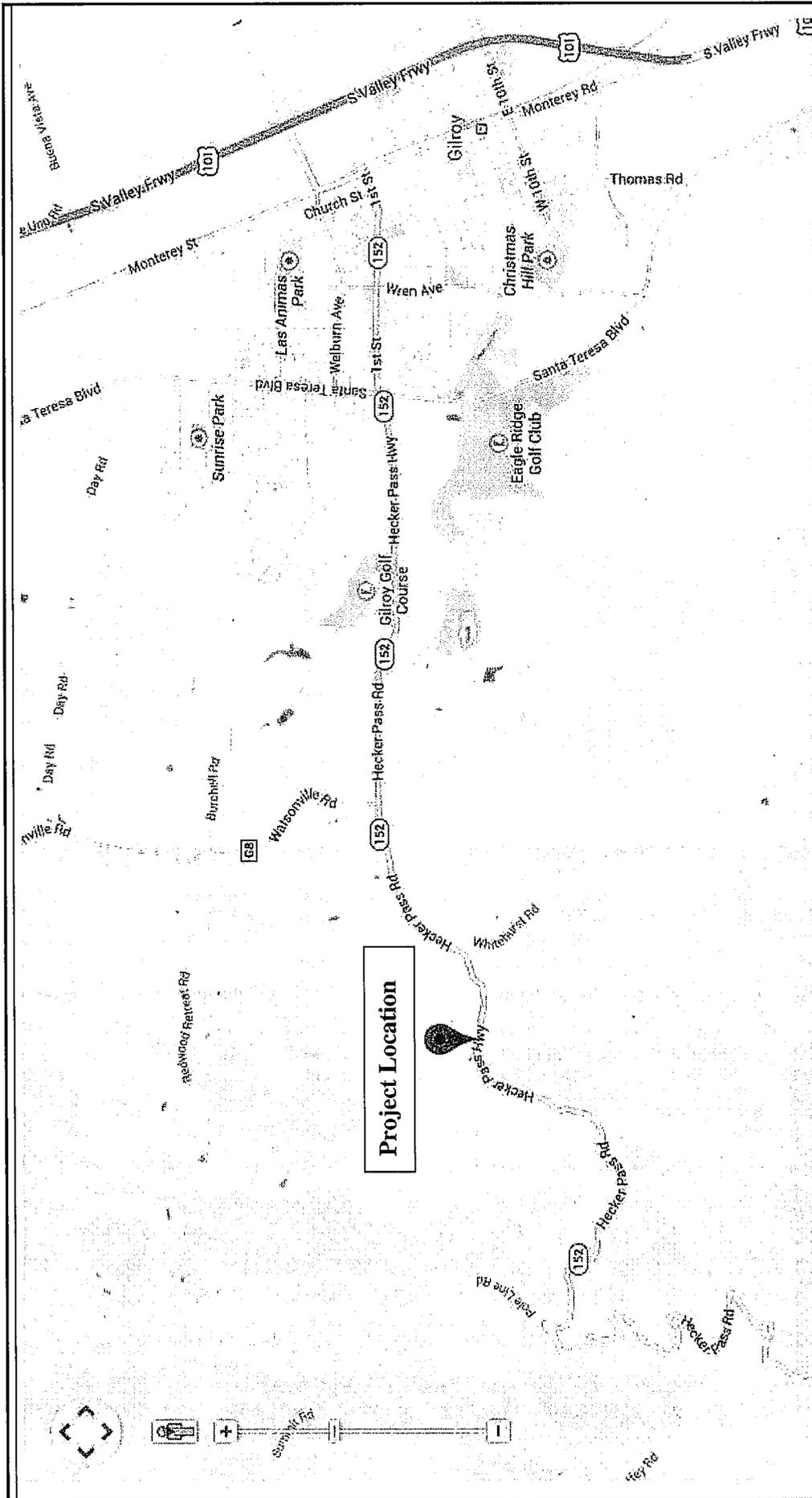


DIVISION OF  
**ENGINEERING SERVICES**  
 GEOTECHNICAL SERVICES  
 GEOTECHNICAL DESIGN - WEST - BRANCH A

**TYPICAL CROSS SECTION**

04-SCL-152 PM. 0.0/5.2      EFIS 040000813-1  
 04-2A2501      AUGUST 2013

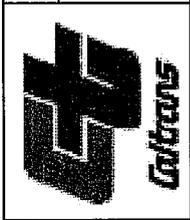
**EXHIBIT A**



**Location Map**

04-SCL-152  
EA 2A2501

PM 3.1/3.2  
August, 2013



**Project Location**

**MAP EXPLANATION**

- Qal - Alluvium, undivided (Holocene and Pleistocene)
- Qls - Landslide deposits, undivided (Holocene and Pleistocene)
- Qhf - Alluvial fan deposits (Holocene)
- Qhfp - Floodplain deposits (Holocene)
- Qpf - Alluvial fan deposits (Pleistocene)
- Tms - Monterey shale (middle and lower Miocene)
- Tl - Tumbler sandstone (middle Miocene to Oligocene)
- Ttv - Volcanic and intrusive rocks (middle Miocene)
- Jos - Serpentinized ultramafic rocks (Jurassic)
- Fm - Melange of central belt (Upper Cretaceous)
- bs - Blueschist blocks
- ch - Chert blocks
- fpv - Volcanic rocks (lower Cretaceous)
- fms - Sandstone (Upper and/or lower Cretaceous)
- fmc - Radiolarian chert (lower Cretaceous Jurassic)
- Tls - Sandstone and mudstone
- Tcm - Mottled mudstone and sandstone of Mount Chual (lower Eocene)



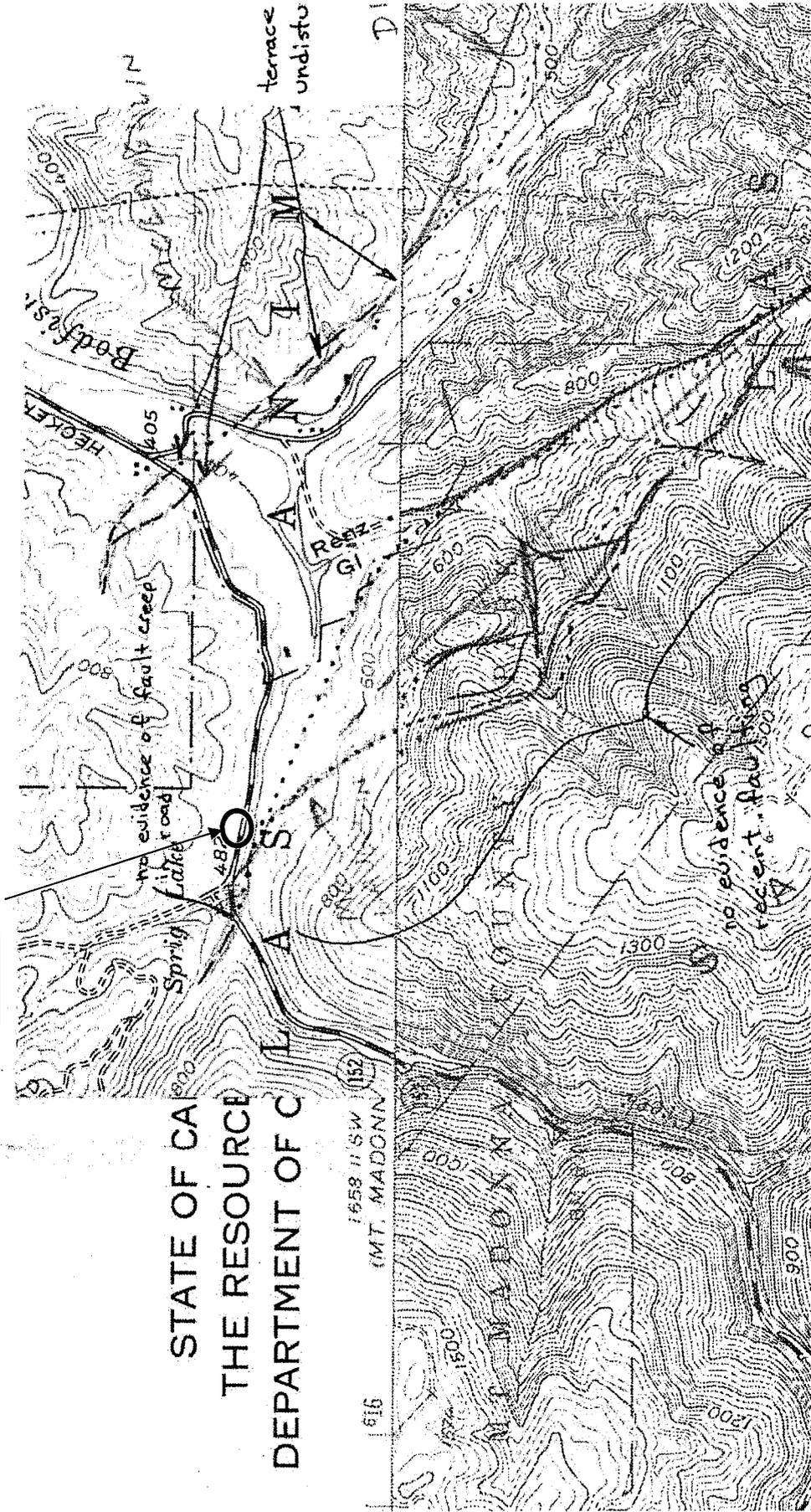
Scale 1:24,000

**GIB**  
 Geotechnical Services  
 Office on Geotechnical Design - West  
 Branch B

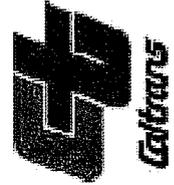
Reference: U.S. Geological Survey, 2001, Miscellaneous Field Studies Map MF-2373

**HECKER PASS ROAD**  
 04-SCI-152 PM 3.1/3.2  
 EA No. 2A2500 August 2013  
 GEOLOGY MAP

Project Location



Not to Scale



FAULT MAP

04-SCL-152 PM 3.1/3.2  
 EA 2A2501 August, 2013

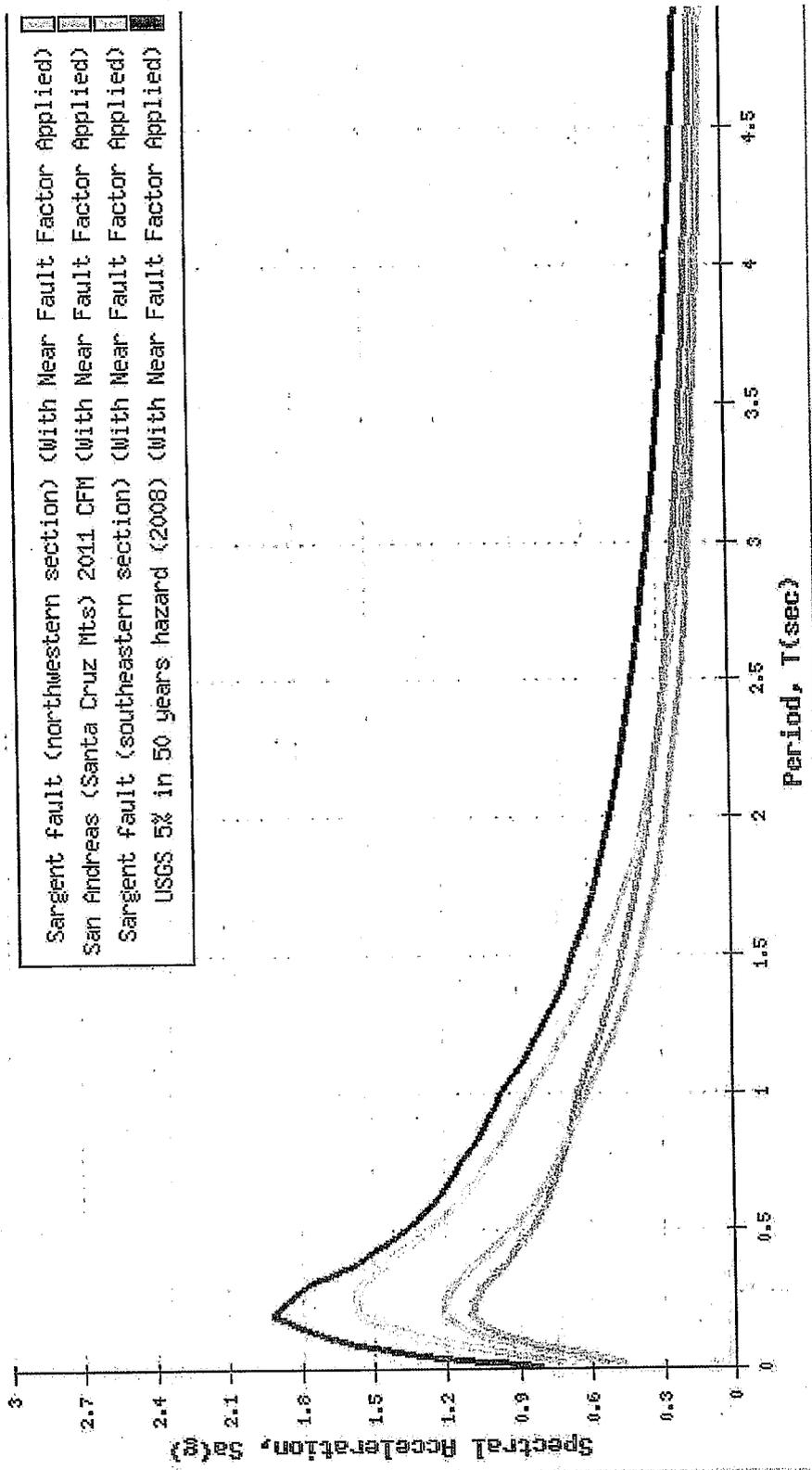
Source: CGS- Fault Evaluation Report FER-96

Display Curves: 3

CALCULATED SPECTRA

Location: LAT=37.000374 LONG=-121.68024 Vs30=560m/s

- Sargent fault (northwestern section) (With Near Fault Factor Applied)
- San Andreas (Santa Cruz Mts) 2011 CFM (With Near Fault Factor Applied)
- Sargent fault (southeastern section) (With Near Fault Factor Applied)
- USGS 5% in 50 years hazard (2008) (With Near Fault Factor Applied)



Boring No.: A-13-001	1 of 3	Location: 0.7 MILES WEST OF WHITEHURST RD. (ABOUT 400' east of park entrance)	
Date: 08/13/2013	EA No.: 04-2A2500		
Dist. - Co. - Rt.: 04 - SCL - 152	P.M.: 3.01	Purpose of work: Foundation investigation for soldier pile wall	
Elev.: ~ 493 ft.	Water levels/times: dry	Depth of hole: 46'	
Logged by: Ali Kaddoura		Drill Crew: Pitcher Drilling (Levy crew)	
Drill Rig: Acker 0398		Hammer Details: Safety, Automatic drop ( 140lbs. /30 in. )	
Drilling Method(s): 6" HAS		Casing: None	
Other Info: Energy Ratio 74%, N adj. = 1.23			

DEPTH	SAMPLE DEPTH INTERVAL (ft)	SATY PPLE	BLOW S	SPT N	SNT Rec i % n	DESCRIPTION	REMARKS
1							
2							
3							
4							
5							
6	5.0/6.5	SPT 1A	9 10 10	20	80%	CLAYEY SAND(SC), medium dense, dry, few Clay; fine to medium Sand	% Moisture Content
7							
8							
9							
10							
11	10.0/11.5	SPT 2A	10 14 16	30	20%	SEDIMAENTARY ROCK (SANDSTONE), fine to medium grained, light brown, slightly to moderately weathered, soft to medium soft, moderately fractured.	
12							
13							
14							
15							
16	15.0/16.5	SPT 3A	20 22 24	46	100%	SEDIMAENTARY ROCK (MUDSTONE), light brown, DECOMPOSED, soft, intensely fractured; weathers to SILT, hard, dry, little fine Sand.	
17							
18							
19							
20							
21	20.0/21.5	SPT 4A	17 25 28	53	90%	Same, increasing CLAY	

Boring No.: A-13-001	2 of 3	Location: 0.7 MILES WEST OF WHITEHURST RD. (ABOUT 400' east of park entrance)	
Date: 08/13/2013	EA No.: 04-2A2500		
Dist. - Co. - Rt.: 04 - SCL - 152	P.M.: 3.01	Purpose of work: Foundation investigation for soldier pile wall	
Elev.: ~ 493 ft.	Water levels/times: dry	Depth of hole: 46'	
Logged by: Ali Kaddoura		Drill Crew: Pitcher Drilling (Levy crew)	
Drill Rig: Acker 0398		Hammer Details: Safety, Automatic drop ( 140lbs. /30 in. )	
Drilling Method(s): 6" HAS		Casing: None	
Other Info: Energy Ratio 74%, N adj. = 1.23			

DEPTH	SAMPLE DEPTH INTERVAL	SAMPLE TYPE	BLOWS	SPT N	S % i n T N R e c c .	DESCRIPTION	REMARKS
22							% Moisture Content
23							
24							
25							
26	25.0/25.5	SPT 5A	6 13 16	29	70%	SAME	
27							
28							
29							
30							
31	30.0/31.5	SPT 6A	37 50/4"	>50	90%	SAME	
32							
33							
34							
35							
36	35.0/36.5	SPT 7A	50/3"	REF	100%	METAMORPHIC ROCK (FRANCISCAN SERPENTINE), fine grained, light TO OLIVE GREEN, Massive, intensley weathered, Moderately Hard, moderately fractured.	
37							
38							
39							
40							
41	40.0/41.5	SPT 8A	50/4"	REF	90%	SAME	
42							

Boring No.: A-13-001	3 of 3	Location: 0.7 MILES WEST OF WHITEHURST RD. (ABOUT 400' east of park entrance)	
Date: 08/13/2013	EA No.: 04-2A2500		
Dist. - Co. - Rt.: 04 - SCL - 152	P.M.: 3.01	Purpose of work: Foundation investigation for soldier pile wall	
Elev.: ~ 493 ft.	Water levels/times: dry	Depth of hole: 46'	
Logged by: Ali Kaddoura		Drill Crew: Pitcher Drilling (Levy crew)	
Drill Rig: Acker 0398		Hammer Details: Safety, Automatic drop ( 140lbs. /30 in. )	
Drilling Method(s): 6" HAS		Casing: None	

Other Info: Energy Ratio 74%, N adj. = 1.23							
DEPTH	SAMPLE DEPTH INTERVAL	SATY PPLE	BLOW S	SPT N	SNT Rec i n % n	DESCRIPTION	REMARKS
43							% Moisture Content
44							
45							
46	45.0/46.5	SPT 9A	27 50/5"	>50	100%	SAME	
47						Bottom of Hole	
48						ER= 74%	
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							
61							
62							
63							

## Memorandum

*Flex your power!  
Be energy efficient!*

**To:** MR. HOOSHMAND NIKOUI  
Chief, Branch A  
Division of Engineering Services  
Office of Geotechnical Design-West

**Date:** August 21, 2013

**File:** 04-SCL-152-PM 3.1/3/2  
04-2A2501  
Hecker Pass Road  
Soldier Pile Wall

Attention: Mr. A. Kaddoura  
Mr. M. Zabolzadeh

**From:** HOSSAIN SALIMI  
Senior Materials and Research Engineer  
Division of Engineering Services  
Geotechnical Services – MS-5  
Office of Geotechnical Design-West

**Subject:** Preliminary Seismic Design Recommendations

This memorandum is in response to your request dated August 20, 2013 to provide the Preliminary Seismic Design Recommendations for the proposed Soldier Pile Wall project by Hecker Pass Road located approximately 10 kilometers west of the City of Gilroy on Route 152 in Santa Clara County.

According to the latest California Seismic Hazard Map (Version 2.2.06), which is based on the United States Geological Survey (USGS) and California Geological Survey (CGS) maps, the nearest faults are San Andreas (Santa Cruz Mountains) Fault (Strike-Slip) with Maximum Moment  $M_{max}=8$ , located less than 5 kilometers southwest of the site, and Sargent Fault (Strike-Slip) with Maximum Moment  $M_{max}=6.9$ , located less than 0.1 kilometer from the site (horizontal distance to the fault trace or surface projection of the top of rupture plane). The Peak Bedrock and Ground Acceleration, based on the site geology and seismicity is 0.79 g.

As mentioned, the site is very close to Sargent Fault. Due to the extreme proximity, fault rupture potential and its affect(s) on the proposed structure had to be further investigated. Mrs. Martha Merriam of the Office of Geotechnical Support was contacted to look at this site more thoroughly and provide this Office with her findings. According to Mrs. Merriam, "The mapped trace is very close to the location, and concealment by young landslide and fluvial materials makes the fault difficult to find here. However, I think that unless this wall is a special build, we don't usually address surface rupture at a non-structure". Attached please find her complete findings.

A recent field investigation was performed at this site which included one bore hole (A-13-018) drilled in August 2013 to a depth of 46 feet. According to the Foundation Report prepared by Mr.

Mr. Hooshmand Nikoui

August 21, 2013

Page 2

Rifaat Nashed dated August 20, 2013, the site consists of 7 feet of medium dense clayey sand overlaying 25 feet of decomposed to hard, intensely to moderately fractured Sandstone and Mudstone below which moderately hard, intensely fractured and weathered Serpentine was encountered. Based on these findings, a shear wave velocity of 560 meters per second is assigned to the site. Ground water table was not measured at the time of this investigation.

The Acceleration Response Spectrum (ARS) curves based on the Caltrans On-Line Deterministic Seismic Hazard Analysis (DSHA) and Probabilistic Seismic Hazard Analysis (PSHA) version 2.2.06 using a 975-year return period (5% probability of exceedance in 50 years) were generated for the site, incorporating the latest Attenuation Relationship models. In addition, the PSHA with a 975-year return period using the USGS Interactive Deaggregation procedure was generated, and all three curves were compared. Due to the high seismicity of the site, the PSHA response spectra were both higher than the deterministic spectra (please see Figure 1).

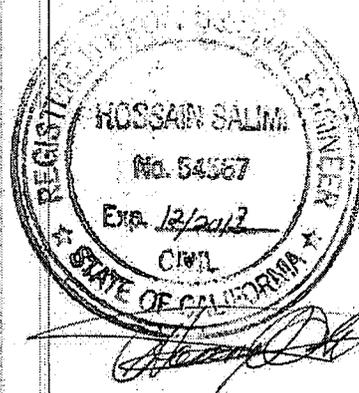
Furthermore, the spectrum generated using the USGS Interactive Deaggregation procedure yielded slightly higher amplitudes and was chosen to be used as the recommended ARS curve (please see Figure 2).

Please note that the preliminary ARS curve has been modified to account for the proximity of the site to faults. The modifications are such that there is no increase in spectral acceleration in periods less than 0.5 seconds and a 20% increase for periods greater than one second. A linear interpolation was used between 0.5 and one second. The potential for soil liquefaction during a seismic event is considered minimal.

If there are any questions, please contact Hossain Salimi at (916) 227-7147.

#### Attachments

- c: TPokrywka (OGD-W)
- MMacaranes (OGD-W)
- RNashed (OGD-W)
- MMerriam (OGS)



### Acceleration Response Spectra comparisons for Hecker Pass Road

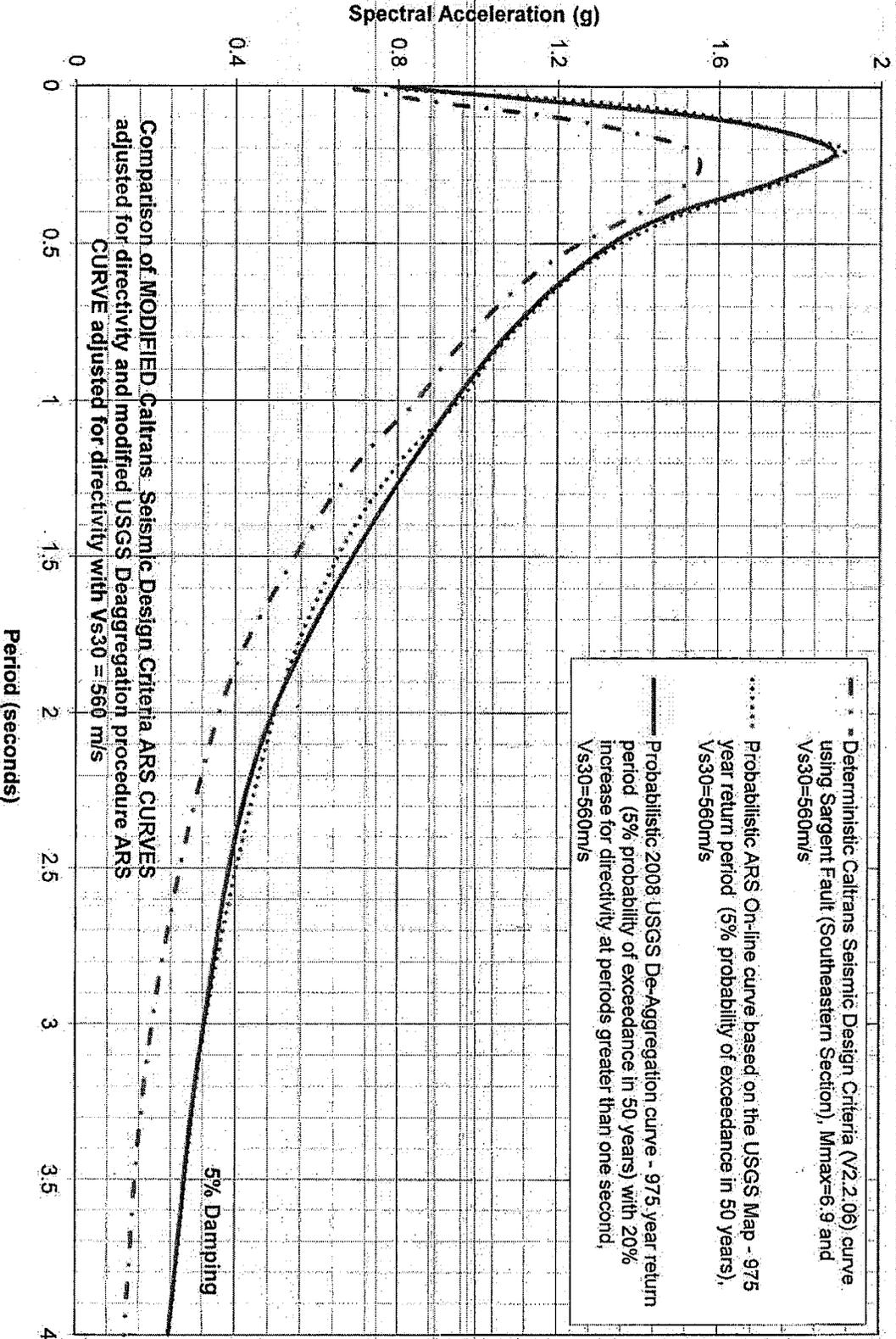


Figure 1

### Recommended Acceleration Response Spectrum for Hecker Pass Road

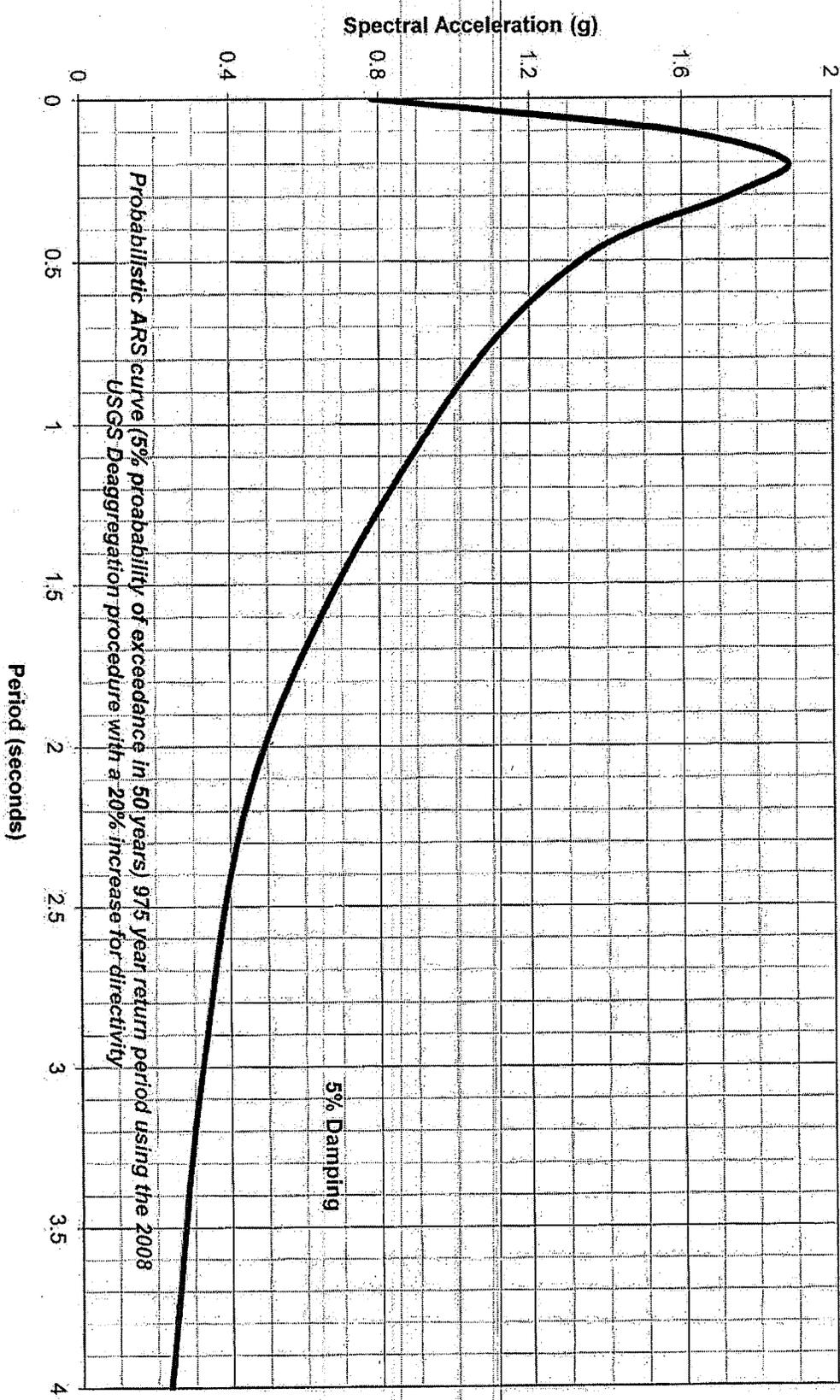


Figure 2

Salimi, Hossain@DOT

From: Merriam, Martha K@DOT  
Sent: Tuesday, August 20, 2013 1:29 PM  
To: Salimi, Hossain@DOT  
Cc: Ma, Gem-Yeu@DOT  
Subject: RE: Potential for fault rupture

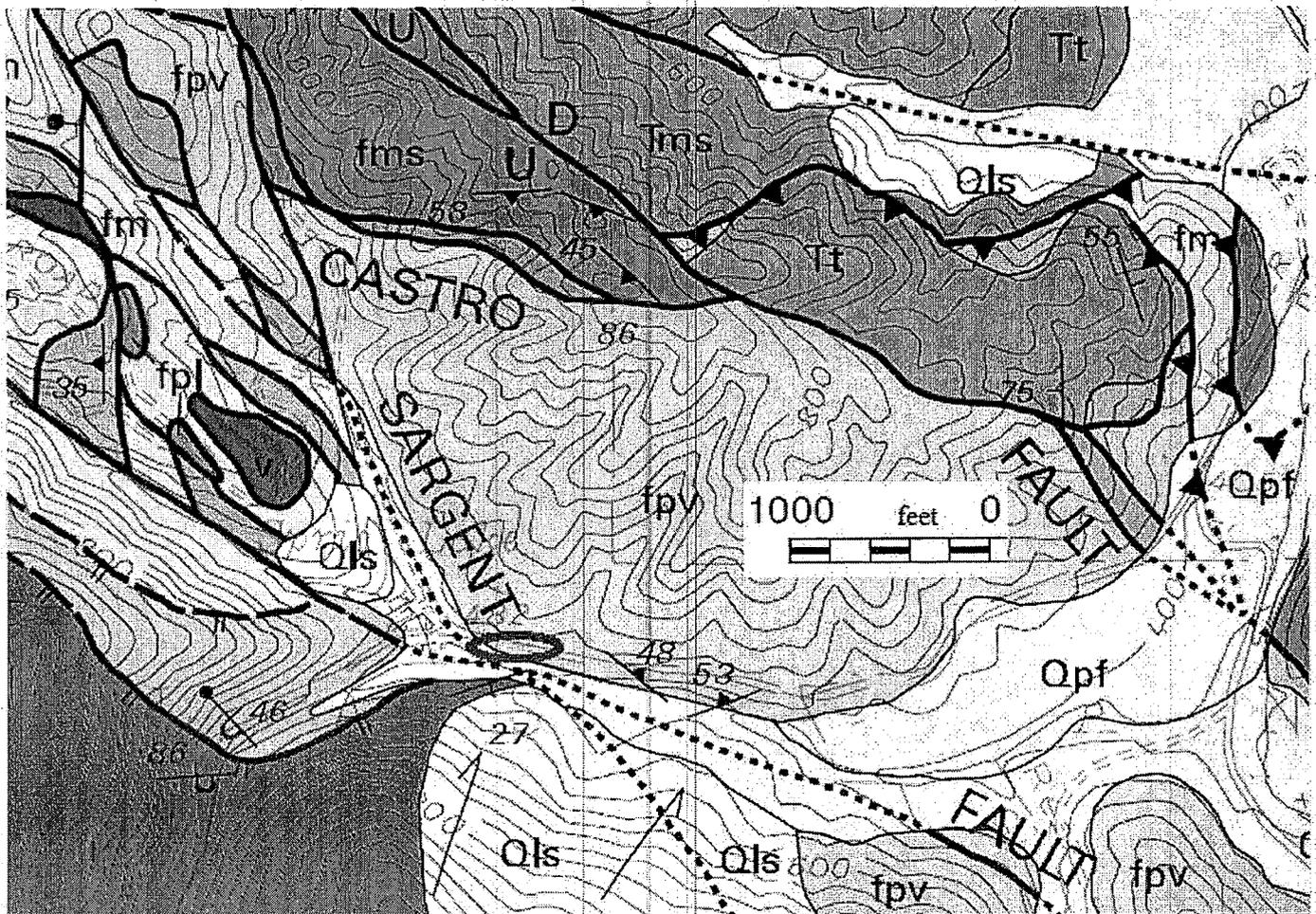
Dear Hossain,

Hope you are ok too. Your location is a very colorful one on the map!

More work would need to be done to determine where the fault will cross the wall. The mapped trace is very close to the location, and concealment by young landslide and fluvial materials makes the fault difficult to find here. However I think that unless this wall is a special build, we don't usually address surface rupture at a non-structure. You can say the wall may be damaged by rupture and suggest some engineering improvements such as closer spacing of supports in this area, but a fault study shouldn't be required. Let me know if it is considered a structure or there is some other reason to be wary of fault rupture and we will have to go have a look.

Here is the map I used: <http://pubs.usgs.gov/mf/2002/2373/mm-glmap.pdf>

And a print of the portion of interest – in the red circle:



Martha Merriam CEG.1957  
Geotechnical Support  
916-227-7135  
916-316-3925

**From:** Salimi, Hossain@DOT  
**Sent:** Tuesday, August 20, 2013 11:29 AM  
**To:** Merriam, Martha K@DOT  
**Subject:** Potential for fault rupture

Hi Martha,

Hope you are doing well. As usual, I have a question regarding fault rupture and hope you can help. I was asked to generate the seismic design recommendations for this site which is very close to Sargent Fault. I would appreciate your input regarding fault rupture potential. Thanks in advance.

Hossain

Hecker Pass Road Soldier Pile Wall  
37.00374 Long: -121.68024