INFORMATION HANDOUT

For Contract No. 04-4G5104
At 04-Sol-80-31.4, 32.6

Identified by
Project ID 0412000483

PERMITS

U.S. Fish and Wildlife Service, Informal Endangered Species Act Consultation on the Proposed Interstate 80 Meridian Road Overpass Retrofit and Midway Road Overpass Replacement Project, Solano County, California, dated July 7, 2014

United States Army Corps of Engineers Permit SPK-2-13-011117, dated January 27, 2016

WATER QUALITY

Central Valley Water Regional Water Quality Control Board, Clean Water Act §401 Technical Conditioned Water Quality Certification; California Department of Transportation, Meridian and Midway Overcrossing Seismic Retrofit and Replacement, dated March 25, 2016

Water Quality Information Handout, Contract No. 12000483, Meridian Road OC Retrofit & Midway Road OC Replacement, Solano County, Highway 80, 04-SOL-80-PM 31.3 & 32.60

MATERIALS INFORMATION

Revised Foundation Report for Midway Road Overcrossing Bridge Replacement, dated March 7, 2016

Final Seismic Design Recommendation, dated September 10, 2015

Solano Irrigation District, Construction Water

Asbestos and Lead-Containing Paint Survey Report, Sol-80, Midway Road and Meridian Road Overcrossing (23-0148 and 23-0147), Solano County, California, August 2016

United States Department of the Interior

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

In Reply Refer to:
08ESMF00-
2013-I-0579-1

JUL 7 2014

Mr. Hardeep Takhar
California Department of Transportation
Environmental Division, MS-8E
111 Grand Avenue
Oakland, California 94612

Subject: Informal Endangered Species Act Consultation on the Proposed Interstate 80 Meridian Road Overpass Retrofit and Midway Road Overpass Replacement Project, Solano County, California

Dear Mr. Takhar:

This is in response to the California Department of Transportation's (Caltrans) request for concurrence from the U.S. Fish and Wildlife Service (Service) that the proposed Interstate 80 (I-80) Meridian Road Overpass Retrofit and Midway Road Overpass Replacement Project may affect, but is not likely to adversely affect, endangered vernal pool tadpole shrimp (*Lepidurus packardi*) and threatened vernal pool fairy shrimp (*Branchinecta lynchi*). Our response is based on your March 3, 2014, request package; the 2012 and 2013 wet and dry season branchiopod sampling reports; an October 4, 2013 site visit; and additional project information included in your June 19, 2014 letter. This letter is issued under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*)(Act).

Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012. Effective, October 1, 2012, MAP-21 includes provisions to promote streamlined and accelerated project delivery. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (MOU). The MOU allows Caltrans to assume the Federal Highway Administration's (FHWA) responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for most highway projects in California. Caltrans is exercising this authority as the Federal nexus for section 7 consultation on this project.

Caltrans is proposing to seismically retrofit the Meridian Road I-80 Overcrossing (Bridge No. 23-0147) and to replace the Midway Road I-80 Overcrossing (Bridge No. 23-0148), in the northeast corner of the Vacaville city limit.

The project footprint for each overcrossing is contained within their respective existing cloverleaf. Both cloverleaf features are surrounded by actively managed agricultural fields. The landscaping within the cloverleaves includes various sized basins that have developed in to seasonal pools. The depressions are inundated by sheet flow and road runoff within the cloverleaf. No listed branchiopods were found in the features during Service-protocol level 2012-2013 wet season surveys and 2013 dry season surveys.

Construction for the Meridian Road Overcrossing retrofit is expected to begin in September 2017 with 130 working days anticipated for completion. The Midway Road Overcrossing replacement is expected to begin in December 2016 with 300 work days anticipated for completion. Staging and access for both projects will be contained within the existing cloverleaves.

Caltrans will implement the following conservation measures during construction of both overcrossing projects.

1. Prior to the start of construction, environmentally sensitive areas will be clearly delineated with high visibility orange fencing. The fencing will remain in place while construction activities are ongoing, and will be regularly inspected and fully maintained at all times. The final project plans will depict all locations where fencing will be installed and will provide installation specifications. The bid solicitation package special provisions will clearly describe acceptable fencing material and prohibited construction-related activities including vehicle operation, material and equipment storage, access roads and other surface disturbing activities beyond the described project boundary.

2. Prior to the start of construction, a Service-approved biologist will conduct an educational training program for all construction personnel including contractors and subcontractors. The training will include, at a minimum, a description of the listed branchiopods and migratory birds; an explanation of the status of these species and their protection under state and Federal laws; the avoidance measures to be implemented to protect natural resources; communication and work stoppage procedures in case listed species are observed within the action area; and the importance of maintaining and staying within the boundary fencing. A fact sheet conveying this information will be prepared and distributed to all construction personnel. Upon completion of the program, personnel will sign a form stating that they attended the program and understand all the avoidance measures.

3. Unoccupied nests (nests without birds or eggs) within the project footprint will be removed to deter birds from re-establishing nests. If occupied nests (nests with hatchlings or eggs) are present within the project footprint, work will be avoided within 50 feet of the nest of passerine species and 300 feet of raptor species. The Service and the California Department of Fish and Wildlife will be notified if an active nest is found.

4. Areas to be permanently or temporarily disturbed beyond the outside road shoulders or within the cloverleaves will be subject to a preconstruction survey by a Service-approved biologist. The Service-approved biologist will be onsite to monitor the initial ground disturbance in these areas. Work will be suspended if a listed species is discovered and Caltrans will contact the Service to determine if formal consultation should be initiated.

5. Storm Water Pollution Prevention Plans (SWPPP) and erosion control best management practices will be developed and implemented to minimize any wind or water-related erosion and will be in compliance with the requirements of the Regional Water Quality Control Board. The SWPPP will provide guidance for design staff to include provisions in construction contracts for measures to protect sensitive areas and 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 will be allowed into any storm drains or water courses;

    b. Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from watercourses, except at established commercial gas stations or established vehicle maintenance facility;

    c. Concrete wastes will be collected in washouts and water from curing operations will be collected and disposed;

    d. Spill containment kits will be maintained onsite at all times during construction operations and/or staging or fueling of equipment;

    e. Dust control measures will include use of water trucks and dust palliatives to control dust in excavation-and-fill areas, covering temporary access road entrances and exits with rock (rocking), and covering of temporary stockpiles when required by weather conditions;

    f. Coir rolls or straw wattles (without plastic or synthetic mono-filament netting) will be installed along or at the base of slopes during construction to capture sediment;

    g. Disturbed soil will be protected from erosion using a combination of silt fences, fiber rolls, etc. 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; and

    h. Permanent erosion control measures such as bio-filtration strips and swales to receive storm water discharges from the highway, or other impervious surfaces will be incorporated to the maximum extent practicable.

6. Caltrans will require the contractor to prepare a Rain Event Action Plan.

The Service agrees with Caltrans' determination that the proposed project may affect but is not likely to adversely affect the vernal pool tadpole shrimp or vernal pool fairy shrimp because: (1) the projects are located within the previously disturbed Caltrans' right-of-way; (2) the species were not found during protocol surveys of the two sites; (3) the seasonal pools within the two project sites are not hydrologically connected to other seasonal wetland habitat; and (4) Caltrans will implement a list of conservation measures to avoid adverse effects to potential branchiopod habitat in the vicinity.

Unless new information reveals effects of the proposed project that may affect listed species in a manner or to an extent not considered; or the project is modified in a manner that causes an effect

to the listed species that was not considered; or a new species or critical habitat is designated that may be affected by the proposed action, no further action pursuant to the Act, is necessary.

If you have questions concerning this letter, please contact John Cleckler, Caltrans Liaison (*john_cleckler@fws.gov*) or Ryan Olah, Coast-Bay/Forest Foothills Division Chief (*ryan_olah@fws.gov*), at the letterhead address, (916) 414-6600, or by electronic mail.

Sincerely,

E. Tattersall

Eric Tattersall
Deputy Assistant Field Supervisor

cc:
Melissa Escaron, California Department of Fish and Wildlife, Napa, California
Chris States and Andy Amacher, Caltrans District 4, Oakland, California

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF.

January 27, 2016

Regulatory Division (SPK-2013-01117)

California Department of Transportation
Attn: Mr. Osama Elhamshary
111 Grand Avenue
Oakland, California 94623

Dear Mr. Elhamshary:

We are responding to your November 19, 2015 request for a Department of the Army permit for the SR80 Midway Road Bridge Replacement (EA 04-4G510) project. The approximately 24.1-acre project site is located on Interstate 80 at the Midway Road overcrossing, Latitude 38.416345°, Longitude -121.897468°, Solano County, California.

Based on the information you provided to this office, the project involves the replacement of the Midway Road Bridge, in accordance with the plans included in your November 19, 2015 Pre-construction Notification. These activities will result in the permanent loss of approximately 0.146 acres of wetland and stream habitats and temporary impacts to approximately 0.03 acres of stream habitat.

We have determined activities in waters of the U.S. associated with the project are authorized by Nationwide Permit Number (NWP) NWP 14 Linear Transportation Projects. However, this authorization is denied without prejudice until water quality certification under Section 401 of the Clean Water Act has been issued or waived for the activities requiring a permit from this office. Once you receive water quality certification or waiver thereof, the activities are authorized and the work may proceed subject to the any conditions of water quality certification, and the terms and conditions of the NWP.

You must comply with all terms and conditions of the NWP, applicable regional conditions, and project-specific special conditions. Information about the NWP and regional conditions are available on our website at *www.spk.usace.army.mil/Missions/Regulatory/Permitting/NationwidePermits.aspx*. In addition, your work must comply with the following special conditions:

1. To mitigate for the permanent loss of 0.146 acres of waters of the United States and temporary impacts to 0.03 acres of waters of the United States, you shall purchase 0.23 credits of vernal pool/seasonal wetland creation habitat at Elsie Gridley mitigation bank. Evidence of this purchase shall be provided to the Corps prior to initiation of construction activities within waters of the U.S.

2. You shall restore all temporary impacts to waters of the U.S. and adjacent upland areas to their original contour and condition within 30 days following completion of construction activities. In order to ensure compliance with this condition, you shall:

a. Prior to initiation of any construction activities within waters of the U.S., submit to the Corps, for review and approval, a plan for the restoration of temporary impact areas prior to initiation of any construction activities. You shall include the following information within this plan:

(1) A description of and drawings showing the existing contours (elevation) and existing vegetation of the temporary impact areas. This information shall include site photographs taken of the temporary impact area. For linear projects, these photographs shall be taken from the alignment, in both directions and taken every 50-feet for the length of the temporary impact area;

(2) The methods used to restore the site to the original contour and conditions, as well as a plan for the revegetation of the site following construction activities;

(3) The proposed schedule for the restoration activities, and;

(4) A mitigation and monitoring plan, to be approved by the Corps, for the temporary impact area to ensure success of the restoration. Monitoring shall be conducted for a minimum of three growing seasons after completion of restoration activities. The plan shall be presented in the format of the Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for the South Pacific Division, which can be found online at http://www.spd.usace.army.mil/Portals/13/docs/regulatory/mitigation/MitMon.pdf.

b. Within 30 days following completion of restoration activities, submit to the Corps a report describing the restoration activities including color photographs of the restored area. The compass angle and position of all photographs shall be consistent with the pre-construction photographs.

c. Submit to the Corps a Monitoring Report by October 1 of each year of required monitoring period. This report shall be submitted in the format identified in the Final 2015 Regional Compensatory Mitigation and Monitoring Guidelines for the South Pacific Division, which can be found online at http://www.spd.usace.army.mil/Portals/13/docs/regulatory/mitigation/MitMon.pdf.

3. You shall clearly identify the limits of disturbance in the field with highly visible markers (e.g. construction fencing, flagging, silt barriers, etc.) prior to commencement of construction activities within waters of the U.S. You shall maintain such identification properly until construction is completed and the soils have been stabilized. You are prohibited from any activity (e.g. equipment usage or materials storage) that impacts waters of the U.S. outside of the permit limits (as shown on the January 8, 2016 revision of Figure 1a, Wetland Impacts at Midway Road Overcrossing).

4. You shall notify the Corps of the start and completion dates of the authorized work within 30 calendar days of the initiation of construction and 30 calendar days following completion of the construction activities.

5. You are responsible for all work authorized herein and ensuring that all contractors and workers are made aware and adhere to the terms and conditions of this permit authorization. You shall ensure that a copy of the permit authorization and associated

drawings are available for quick reference at the project site until all construction activities are completed.

6. To ensure your project complies with the Federal Endangered Species Act, you must implement all of the mitigating measures proposed as part of your project description, which are identified in the U.S. Fish and Wildlife Service letter of concurrence (08ESMF00-2013-I-0579-1 , dated July 7, 2014). If you are unable to implement any of the proposed measures, you must immediately notify the Corps and the U.S. Fish and Wildlife Office.

Within 30 days after completion of the authorized work, you must sign the enclosed Compliance Certification and return it to this office.

This verification supersedes our January 22, 2016, letter of authorization and is valid until March 18, 2017, when the existing NWPs are scheduled to be modified, reissued, or revoked. Furthermore, if you commence or are under contract to commence this activity before the date the NWP is modified, reissued, or revoked, you will have 12 months from the date of the modification, reissuance or revocation to complete the activity under the present terms and conditions. Failure to comply with the general and regional conditions of this NWP, or the project-specific special conditions of this authorization, may result in the suspension or revocation of your authorization.

We would appreciate your feedback on this permit action including your interaction with our staff. At your earliest convenience, please tell us how we are doing by completing the Corps' Regulatory Program national customer service survey found on our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Please refer to identification number SPK-2013-01117 in any correspondence concerning this project. If you have any questions, please contact William Ness at 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at *William.W.Ness@usace.army.mil*, or telephone at 916-557-5268.

Sincerely,

Paul Maniccia

Paul Maniccia
Chief, Enforcement and Special Projects Unit

Enclosure

cc: (w/o encl)

Andrew Amacher, California Department of Transportation, Andrew.amacher@dot.ca.gov

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

25 March 2016

Osama Elhamshary
California Department of Transportation
111 Grand Avenue
Oakland, CA 94623

CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION; CALIFORNIA DEPARTMENT OF TRANSPORTATION, MERIDIAN AND MIDWAY OVERCROSSING SEISMIC RETROFIT AND REPLACEMENT (04-EA5G510/PROJECT ID 0412000483) PROJECT (WDID #5A48CR00142), SOLANO COUNTY

ACTION:

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

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This Order serves as a Water Quality Certification (Certification) action that is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to § 13330 of the California Water Code and § 3867 of the California Code of Regulations (CCR).

2. This certification action is not intended and shall not be construed 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 pursuant to 23 CCR § 3855(b) of the California Code of Regulations, and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required § 3833 of the California Code of Regulations.

3. The California Department of Transportation shall maintain a copy of this Certification and supporting documentation (Project Information Sheet) at the Project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors) performing work on the proposed Project shall be adequately informed and trained regarding the conditions of this Certification.

4. The California Department of Transportation shall perform surface water sampling:
   a) when performing any in-water work;
   b) in the event that project activities result in any materials reaching surface waters; or
   c) when any activities result in the creation of a visible plume in surface waters.

   The monitoring requirements in Table 1 shall be conducted by taking a sample of the ambient conditions before work begins in the work area, and sampling during work in the work area. The sampling frequency may be modified for certain projects with written approval from Central Valley Water Board staff.

Table 1:

Parameter	Unit	Type of Sample	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Grab(1)	Every 4 hours during in-water work	(4)
Settleable Material	mL/L	Grab(1)	Every 4 hours during in-water work	(2)
Visible construction related pollutants (3)	Observations	Visual Inspections	Continuous throughout the construction period	—

(1) Grab samples shall be taken at mid-depth and be collected at the same time each day to get a compete representation of variations in the receiving water.
(2) Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant.
(3) Visible construction-related pollutants include oil, grease, foam, fuel, petroleum products, and construction-related, excavated, organic or earthen materials.
(4) A hand-held field meter may be used, provided that the meter utilizes a USEPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring required by this Certification shall be maintained at the Project site.

As appropriate, surface water monitoring shall occur at mid-depth. A surface water monitoring report shall be submitted to the Central Valley Water Board Contact indicated in this Certification within two weeks of initiation of sampling and every two weeks thereafter. In reporting the monitoring data, the California Department of Transportation shall arrange the data in tabular form so that the sampling locations, date, constituents, and concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the Project complies with Certification requirements. The report shall include surface water sampling results, visual observations, and identification of the

related potentially hazardous substances should be stored within a floodplain or within 300 feet of a waterway. The California Department of Transportation must perform frequent inspections of construction equipment prior to utilizing it near surface waters to ensure leaks from the equipment are not occurring and are not a threat to water quality.

8. The California Department of Transportation shall develop and maintain onsite a project-specific Spill Prevention, Containment and Cleanup Plan outlining the practices to prevent, minimize, and/or clean up potential spills during construction of the Project. The Plan must detail the Project elements, construction equipment types and location, access and staging and construction sequence. The Plan must also address the potential of responding to a spill or prevention of spills occurring within the Project site.

9. Asphalt, drilling fluids, lubricants, paints, coating material, oil, petroleum products, or any other substances which could be hazardous to fish and wildlife resulting from or disturbed by project-related activities, shall be prevented from contaminating the soil and/or entering surface waters. Concrete must completely be cured before coming into contact with surface waters. Surface water that contacts wet concrete must be pumped out and disposed of at an appropriate off-site commercial facility, which is authorized to accept concrete wastes.

10. Creosote-treated wood products or any other treated wood products that are highly flammable and/or toxic to aquatic life shall not be installed in surface waters. A method of containment must be used below the bridge(s), boardwalk(s), and/or temporary crossing(s) to prevent debris from falling into the water body as feasible.

11. An effective combination of erosion and sediment control Best Management Practices (BMPs) shall be implemented and adequately working during all phases of construction.

12. All areas disturbed by Project activities shall be protected from washout or erosion.

13. All temporarily affected areas shall be restored to pre-construction contours and conditions upon completion of construction activities.

14. This Certification does not allow permanent water diversion of flow from the receiving water. This Certification is invalid if any water is permanently diverted as a part of the Project.

15. The California Department of Transportation shall apply for a name change or amendment to this Certification should any of the following occur:

    a) a change in the ownership of all or any portion of the Project;

    b) any change in the Project description;

    c) any change involving discharge amounts, temporary impacts, and/or permanent impacts; and/or

    d) amendments, modifications, revisions, extensions, and/or changes to the United States Army Corps of Engineers' Nationwide Permit #14 (Linear Transportation), the

inspection, including taking photographs and securing copies of Project-related records, for the purpose of assuring compliance with this Certification and determining the ecological success of the Project.

20. The California Department of Transportation shall provide evidence of all on-site and off-site compensatory mitigation requirements, including, but not limited to, the purchase of mitigation credits or payment of in-lieu fees as required by the United States Army Corps of Engineers prior to commencing construction to the Central Valley Water Board.

    Compensatory mitigation must comply with the effective policy at the time of Certification, which ensures no overall net loss of wetlands for impacts to waters of the State.

21. Staff of the Central Valley Water Board has prepared total maximum daily load (TMDL) allocations that, once approved, would limit methylmercury in storm water discharges to the Sacramento-San Joaquin Delta. The Central Valley Water Board has scheduled these proposed allocations to be considered for adoption. When the Central Valley Water Board adopts the TMDL and once approved by the Environmental Protection Agency, the discharge of methylmercury may be limited from the proposed project. The purpose of this condition is to provide notice to the California Department of Transportation that methylmercury discharge limitations and monitoring requirements may apply to this project in the future and also to provide notice of the Central Valley Water Board's TMDL process and that elements of the planned construction may be subject to a TMDL allocation.

22. The California Department of Transportation shall provide the Central Valley Water Board Contact indicated in this Certification a Notice of Completion (NOC) no later than 30 days after the Project completion. The NOC shall demonstrate that the project has been carried out in accordance with the project description in the Certification and in any amendments approved. The NOC shall include a map of the project location(s), including final boundaries of any on-site restoration area(s), if appropriate, and representative pre and post construction photographs. Each photograph shall include a descriptive title, date taken, photographic site, and photographic orientation

STORM WATER QUALITY CONDITIONS:

The California Department of Transportation shall also satisfy the following additional storm water quality conditions:

1. The California Department of Transportation shall obtain coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ, as amended, for discharges to surface waters comprised of storm water associated with construction activity, including, but not limited to, demolition, clearing, grading, excavation, and other land disturbance activities of one or more acres, or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres.

WATER QUALITY CERTIFICATION:

I hereby issue an Order certifying that any discharge from the California Department of Transportation, Meridian and Midway Overcrossing Seismic Retrofit and Replacement Project (WDID# 5A48CR00142) will comply with the applicable provisions of §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 under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)."

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 compliance with conditions of this Certification, the California Department of Transportation's application package, and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the *Water Quality Control Plan for the Sacramento River and San Joaquin River*, Fourth Edition, revised June 2015 (Basin Plan).

Any person aggrieved by this action may petition the State Water Quality Control Board to review the action in accordance with California Water Code § 13320 and California Code of Regulations, Title 23, § 2050 and following. The State Water Quality Control Board must receive the petition by 5:00 p.m., 30 days after the date of this action, except that if the thirtieth day following the date of this action falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Quality Control Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

(for) Pamela C. Creedon
Executive Officer

DLW:sjs

Enclosure: Water Quality Order No. 2003-0017 DWQ

cc w/o enclosures: Ms. Mary Pakenham-Walsh, U.S. Army Corp of Engineers, Sacramento
Department of Fish and Wildlife, Region 2, Rancho Cordova
U.S. Fish and Wildlife Service, Sacramento
Mr. Bill Jennings, CALSPA, Stockton
Cyrus Vafai, Oakland

cc w/o Enclosures by email: U.S. EPA, Region 9, San Francisco
Mr. Bill Orme, SWRCB, Certification Unit, Sacramento

1. **Midway Road Overcrossing (PM 32.62):**
Caltrans will remove and replace the existing four span bridge (precast reinforced-concrete "I" girder) with a two span bridge (PCC cast-in-place box culvert). A jackhammer attached to an excavator and circular saw will be used to demolish the existing bridge, columns and abutment walls into manageable pieces to haul away by dump trucks. Once all the bridge decks are removed and precast reinforced-concrete "I" girders exposed, a crane will be used to remove and load the precast reinforced-concrete "I" girders onto trucks to haul away. The existing bridge including PCC abutment walls, precast reinforced-concrete "I" girders, and columns will be demolished, removed, salvaged, and/or disposed of by the contractor at approved facilities. Contract can elect to use a debris protection net that meets the Caltrans Standard Specification to catch falling objects.

The new two span bridge (PCC cast-in-place box culvert) will be constructed at the same location and profile (same alignment and elevation) to replace the old bridge. The width of the new bridge will be 54'4", which is 20'4" wider than the existing bridge of 34 ft. width. The increase in width of the new bridge is to accommodate for the 8-ft-wide Class II Bike Lane, 6-ft-wide sidewalk and Concrete Barrier Type 26 with Chain Link Railing Type 7. The new bridge will be 266'-7.5" long, 7.5" inches longer than the existing bridge of 266 ft. length.

Existing Abutments 1 and 5 will be removed (salvaged and/or disposed of by the contractor at approved facilities) and replaced with new abutments. New PCC approach slabs will be installed at the abutments on the new bridge. Approximately 30 piles (precast reinforced concrete piles approximately. 12-in diameter) at each abutment will be driven into the ground to a depth of 25 to 60 ft. to support the new abutment footing. Once all piles have been driven into the ground, the falsework for abutment walls will be formed for the new PCC cast-in-place abutment walls. After PCC curing and removal of the falsework, structural backfill will be used to fill to the height of the abutment walls where the new bridge sits on, and the new PCC approach slabs and AC pavement built on, transitioning between ramps and the new bridge.

In the I-80 median, approximately 40 piles (20 piles for each footing) will be driven into the ground to a depth of 25 to 70 ft. for Bent 2 footings. Two footings in the I-80 median will be constructed for the two bridge column supports. Once all piles have been driven into the ground, falsework for footings and columns (Bent 2) will be formed to construct the new bent. After completion of PCC curing and falsework removal at Bent 2, falsework for the new bridge will be formed for the new cast-in-place box culvert bridge. Approximately 100 piles will be driven into the ground using a hydraulic pile hammer for the bridge footings (abutment footings and bent footing). Drainage systems will be installed in the bridge, around abutments and bents for erosion control purposes. After PCC curing and falsework removal of the new bridge, the new abutments and bent will be graded and landscaped.

The bridge will be closed and traffic will be detoured to the Meridian Road OC until completion of this work. Additional ROW will be required for the construction of the new bridge.

The anticipated equipment used for removal and construction of the Midway Road OC may include, but is not limited to, crawler-mounted crane, hydraulic pile hammer, truck-mounted drill auger, crawler-mounted drill auger, AC paver, AC roller, haul truck, concrete truck, concrete pump truck, loader, compactor, circular saw, dump trucks, excavator, and jackhammer.

Status of CEQA Compliance: The California Department of Transportation has determined that this project meets the Categorical Exemption, under §15300 of the California Code of Regulations, which exempts Class 2: Replacement or Reconstruction. This exemption consists of replacement or reconstruction of existing buildings and water supply facilities where the new structure will be located on the same site as the structure to be replaced and will have substantially the same purpose and capacity as the structure replaced.

(a) Repair or replacement of water service connections, meters, and valves for backflow prevention, air release, pressure regulating, shut-off and blow-off or flushing.
(b) Replacement or reconstruction of existing water supply distribution lines, storage tanks and reservoirs of substantially the same size.
(c) Replacement or reconstruction of water wells, pump stations and related appurtenances of the same size and capacity. The well to be replaced must be properly destroyed or otherwise secured to prevent tampering, entry of foreign material or vertical migration of any contaminants.

Compensatory Mitigation: As required by the United States Army Corps of Engineers, the California Department of Transportation will purchase mitigation credits of 0.23 acres of created freshwater marsh habitat to mitigate for 0.176 acres of impacts to waters of the United States.

Evidence of this purchase shall be provided to the Central Valley Water Board prior to proceeding with the activity authorized by this Certification.

Application Fee Provided: A total fee of $9,066.00 was submitted on 24 February 2016 to the Central Valley Water Board as required by § 3833(b)(3)(A) and § 2200(a)(3) of the California Code of Regulations.

WATER QUALITY INFORMATION HANDOUT
CONTRACT NO. 12000483

Meridian Road OC Retrofit &
Midway Road OC Replacement
Solano County Highway 80
04-SOL-80-PM 31.3 & 32.60

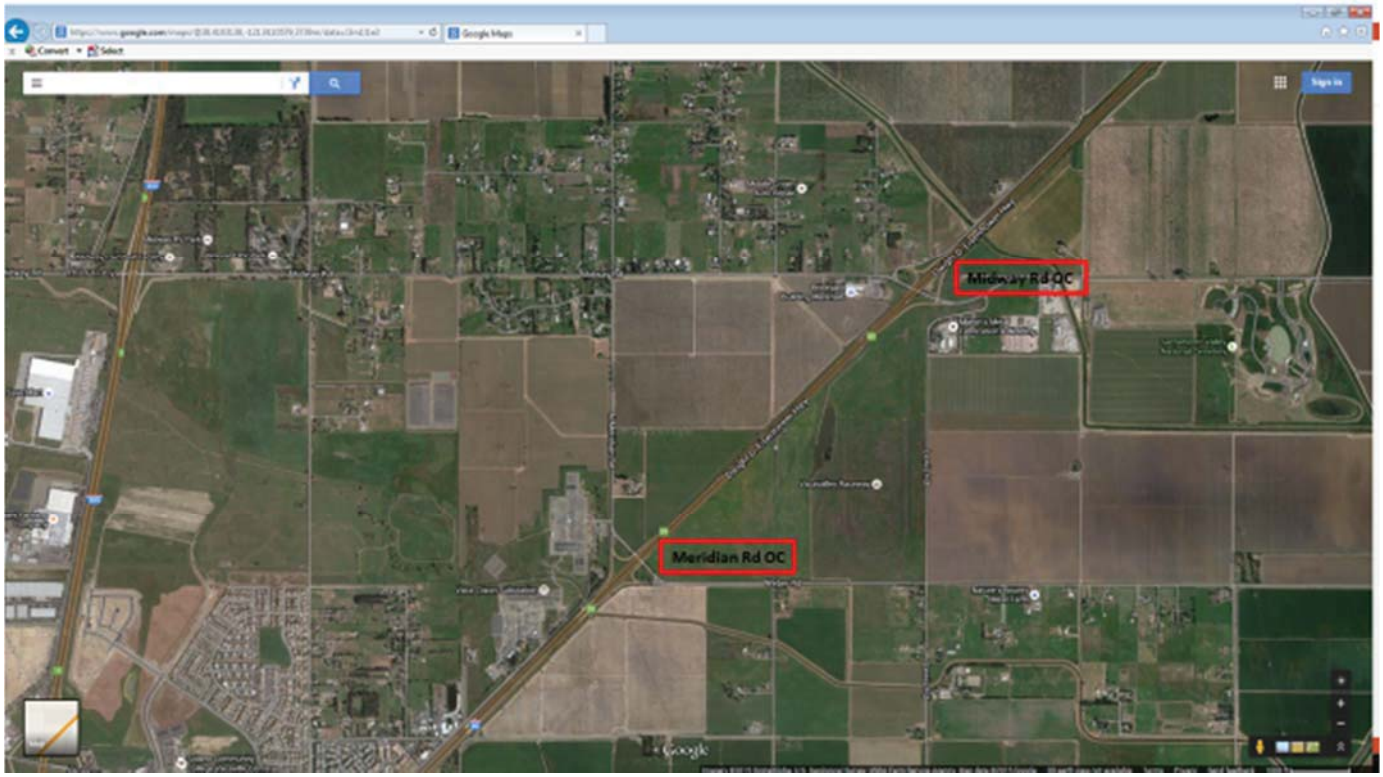
California Department of Transportation
District 4, 111 Grand Avenue
Oakland, CA 94612

Water Quality Information

Disclaimer

A “Disclaimer” is required specifying that the information provided in the Storm Water Information Handout is just a guideline and is to be used for information purposes only and should not be considered a sole source document to adhere to the requirements of the new National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP), Number CAS000002, adopted on September 2, 2009. The contractor is required to provide water quality monitoring, sampling and implement best management practices (BMPs) based on standard industry operations, field conditions and conditions encountered based on the contractor’s means and methods. The information in this handout is not to be construed in any way as a waiver of the provisions in the CGP. Bidders and contractors are cautioned to make independent investigations and examinations as they deem necessary to satisfy the conditions encountered in performance of work, with respect to the following: sampling and monitoring locations, distribution of watershed areas for sizing of BMPs, and selection of BMPs in order to conform to the requirement of the contract documents and the CGP.

Project Vicinity


Midway Rd OC
Meridian Rd OC

Risk Assessment

Sediment Risk Factor Worksheet	Entry

A) R Factor

Analysis of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.

http://water.epa.gov/polwaste/npdes/stormwater/Welcome-to-the-Rainfall-Erosivity-Factor-Calculator.cfm

R Factor Value	70.68

B) K Factor (weighted average, by area, for all site soils)

The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.

Site-specific K factor guidance

K Factor Value	0.37

C) LS Factor (weighted average, by area, for all slopes)

The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.

LS Table

LS Factor Value	0.12

Watershed Erosion Estimate (=RxKxLS) in tons/acre	3.138192
Site Sediment Risk Factor Low Sediment Risk: < 15 tons/acre Medium Sediment Risk: >=15 and <75 tons/acre High Sediment Risk: >= 75 tons/acre	**Low**

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?: http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml **OR** A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan) http://www.waterboards.ca.gov/waterboards_map.shtml	**yes**	**High**
Region 1 Basin Plan Region 2 Basin Plan Region 3 Basin Plan Region 4 Basin Plan Region 5 Basin Plan Region 6 Basin Plan Region 7 Basin Plan Region 8 Basin Plan Region 9 Basin Plan		

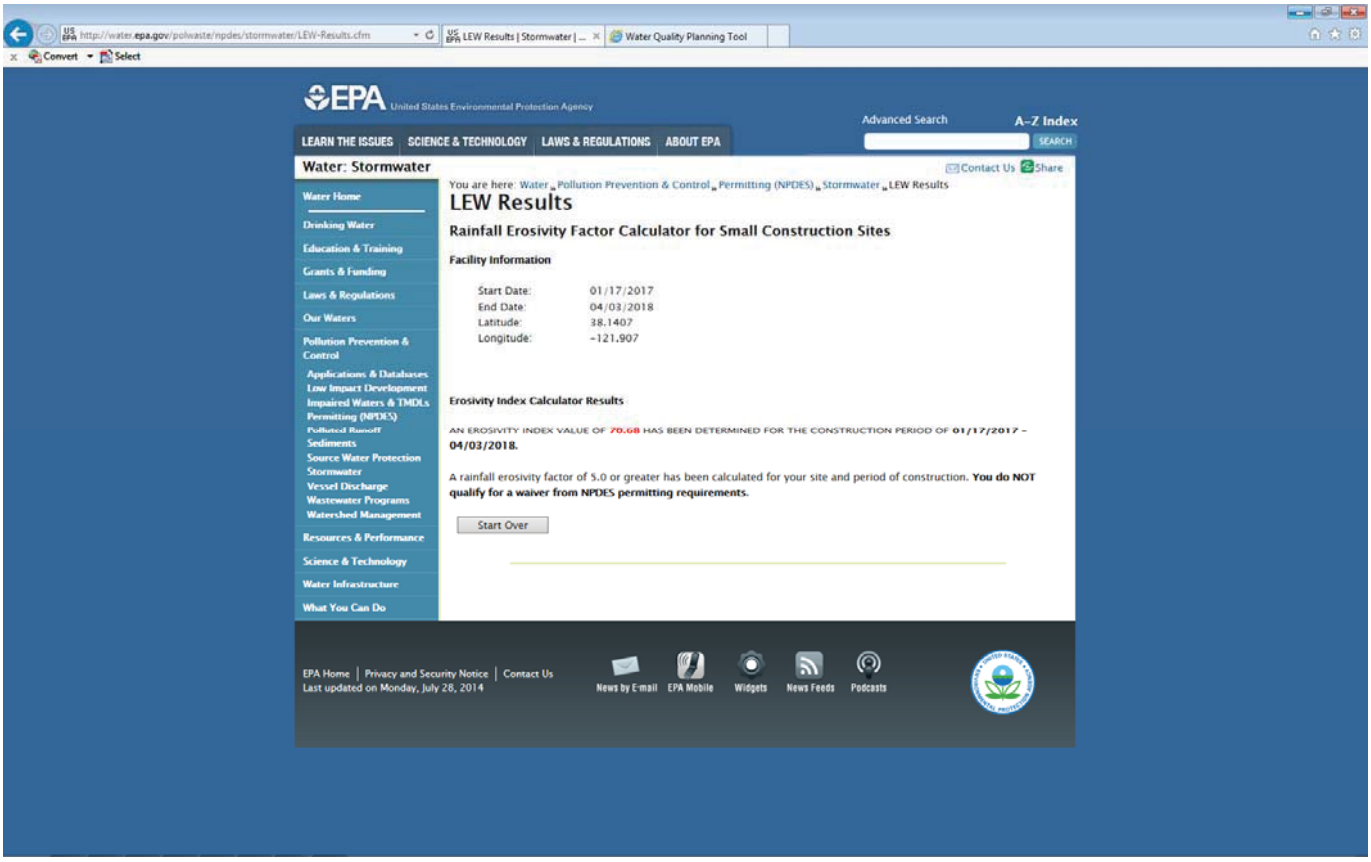
Combined Risk Level Matrix

Receiving Water Risk	Sediment Risk: Low	Sediment Risk: Medium	Sediment Risk: High
Low	Level 1	Level 2	
High	Level 2		Level 3

Project Sediment Risk: Low

Project RW Risk: High

Project Combined Risk: Level2



Rainfall Data

Rainfall Intensity can be obtained by the following link:

http://www.wrcc.dri.edu/pcpnfreq/nca5y24.gif

Refer to chapters 800, Highway Drainage Design of Highway Design Manual for information on runoff coefficient and shed map. The weighted runoff coefficient of 0.55 is recommended for the project area.

Permits

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

December 23, 2014

Regulatory Division (SPK-2013-01117)

State of California
Department of Transportation, District 4,
Division of Environmental Planning & Engineering
Attn: Mr. Christopher States
Post Office Box 23660
Oakland, California 94623-0660

Dear Mr. States:

We are responding to your November 21, 2013, request for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for the State Route (SR) 80 Meridian Road Bridge Rehab and Midway Road Bridge Replacement (EA 04-4G510) site. On January 24, 2014, we determined that your delineation was incomplete, and sent an email requesting additional information. On June 25, 2014, we received the requested additional information and we determined that your delineation was complete.

The approximately 34.29-acre site is located on SR 80 at its intersections with Meridian Road and Midway Road, in Section 31, Township 7 North, Range 1 East, Mount Diablo Meridian, Latitude 38.410940°, Longitude -121.904561°, Solano County, California.

Based on available information, we concur with the amount and location of wetlands site as depicted on the enclosed March 7, 2014, *Figure 3-1, Potential Waters of the U.S., Meridian Road* and *Figure 3-2, Potential Waters of the U.S., Midway Road* drawings. The approximately 1.243 acres of wetlands present within the survey area are potential waters of the United States regulated under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act.

We have enclosed a copy of the *Preliminary Jurisdictional Determination Form* for this site. Please sign and return a copy of the completed form to this office. Once we receive a copy of the form with your signature we can accept and process a Pre-Construction Notification or permit application for your proposed project.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary.

You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular site identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Please refer to identification number SPK-2013-01117 in any correspondence concerning this project. If you have any questions, please contact Jason Deters at our California South Branch Office, 1325 J Street, Room 1350, Sacramento, California 95814-2922, by email at *Jason.Deters@usace.army.mil*, or telephone at 916-557-7152. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,

Mary R. Pickenham-Wolth

for Kathleen A. Dadey, Ph.D
Chief, CA South Branch
Regulatory Division

Enclosures

cc: (w/o encls)

Jason Brush, Chief, U.S. Environmental Protection Agency, Region IX, Wetlands Regulatory Office (WTR-8), brush.jason@**epa**.gov
Ms. Elizabeth Lee, California Regional Water Quality Control Board, Central Valley Region, Fresno Branch Office, emlee@**waterboards.ca.gov**

PRELIMINARY JURISDICTIONAL DETERMINATION FORM
Sacramento District

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Regulatory Branch: **California South** File/ORM #: **SPK-2013-01117** PJD Date: **December 23, 2014**

State: **CA** City/County: **, Solano County** Nearest Waterbody: Location (Lat/Long): **38.4109408422072°, -121.904561410281°** Size of Review Area: **34.29** acres	Name/Address Of Property Owner/ Potential Applicant: **State of California, Department of Transportation, District 4** **Office of Biological Sciences and Permits** **P.O. Box 23660** **Oakland, California 94623-0660**
Identify (Estimate) Amount of Waters in the Review Area **Non-Wetland Waters:** linear feet ft wide acre(s) Stream Flow: **N/A** **Wetlands: 1.243** acre(s) Cowardin Class: **Palustrine, emergent**	Name of any Water Bodies on the site identified as Section 10 Waters: Tidal: Non-Tidal: ☒ Office (Desk) Determination ☐ Field Determination: Date(s) of Site Visit(s):

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply – checked items should be included in case file and, where checked and requested, appropriately reference sources below)

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
- ☐ Data sheets prepared by the Corps.
- ☐ Corps navigable waters' study.
- ☒ U.S. Geological Survey Hydrologic Atlas:
  - ☒ USGS NHD data.
  - ☒ USGS HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24K; CA-ALLENDALE**
- ☐ USDA Natural Resources Conservation Service Soil Survey.
- ☒ National wetlands inventory map(s).
- ☐ State/Local wetland inventory map(s).
- ☐ FEMA/FIRM maps.
- ☐ 100-year Floodplain Elevation (if known):
- ☒ Photographs: ☒ Aerial ☒ Other
- ☐ Previous determination(s). File no. and date of response letter:
- ☒ Other information (please specify): **DWR CVFED LiDAR**

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

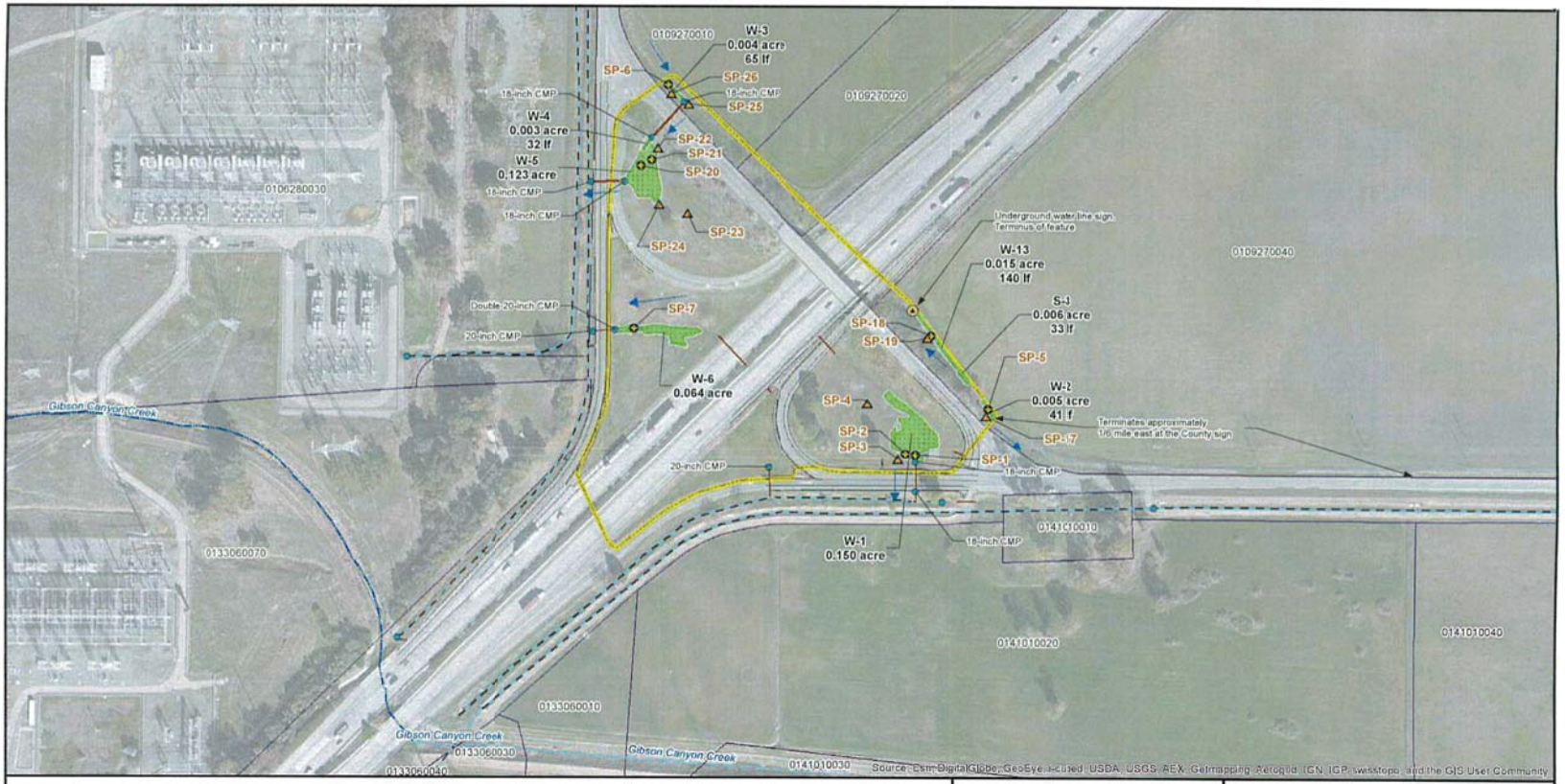
Jason Dutton 12/23/2014
Signature and Date of Regulatory Project Manager (REQUIRED)

1.9.15
Signature and Date of Person Requesting Preliminary JD (REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.



Legend

- USACE Verification Boundary (10.19 acres) (Environmental Study Limits)
- Existing Road
- Culverts
- Contours
- Direction of Flow
- Solano County Parcels
- Wetlands (0.372 acre)

NHD Flowline

- Artificial Path
- Canal / Ditch
- Stream / River

Note:
1. Delineation has been conducted in accordance with the 1987 "Corps of Engineers Wetlands Delineation Manual"
2. Acreages and lengths are listed only for portions of features within the USACE Verification Boundary
3. Delineators: Yolanda Molette, Holly Barbare April 17, 2013 revised March 7, 2014

N

0 200 400
Feet

FIGURE 3-1
POTENTIAL WATERS OF THE U.S.
MERIDIAN ROAD
Meridian Road Bridge Rehabilitation and
Midway Road Bridge Replacement Project
EA: 04-4G510, 04-SOL-80-PM 31.36 and 32.62
Solano County, California

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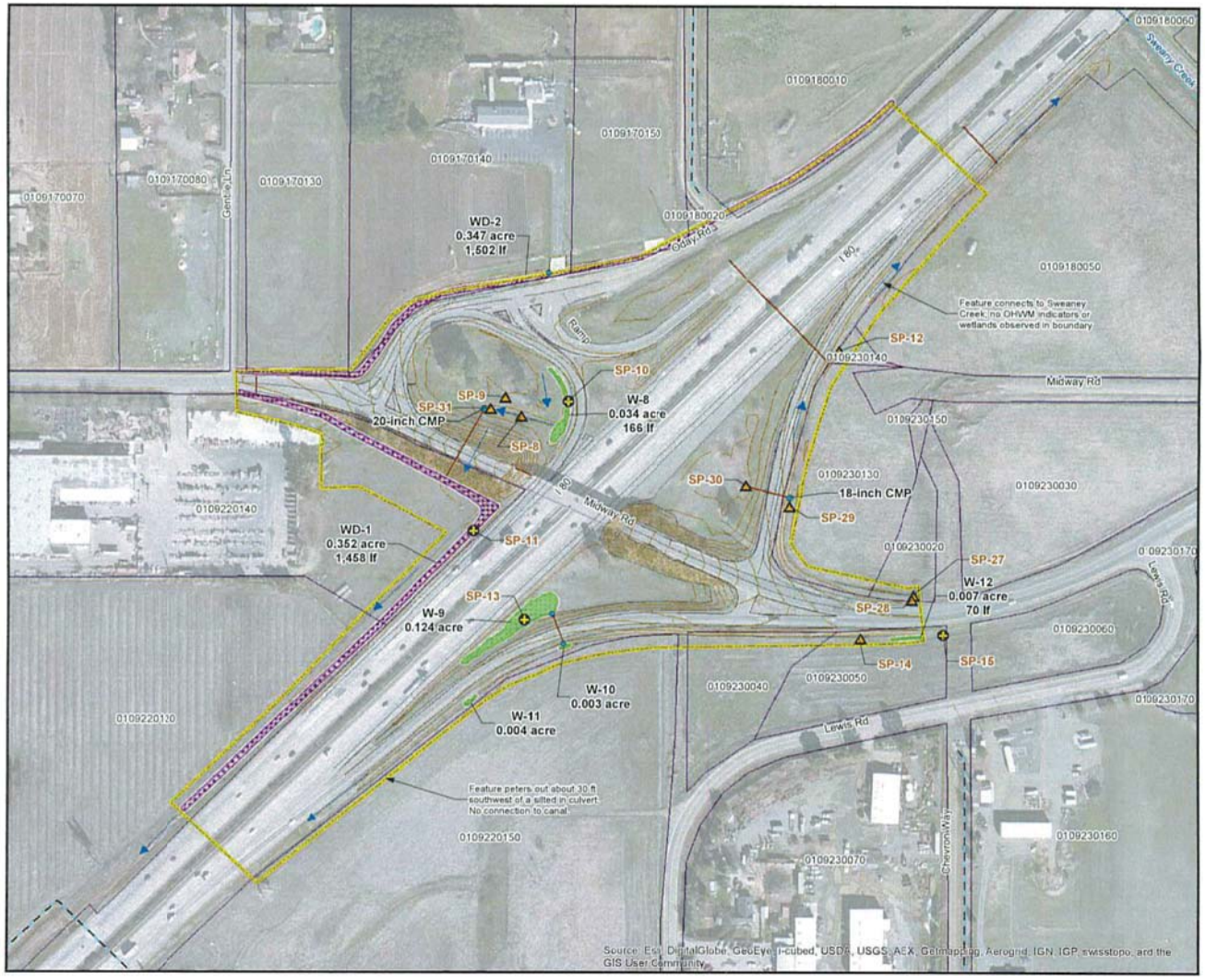


Legend

- USACE Verification Boundary (24.1 acres) (Environmental Study Limits)

NHD Flowline

- Artificial Path
- Canal / Ditch
- Stream / River
- Wetland Sample Point
- Upland Sample Point
- Culvert Inlet / Outlet
- Wetlands (0.172 acre)
- Wetland Ditch (0.699 acre)
- Flow Direction
- Existing Road
- Culverts
- Contours
- Solano County Parcels

Note:

1. Delineation has been conducted in accordance with the 1987 "Corps of Engineers Wetlands Delineation Manual"
2. Acreages and lengths are listed only for portions of features within the USACE Verification Boundary
3. Delineators: Yolanda Molette, Helly Barbare April 17, 2013 revised March 7, 2014

N

0 200 400
Feet

FIGURE 3-2
POTENTIAL WATERS OF THE U.S.
MIDWAY ROAD
Meridian Road Bridge Rehabilitation and
Midway Road Bridge Replacement Project
EA: 04-4G510, 04-SOL-80-PM 31.36 and 32.62
Solano County, California

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: California Department of Transportation, District 4, Office of Biological Sciences and Permits Attn: Mr. Christopher States	File No.: SPK-2013-01117	Date: December 23, 2014
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at *http://www.usace.army.mil/cecw/pages/reg_materials.aspx* or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer (address on reverse). This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:

Jason C. Deters
Project Manager, CA South Branch
Regulatory Division
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814-2922
Phone: 916-557-7152, FAX 916-557-7803
Email: Jason.Deters@usace.army.mil

If you only have questions regarding the appeal process you may also contact:

Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: 415-503-6574, FAX 415-503-6646)
Email: Thomas.J.Cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of appellant or agent.	Date:	Telephone number:

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Serious drought
Help Save Water!

To: MS. KELLY HOLDEN
Office Chief
Office of Bridge Design West

Date: March 7, 2016

Attention: Richard Melko
Isaias Yalan

File: 04-SOL-80 (PM 32.6)
EA 04-4G5101
E-FIS 0412000483
Midway Road Overcrossing

From: SUNNY YANG
Transportation Engineer
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

RON KARPOWICZ
Engineering Geologist
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

CHRIS RISDEN
Chief, Branch B
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : **REVISED FOUNDATION REPORT FOR MIDWAY ROAD OVERCROSSING BRIDGE REPLACEMENT**

This revised Foundation Report (FR) supersedes all our previous FRs due to minor changes in pile data tables. This FR provides final foundation recommendations for replacement of Midway Road Overcrossing Bridge (existing Bridge Number 23-0148, new bridge number 23-0254). See attached General Plan. This bridge is on I-80, PM 32.6, in the City of Vacaville, Solano County (Figure 1, Vicinity Map).

1. SCOPE OF WORK

The project proposes to replace the existing four-span bridge with a new two-span bridge, due to concerns of excessive abutment settlement and seismic inadequacy of the existing bridge. The following tasks were performed for the preparation of this FR:

- Review of geotechnical archives (GeoDOG), as-built plans and bridge inspection (BIRIS) reports of existing bridge.
- Study of geology maps and geology files.
- Field geotechnical exploration, including drilling two exploratory borings, performing Standard Penetration Test (SPT) and Pocket Penetrometer (PP) Test, and collecting soil samples;

- Laboratory corrosion tests;
- Foundation design analysis; and
- Preparation of this FR.

2. PROJECT DESCRIPTION

The existing bridge was constructed in 1965. It is a 265.6 feet long, four-span reinforced concrete (RC) deck on RC girders, supported on RC columns (bents 2 and 3) and RC diaphragm abutments with "U" wing walls. All supports are all founded on RC spread footings. The new bridge will be RC deck on cast-in-place prestressed concrete girders, supported on RC columns (bent 2) and RC abutments with wing walls. All supports will be founded on steel H piles. New structure approaches will also be constructed at both ends.

The vertical datum used in this report is NAVD88 datum unless stated otherwise. The elevations shown in as-built plans were based on the NGVD29 datum. At this site, the NAVD88 elevation is about 2.59 feet higher than the NGVD29 elevation.

3. EXCEPTION TO POLICY

There is no known exception to Department policy relating to the investigation of the structure.

4. FIELD INVESTIGATION AND TESTING PROGRAM

Two geotechnical exploratory borings were drilled on the approach embankment near the bridge abutments (Table 1) to investigate subsurface soil conditions for foundation design of the bridge. Both were rotary wash borings, using a truck-mounted drill rig. Table 1 lists the depths of these borings and the dates they were drilled.

In both borings, Standard Penetration Tests (SPT) were performed at 5-feet interval in soil strata. Pocket Penetrometer (PP) tests were conducted on soil samples showing apparent cohesion. Soil samples were selected at various depths for laboratory corrosion testing (see next Section).

Table 1. Summary of field borings

Boring ID	Surface Elev. (ft)	Total Depth (ft)	Date of completion
RW-15-001	100.0	101.5	8/10/15
RW-15-002	100.0	101.5	8/11/15

5. LABORATORY TESTING PROGRAM

The laboratory testing program included 2 corrosion tests. See Section 8 below for test results.

6. SITE GEOLOGY AND SUBSURFACE CONDITIONS

6.1 Regional Geology

The project is located in the Coast Range Geomorphic Province of Central California, a series of northwest-trending mountain ranges (2,000 to 4,000, occasionally 6,000 feet elevation above sea level), and intermountain valleys, bounded in the east by the Great Valley and to the west by the Pacific Ocean. The Coast Ranges are composed of thick Cenozoic sedimentary and volcanic strata overlying Mesozoic metamorphic basement rock. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The Coast Ranges are subparallel to the active San Andreas Fault, which is more than 600 miles long, extending from Pt. Arena to the Gulf of California.

6.2 Soils

According to the Soil Survey Map of Solano County, the west portion of the bridge is underlain by Clear Lake clay and the east portion of the bridge is underlain by San Ysidro sandy loam.

The Clearlake Clay occurs mostly nearly level to gently sloping, poorly drained and moderately drained clays on valley fill and in coastal basins. The soils in this association are very deep and are formed in alluvium mainly from sedimentary rocks. The slopes are 0 to 5 percent and the elevations range from 5 to 1,500 feet. The Clear Lake soils have poor natural drainage, but drainage has been altered by stream cutting and the water table is below a depth of 60 inches in most places. These soils have a surface layer of very dark gray clay underlain by mottled very dark grayish-brown and grayish-brown clay. Additionally they have a high shrink swell potential. This soil has a slight to low erosion hazard. The San Ysidro Loam occurs mostly on fluvial terraces sloping less than 2 percent between the elevations of 10 and 600 feet. The parental material of this soil is alluvium derived from sandstone and shale. The typical soil profile consists of loam in the upper 16 inches, clay from 16 to 34 inches, and silty clay loam from 34 to 60 inches. The San Yisidro Loam is considered moderately well drained. The depth to bedrock is greater than 80 inches. A relevant portion of soil map is included as Figure 2, Vicinity Soils Map.

6.3 Site Geology

According to the Geologic Map of the Northeastern San Francisco Bay Region, California, the site is underlain by alluvial fans and fluvial deposits (Qpaf) (Graymer, Jones, and Brabb, 2002). The alluvial fans and fluvial deposits are described as brown dense gravely and clayey sand or clayey gravel that fines upward to sandy clay. These deposits display various sorting and are located along most stream channels in the county. All Qpaf deposits can be related to modern stream courses. They are distinguished from younger alluvial fans and fluvial deposits by higher

topographic position, greater degree of dissection, and stronger soil profile development. They are less permeable than Holocene deposits, and locally contain fresh water mollusks and extinct late Pleistocene vertebrate fossils. They are overlain by Holocene deposits on lower parts of the alluvial plain, and incised by channels that are partly filled with Holocene alluvium on higher parts of the alluvial plain. Maximum thickness is unknown but at least 50 m. A relevant portion of this map is included as Figure 3, Vicinity Geologic Map.

6.4 Subsurface Conditions

According to boring RW-15-001, the subsurface soils near Abutment 1 consist of predominantly stiff to hard lean clay and sandy lean clay to 93 feet depth (Pocket Penetrometer values = 1.5 - 4.5 tsf). There is a layer of medium dense sand from 37 to 40 feet depth (SPT blow count N_{60} = 18), and a layer of dense to very dense sand from 74 to 82 feet depth (N_{60} = 30 - 80). Below 93 feet depth is medium dense silt (N_{60} = 21 – 25).

According to boring RW-15-002, the subsurface soils near Abutment 2 consist of 45 feet of alternating layers of medium dense to very dense clayey/silty sand (N_{60} = 25 - 55) and very stiff to hard sandy lean clay (PP value = 2.5 - 4.5 tsf). From 45 to 97 feet depth are very stiff to hard sandy lean clay (PP value = 2.5 - 4.5 tsf). Below 97 feet depth is dense sand (N_{60} = 42).

6.5 Groundwater

Groundwater was measured at boring RW-15-001 to be at 31 feet depth, or 69 feet elevation. We also reviewed a monitoring well adjacent to the bridge site for which West & Associates Environmental Engineers, Inc. (located in Vacaville) performed groundwater measurements in 2009. The groundwater elevation was measured to be varying between 60.4 and 64.4 feet. Note groundwater level fluctuates with season and geological/geographical factors.

6.6 Geologic Hazards

The site may be affected by activity along any of the nearby active faults. Earthquake induce hazards can be categorized as primary and secondary seismic effects. The site is not located in an Alquist-Priolo Earthquake Fault Zone therefore primary seismic effects such as ground rupture or surface deformation resulting from differential movement along a fault trace are not expected to occur on the site.

Secondary seismic effects result from various soil responses to ground acceleration. These effects result from activity of any nearby active faults:

- Liquefaction of Natural Ground – Liquefaction is a process by which soil deposits below the water table temporarily lose strength and behave as a viscous liquid rather than a

solid, typically during a moderate to large earthquake. In general, very loose to medium dense, clean fine- to medium-grained sand and very soft to firm, low plasticity silts that are relatively free of clay are most susceptible to liquefaction. Earthquake-induced ground shaking can cause these loose or soft materials to densify, resulting in increased pore water pressures and an upward movement of groundwater that may result in a liquefied condition. Depending on the weight of the structure, the depth to the liquefied stratum, and the nature of the overlying soils, structures situated above such temporarily liquefied soils may sink or tilt, causing significant structural damage.

According to the Liquefaction Susceptibility Map, the site has a moderate liquefaction susceptibility (see Figure 4, Liquefaction Susceptibility Map). However, due to the predominantly cohesive nature of the soils described in the boring logs, the liquefaction potential at the bridge site is low.

- Cracking – Lurch cracks may develop in the silty and clayey soil overlying the site. The potential for lurch cracking will be higher in the rainy periods when the soil is saturated. The hazard from cracking is considered minimal since the structure will be supported on deep foundations.

- Differential Compaction – During moderate and large earthquakes, soft or loose, natural or fill soils can become densified and consolidate, often unevenly across a site. Since the proposed structures will be supported on relatively deep foundations, the potential for differential compaction to affect new structures proposed in this project is considered low.

- Ground Shaking - Moderate to large earthquakes are probable along several active faults in the greater Bay Area. Therefore, strong ground shaking should be expected at some time during the design life of the proposed development. The improvements should be designed in accordance with current earthquake resistant standards.

- Shrink Swell – Clayey soils may be susceptible to relatively large volume changes upon wetting and drying cycles. The soil expansion and/or contraction can cause foundations to shift and roadways to crack. Based on our investigation, the shrink swell potential is low.

7. SCOUR EVALUATION

There is no water body at the bridge site. Scour is not a concern.

8. CORROSION EVALUATION

Corrosion samples were collected in both borings. According to current Caltrans Corrosion Guidelines (2010), a soil is considered corrosive for structural elements if one or more of the following conditions exist: pH is 5.5 or less, chloride concentration is 500 ppm or greater, sulfate concentration is 2000 ppm or greater. Resistivity is not considered for structural elements. The corrosion test results are shown in Table 2. The soil at the project site is considered non-corrosive.

Table 2. Soil Corrosion Test Summary

Location	Corrosion Lab #	Sample Depth (ft)	Min. Resistivity (ohm-cm)	pH	Chloride Content (ppm)	Sulfate Content (ppm)
RW-15-001	CR20150279	45 – 46.5	982	8.28	15	22
RW-15-002	CR20150280	52	1641	8.32	-	-

9. SEISMIC RECOMMENDATIONS

Please refer to the Memo from Hossain Salimi of our office to your Branch, dated September 10, 2015 for the final seismic design recommendations. For clarification or additional information on seismic design aspects of the project, please consult with Hossain Salimi at (916) 227-7147. The following is a brief summary of the proposed seismic design parameters:

Peak Ground Acceleration = 0.48 g
Surface Rupture Potential = None
Liquefaction Potential = Minimum

10. AS-BUILT FOUNDATION DATA

According to as-built plans, all the supports of the existing bridge are founded on spread footings. The bottom of footing elevations are 90.6 feet at the abutments, and 70.6 to 72.6 feet at the bents. Based on the Foundation Report written in 1959, the design bearing capacity of the bridge footings is 5 ksf under Abutment 1 and Bent 2, and 6 ksf under Bents 3 and 4 and Abutment 5. In 2000, it was reported that Abutment 1 settled up to 1.14 feet. Obviously the settlement had started much earlier; but it seems to have stabilized over the years. As-built LOTB for the existing structure should be included in the Structure Plans.

11. FOUNDATION RECOMMENDATIONS

A number of foundation alternatives were considered, including CIDH pile, driven concrete or pipe pile, and steel H pile. Based on the subsurface materials, we recommended steel H pile as the most suitable foundation type for its lower cost and faster construction. Structure Design has provided foundation data sheet and structure loads, as shown in Tables 3 and 4 respectively.

Table 3. Foundation Design Data Sheet

Support No.	Pile Type	Finished Grade Elevation (ft)	Cut-off Elevation (ft)	Pile Cap Size (ft)		Permissible Settlement under Service Load (in)	Number of Piles per Support
				B	L		
Abut 1	HP 14x89	92.35	82.92	10	62.5	1"	28
Bent 2	HP 14x89	79	68.92	14	14	1"	32
Abut 3	HP 14x89	92.82	83.92	10	62.5	1"	28

Table 4. Foundation Factored Design Load

Support No.	Service-I Limit State (kips)		Strength/Construction Limit State (Controlling Group, kips)				Extreme Event Limit State (Controlling Group, kips)			
	Total Load Per Support	Permanent Loads Per Support	Compression		Tension		Compression		Tension	
			Per Support	Max. Per Pile	Per Support	Max. Per Pile	Per Support	Max. Per Pile	Per Support	Max. Per Pile
Abut 1	2607	2238	3740	208	N/A	9	N/A	N/A	N/A	N/A
Bent 2	4535	3706	6825	213.3	N/A	N/A	6403	200.1	0	128
Abut 3	2607	2238	3740	208	N'A	9	N/A	N/A	N/A	N/A

The foundation design analysis was performed in general using the methods outlined in AASHTO LRFD Bridge Design Specifications (2012), with Caltrans amendments. Idealized subsurface soil profile and soil engineering parameters were defined based on the boring logs, field and laboratory testing results, relevant literature, and engineering judgment.

The computer program APILE PLUS (Version 5.0) was used to calculate nominal vertical bearing capacity for the H piles. In this program, the API method (1986, 1987, 1994) was selected to calculate soil resistance. Both skin friction and end bearing capacity were considered in pile resistance calculations.

Table 5 summarizes foundation design recommendations. Table 6 is the pile data table. The computed settlement under service load is less than one inch.

Table 5. Pile Design Recommendations

Support Location	Pile Type	Cut-off Elevation (ft)	Service-I Limit State Load per Support (kips)	Total Permissible Support Settlement (in)	Required Factored Nominal Resistance (kips)				Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (kips)
					Strength Limit		Extreme Event				
					Comp. (φ=0.7)	Tension (φ=0.7)	Comp. (φ=1)	Tension (φ=1)			
Abut 1	HP 14x89	82.92	2607	1	208	9	N/A	N/A	38 (a-I) 75 (b) 65 (c)	38	300
Bent 2		68.92	4535	1	213	N/A	200	128	26 (a-I) 43 (a-II) 45 (b) 47 (c)	26	310
Abut 3		83.92	2607	1	208	9	N/A	N/A	30 (a-I) 71 (b) 63 (c)	30	300

Notes: 1) Design tip elevations are controlled by: (a-I) Compression (Strength Limit), (a-II) Compression (Extreme Event), (b) Tension, (c) Settlement, and (d) Lateral Load, respectively.
2) The specified tip elevation shall not be raised above the design tip elevation for lateral load and tolerable settlement.
3) The design tip elevation for Lateral Load will be provided by Structure Design.

Table 6. Pile Data Table

Support No.	Pile Type	Nominal Resistance (kips)		Cutoff Elevation (ft)	Design Tip Elevations (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)
		Compression	Tension				
Abut 1	HP 14x89	300	20	82.92	38 (a) 75 (b) 65 (c)	38	300
Bent 2		310	130	68.92	26 (a) 45 (b) 47 (c)	26	310
Abut 3		300	20	83.92	30 (a) 71 (b) 63 (c)	30	300

Notes: 1) Design tip elevations are controlled by: (a) Compression, (b) Tension, (c) Settlement, and (d) Lateral Load, respectively.
2) The specified tip elevation shall not be raised above the design tip elevation for lateral load and tolerable settlement.

3) The design tip elevation for Lateral Load will be provided by Structure Design.

12. CONSTRUCTION CONSIDERATIONS

For steel H piles, the pile acceptance criteria should be established based on Gates dynamic formula (see Section 10: Foundations in "California Amendments to AASHTO LRFD Bridge Design Specifications – Sixth Edition" for more details). Our office should be notified if any pile does not meet the acceptance criteria. Since the subsurface materials are predominantly stiff to hard clay, there is a possibility of pile setup and driving resistance lower than expected. In that case, leave the piles one foot above the specified tip elevation and perform restrike after a waiting period of 24 to 48 hours.

13. DISCLAIMER AND CONTACT INFORMATION

The recommendations contained in this report are based on specific project information regarding structure type, location, and design loads that have been provided by Office of Structure Design West. If any conceptual changes are made during final project design, the Office of Geotechnical Design West, Design 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 Hooshmand Nikoui at (510) 286-4811.

c: TJPokrywka, HNikoui, CRisden, RKarpowicz, Daily File
Ahmed Rahid, Project Engineer
Ghulam Popal, Design Senior
Osama Elhamshary, Project Manager
Leonardo Deleon, District Materials Engineer

SYang/mm

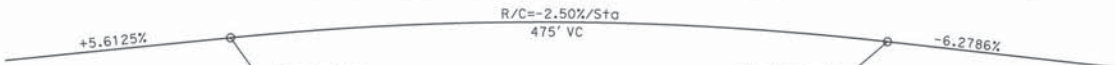
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Sol	80			

REGISTERED CIVIL ENGINEER X DATE

PLANS APPROVAL DATE

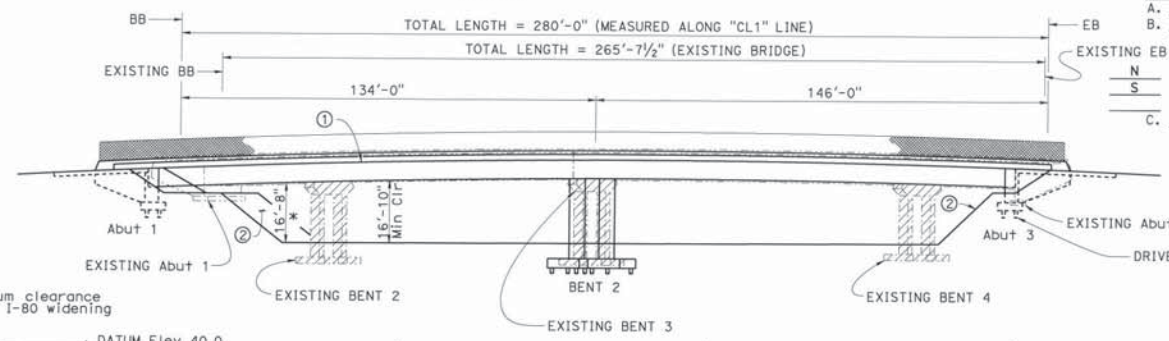
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER ISAIAS YALAN No. C68269 Exp. 9-30-15 CIVIL STATE OF CALIFORNIA



PROFILE GRADE

NO SCALE



NOTE:

* Minimum clearance after I-80 widening

Vehicular Traffic

1. ___ New alignment. No traffic at the site.
2. X Traffic will be detoured away from the site.
3. ___ Traffic will be carried on the structure. Stage construction will/will not be required.
4. ___ Traffic will pass under the structure on HWY I-80 (Name of St. or Hwy.)
   A. ___ No falsework allowed over traffic.
   B. X Falsework opening(s) required:

		Temporary Vertical Clearance	Width of Traffic Opening
N	Bnd	15'-0"	45'-6"
S	Bnd	15'-0"	45'-6"
	Two-way		

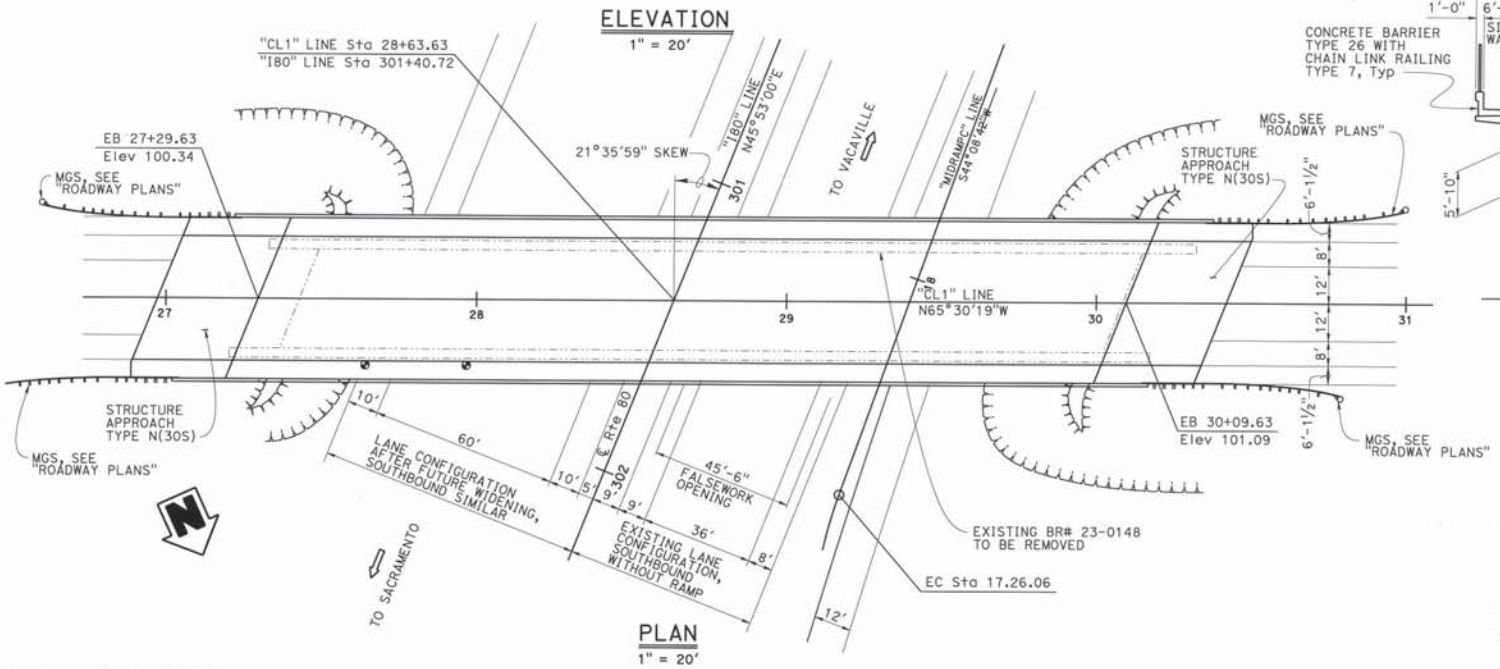
   C. X Temporary traffic lane reduction needed for footing excavation.

NOTES:

1. Structure must be constructed above final grade to provide for false work clearance and must be lowered to grade upon removal of false work
2. Slope paving
3. Utility Opening, 3 - 6" conduits for AT&T

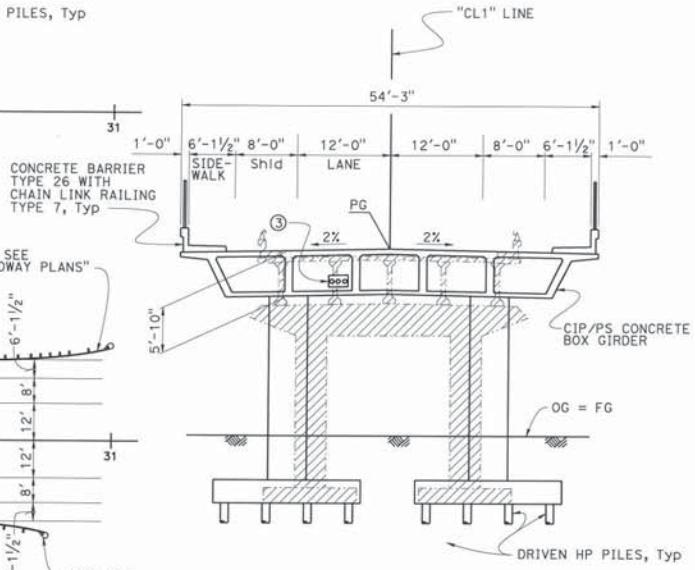
ELEVATION

1" = 20'



PLAN

1" = 20'



TYPICAL SECTION

⅛" = 1'-0"

LEGEND:

- Indicates concrete removal
- Indicates point of minimum vertical clearance
- Indicates new structure
- Indicates existing structure to be removed

ROSA CANDIOTTI (ACTING) DESIGN ENGINEER	DESIGN	BY ISAIAS YALAN	CHECKED ROSA CANDIOTTI	LOAD & RESISTANCE FACTOR DESIGN — LIVE LOADING: HL93, W/"LOW-BOY", PERMIT DESIGN VEHICLE
	DETAILS	BY DAVID ELLIOTT	CHECKED ISAIAS YALAN	LAYOUT — BY ISAIAS YALAN — CHECKED ROSA CANDIOTTI
	QUANTITIES	BY ISAIAS YALAN	CHECKED ROSA CANDIOTTI	SPECIFICATIONS — BY X — PLANS AND SPECS COMPARED X

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 9

BRIDGE NO. 23-0254 POST MILE 32.60

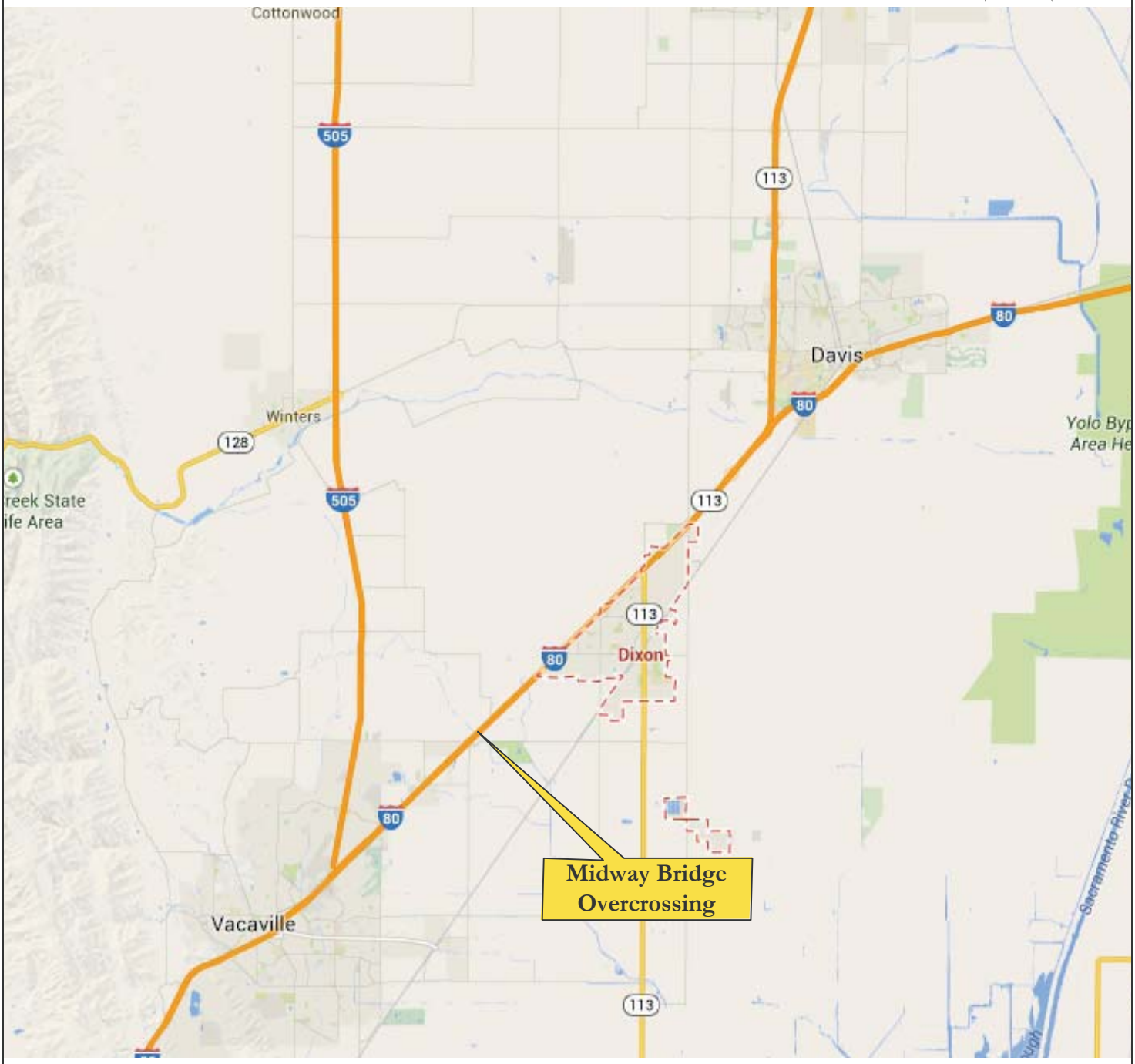
MIDWAY ROAD OC (REPLACE)
GENERAL PLAN

UNIT: 3594 PROJECT NUMBER & PHASE: 0412000483-1 CONTRACT NO.: 04-4G5104

DISREGARD PRINTS BEARING EARLIER REVISION DATES — REVISION DATES 3-3-15 3-4-15 1-11-15 SHEET 1 OF X

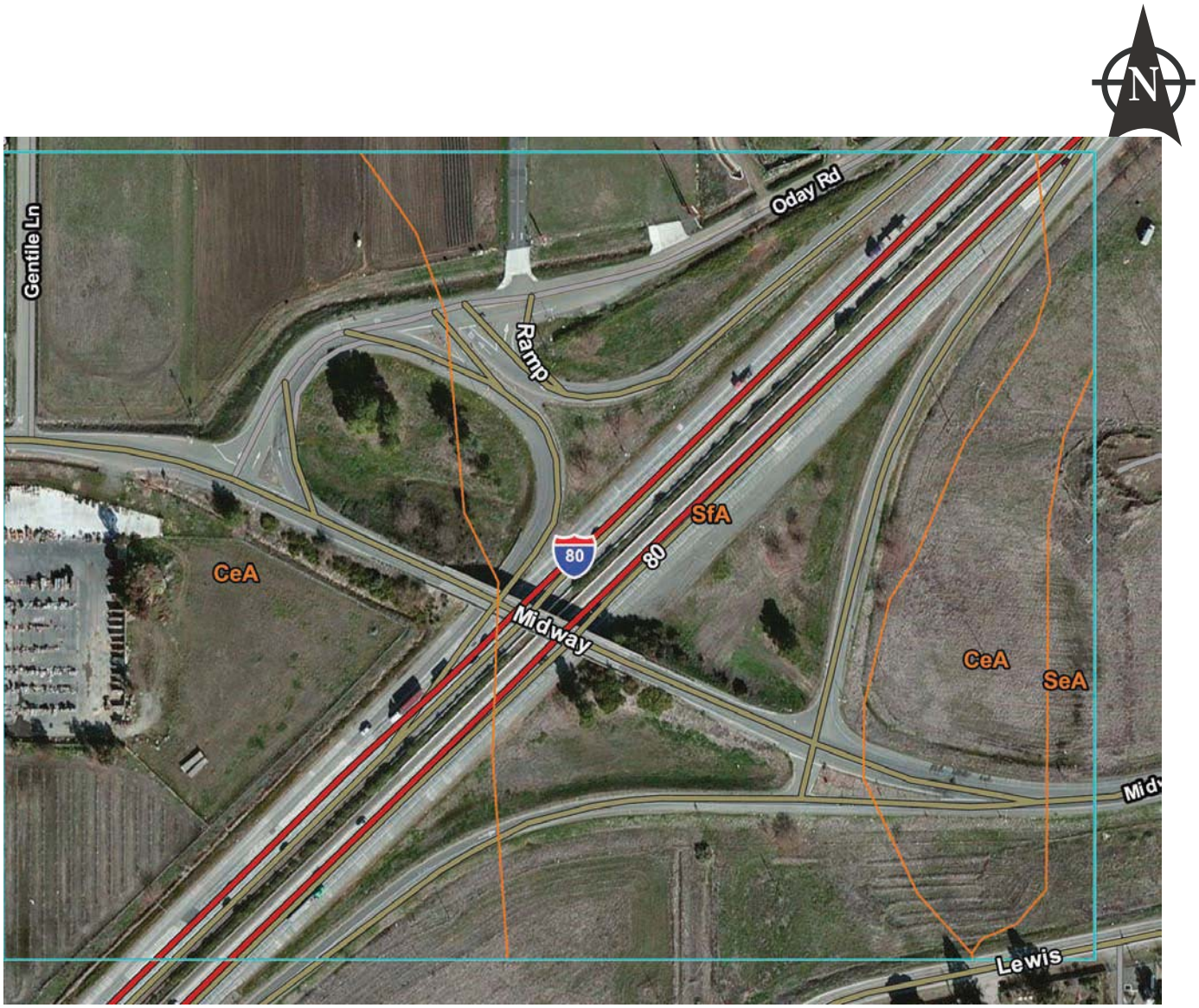
STRUCTURES DETAIL SHEET (INDICATED) (REV 08-01-13)

IFILE x:\ 23-0148-o-0005.dgn



Base: Google Maps. Not to scale

Caltrans	MIDWAY BRIDGE REPLACEMENT HIGHWAY 80, POST MILE 32.62 SOLANO COUNTY, CALIFORNIA	VICINITY MAP
	SEPTEMBER 2015	FIGURE 1

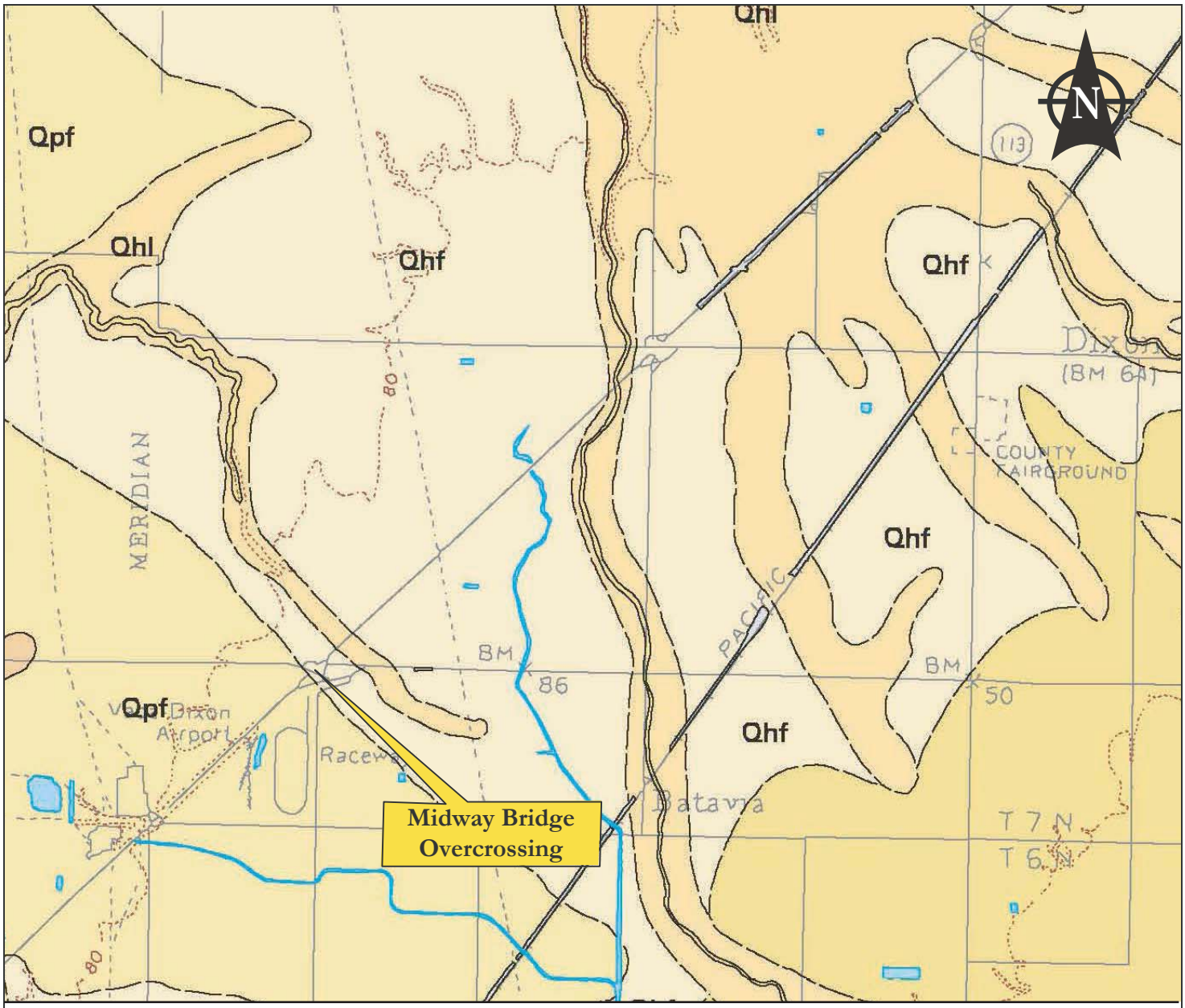


LEGEND

CeA	Clear Lake Clay
SfA	San Ysidro sandy loam

Base: Websoil Survey Map, Sonoma County, California, USDA 2015
Not to scale

Caltrans	MIDWAY BRIDGE REPLACEMENT HIGHWAY 80, POST MILE 32.62 SOLANO COUNTY, CALIFORNIA	VICINITY SOIL MAP
	SEPTEMBER 2015	FIGURE 2



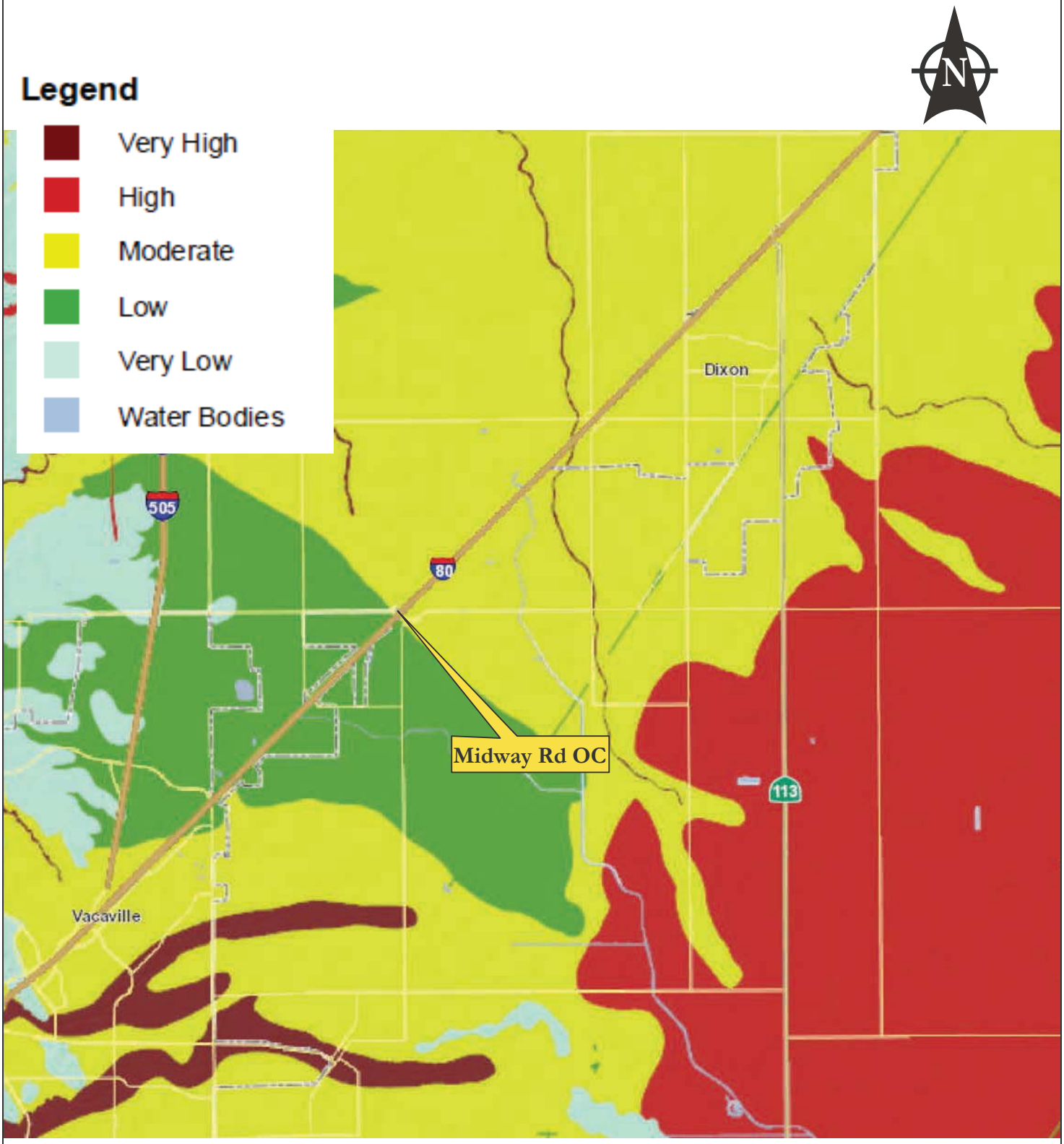
LEGEND

Qhf	Alluvial fan deposits (Holocene)
Qpf	Alluvial fan deposits (late Pleistocene)
Qhl	Natural levee deposits (Holocene)

Base: Geologic Map and Map Database of Northeastern San Francisco Bay Region, California (Graymer, Jones and Brabb, 2002)

Not to scale

Caltrans	**MIDWAY BRIDGE REPLACEMENT HIGHWAY 80, POST MILE 32.62 SOLANO COUNTY, CALIFORNIA**	**VICINITY GEOLOGIC MAP**
	SEPTEMBER 2015	**FIGURE 3**



Caltrans	MIDWAY BRIDGE REPLACEMENT HIGHWAY 80, POST MILE 32.62 SOLANO COUNTY, CALIFORNIA	LIQUEFACTION SUSCEPTIBILITY MAP
	SEPTEMBER 2015	FIGURE 4

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Serious drought
Help save water!

To: MRS. ROSA CANDIOTTI
Senior Bridge Engineer
Division of Engineering Services
Office of Bridge Design-West
Bridge Design Branch 9

Date: September 10, 2015

Attention: Isaias Yalan

File: 04-Sol-80-PM 32.6
04-4G5104
Midway Road Overcrossing
Bridge No. 23-0148

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

Subject: **FINAL SEISMIC DESIGN RECOMMENDATIONS**

This memorandum provides the Final Seismic Design Recommendations for the proposed replacement of the existing 4-span Midway Road Overcrossing (Bridge No. 23-0148) located about 11 miles east of the city of Vacaville on Interstate 80 in Solano County.

It should be noted that the Preliminary Seismic Design Recommendations (PSDR) report for this bridge was recently sent to you in a memorandum dated June 18, 2015. Subsequent to that report, a subsurface investigation was conducted for this project and the findings are reflected in this final report.

Seismicity

As previously mentioned and according to the latest California Seismic Hazard Map (Version 2.3.06), which is based on the United States Geological Survey (USGS) and California Geological Survey (CGS) maps, the nearest active faults are Great Valley 04b Gordon Valley (Reverse) with Maximum Magnitude, Mmax=6.7, located about 13.2 kilometers southwest of the site, Vaca Fault Zone (Strike Slip) with Maximum Magnitude, Mmax=6.4, located about 11.9 kilometers west/southwest of the site, and Great Valley 05 Pittsburgh Kirby Hills (Reverse) with Maximum Magnitude, Mmax=6.6, located about 19.1 kilometers south/southwest of the site. Please note that the distance provided here and in the table on page 2 for each fault is the horizontal distance to the fault trace or surface projection of the top of rupture plane.

Geology and Subsurface Conditions

A subsurface investigation was conducted at the site last month. Two mud rotary borings, RW-15-001 and RW 15-002, were drilled to maximum depths of 100 feet and 101.5 feet, on August 10, and 11, respectively. At boring RW-15-001 located near existing abutment 1, the geology consisted of stiff to very stiff/hard sandy clay/lean clay down to about 70 feet in depth, below which a ten-foot layer of dense sand and more stiff to hard clay and silt layers were encountered. At boring RW-15-002 located near abutment 5, the geology consisted of mostly dense to very dense clayey sand in the upper 60 feet underlain by stiff to hard clay/sandy clay down to the maximum drilling depth.

Faults and Seismic Data

Based on these new borings and using available correlations, the shear wave velocity Vs30 = 270 meters per second (m/s) used for the analysis in the PSDR is still valid and verified as the final shear wave velocity assigned to the site. Furthermore, there are no known faults projecting towards or passing directly through the project site. Therefore, the potential for surface rupture at the site due to fault movement is considered minimal. The following table provided in the PSDR which contains the seismic data for nearby faults, distances, Maximum Magnitudes, as well as Peak Bedrock and Ground Accelerations is unchanged and can be considered final.

TABLE 1

Source	Fault Type	Distance to Site (km)	Maximum Magnitude (Mmax)	Peak Bedrock Acceleration (PBA)	Peak Ground Acceleration (PGA)
Great Valley 04b Gordon Valley	Reverse	13.2	6.7	0.33	0.34
Great Valley 05 Pittsburgh Kirby Hills	Reverse	19.1	6.6	0.22	0.25
Vaca Fault Zone	Strike Slip	11.9	6.4	0.2	0.23
Probabilistic Seismic Hazard Analysis (975 year Return Period)	-	-	-	0.4	0.48

Note: The distance provided is the horizontal distance to the fault trace or surface projection of the top of rupture plane.

Groundwater and Liquefaction Potential

Groundwater at boring RW-15-001 was measured right after completion of drilling to be at elevation 69 feet, corresponding to about 31 feet below top of ground. However, the groundwater in this region is considered to be deeper. Regardless of that, and simply using the measured groundwater elevation, the potential for liquefaction due to the nature of the materials encountered (mostly stiff to hard clay/sandy clay) is considered very minimal.

Acceleration Response Spectrum

As mentioned in the PSDR, Acceleration Response Spectrum (ARS) curves based on both Caltrans ARS On-Line Deterministic Seismic Hazard Analysis (DSHA) and Probabilistic Seismic Hazard Analysis (PSHA) version 2.3.06 using a 975-year return period (5% probability of exceedance in 50 years) were generated for the site, incorporating the latest Attenuation Relationship models, and all four curves were compared. The PSHA response spectrum (Caltrans ARS On-Line) was higher than the other spectra (please see Figure 1), and chosen as the Recommended Final ARS for the site (see Figure 2). The Final ARS curve was been modified to account for the proximity of the site to the fault(s). 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 is used between 0.5 and one second.

If you have any questions or require further information, please contact Hossain Salimi at (916) 227-7147.

List of Attachments:

Figure 1, ARS curve Comparisons
Figure 2, Recommended Final ARS curve
c: TPokrywka, SYang, HNikoui, Daily File

HSalimi/mm

REGISTERED PROFESSIONAL ENGINEER
HOSSAIN SALIMI
No. 54567
Exp. 12/2015
CIVIL
STATE OF CALIFORNIA

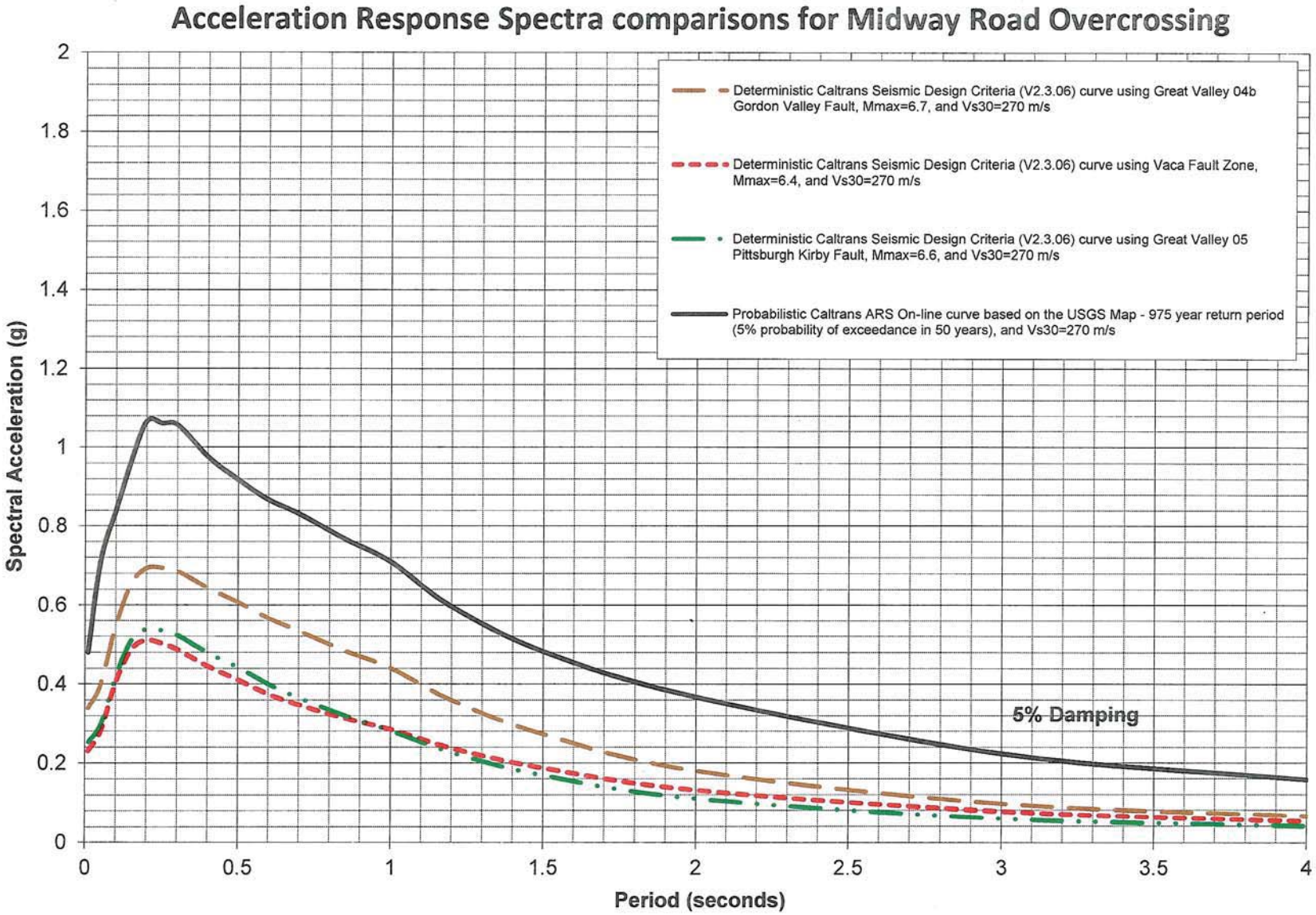

Acceleration Response Spectra comparisons for Midway Road Overcrossing
Deterministic Caltrans Seismic Design Criteria (V2.3.06) curve using Great Valley 04b Gordon Valley Fault, Mmax=6.7, and Vs30=270 m/s
Deterministic Caltrans Seismic Design Criteria (V2.3.06) curve using Vaca Fault Zone, Mmax=6.4, and Vs30=270 m/s
Deterministic Caltrans Seismic Design Criteria (V2.3.06) curve using Great Valley 05 Pittsburgh Kirby Fault, Mmax=6.6, and Vs30=270 m/s
Probabilistic Caltrans ARS On-line curve based on the USGS Map - 975 year return period (5% probability of exceedance in 50 years), and Vs30=270 m/s
5% Damping
Spectral Acceleration (g)
Period (seconds)
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
0.5
1.5
2.5
3
3.5
4

Figure 1

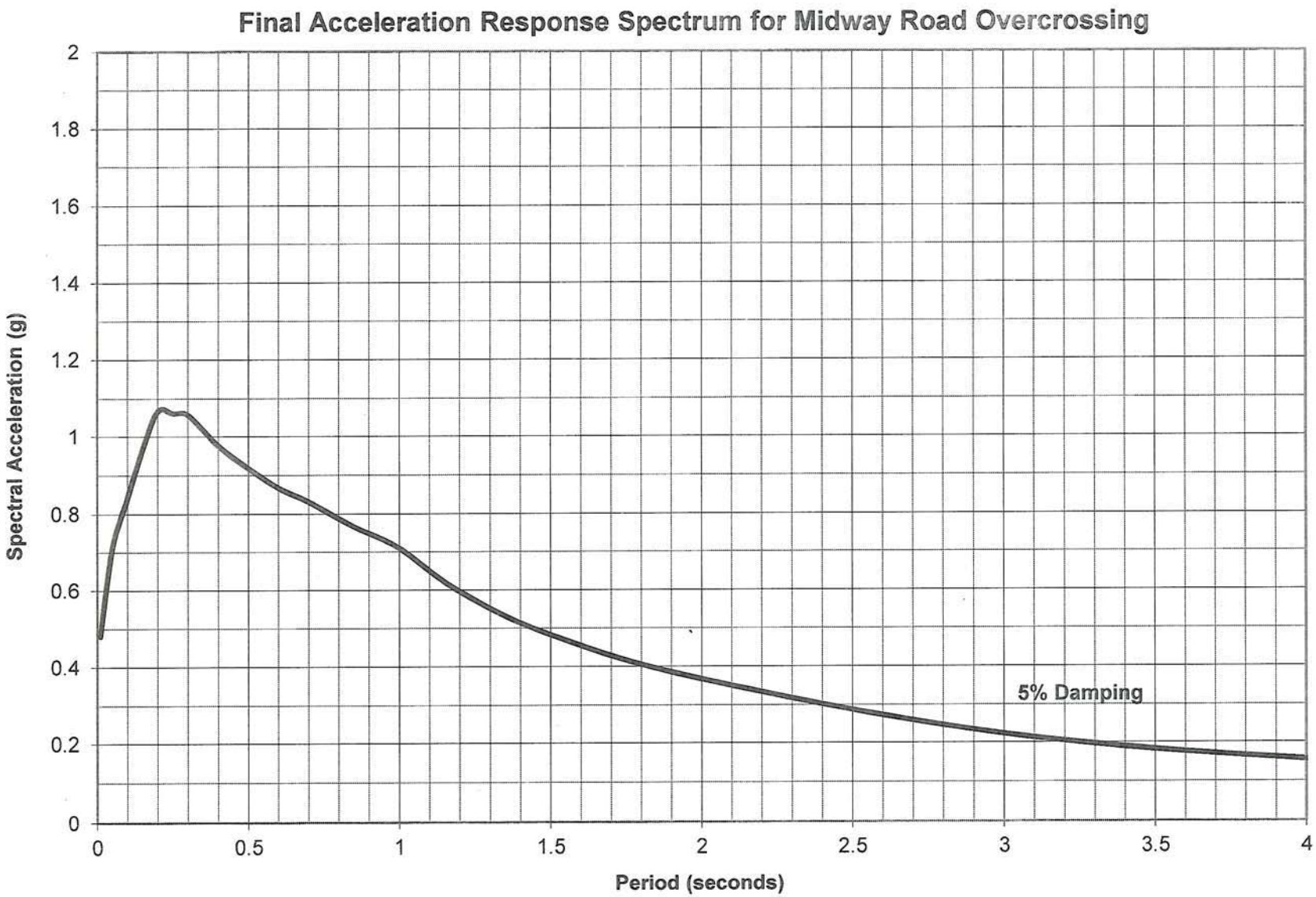

Final Acceleration Response Spectrum for Midway Road Overcrossing
Spectral Acceleration (g)
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
0.5
1
1.5
2
2.5
3
3.5
4
Period (seconds)
5% Damping

Figure 2

Engage your community - connect to news, events and information you care about. View more information... Sign In

Construction Water

The primary purpose of Construction Water is for on-site dust control and soil consolidation during construction and/or grading activities on lands within the District's boundary.

- Construction Water may not be utilized outside of the District's boundary without the signed approval of the District's General Manager.
- Construction Water shall not be used for crop irrigation or watering of livestock.
- Water from the **gravity agricultural irrigation systems** is only available during the Board approved irrigation season, typically from March 1st through October 15th.
  - Typically this water must be pumped by the user from an open irrigation canal and is tracked by loads counts submitted weekly to the Engineer.
  - Access "driveways" from the County roadways to the delivery site must be temporarily improved and follow the guidelines and requirements from the *"CA Stormwater BMP Handbook - Construction*" and meet all other County requirements.
  - At the end of the Contract, the District will require the improvements to be removed and the area returned to its pre-contract condition.
- Water from the **pressurized non-potable water systems** may be available during the agricultural off-season.
  - These systems have limited capacity and may require additional on-site facilities to be provided by the user such as drop tanks or other storage facilities.
  - This water is typically delivered to the user through an appropriate metering device provided by the District. If the District does not have the required meter available, an approved meter must be provided by the user and installed by the District for the duration of the Contract.
- Water from the **pressurized potable water systems** may be available during the agricultural off-season.
  - These systems have very limited volume and will require additional on-site facilities to be provided by the user.
  - The flow capacity (i.e. gallons per minute or cubic feet per second) is also limited, the user may be restricted to lower delivery rates.
  - This water is typically delivered to the user through an appropriate metering device provided by the District. If the District does not have the required meter available, an approved meter must be provided by the user and installed by the District for the duration of the Contract.
- Approved Contracts cannot be transferred to another user even if the work being done is on the same parcel of land or within the same development area.
- Approved contracts are terminated on December 31st of the current calendar year and must be resubmitted the following year if additional construction water is needed.
  - Multiple-year projects must pay for their "to-date" water usage, following year's water and renew their Contract prior to receiving any additional construction water. Typically this will be completed in January.
- The unit cost for Construction Water and associated fees are **recalculated annually** and follow the Board approved current rate increase and structure.
- Before completing the request form below, *please insure the date on the form matches the current calendar year* to insure the correct rate structure has been calculated.

Process for Requesting Construction Water:

- Complete this **Form** and email the completed form to the Engineer below.
- Once received, the information provided will be reviewed and a determination will be made as to the availability of water per the information provided on your request.
- Before the request is approved as a Contract, the District must receive a signed request form and check for the water use and the appropriate fees.
- Please allow up to 72 hours before accessing the Construction Water.

For questions, contact Joel Tetzlaff, Associate Civil Engineer, at 707.455.4019 or Email.

Solano Irrigation District
Construction Water Contract

Revised: April 14, 2016 JT

Company or Responsible Agency: _____
Contact Person: _____
Address: _____
City, State & Zip: _____
Email Address: _____
Phone: (Office) _____
(FAX) _____
(Cell) _____
Location of work: _____
Assessor Parcel Number (APN): _____

Name of Project or Improvement Plan Set: _____
Name of District Project Engineer working with: _____

Please provide the following information (Figures should error to your *Maximum Daily Demand* for the project):

Total Quantity Needed per Day: _____ gallons

Flow Rate Required: _____ Units: ☐ gallons per minute (gpm) ☐ cubic feet per second (cfs)

Number of Trucks: _____ Each Truck Capacity: _____ gallons Loads per Truck per Day: _____

Number of Storage Tanks: _____ Capacity of Each Tank: _____ Total Storage On-Site: _____ gallons

(Depending on system capacity & location, the Contractor may be required to provide on-site storage to equal the Total Quantity Needed per Day)

Requested Start of Service: _____ End of Service: _____

Fee Calculations:

Water Usage (Flat fee for first 2 acre feet = 651,702 gallons):		$ 640	=	$	640
Meter/Facility Security Deposit (Refundable):		$ 1,200	=	$	1,200
Subtotals:					
Water and Devices:	(Acct: 001.1000.5005)			$	640
Refundable Deposits:	(Acct: 001.0000.3505)			$	1,200
Minimum Amount Required at Contract Signing:				**$**	**1,840**

Additional Charges (Determined by District):

Additional Water Usage:	_____ AF at	$ 145	=	$	-
BFP Installed:	_____ EA at	$ 125	=	$	-
BFP Security Deposit per device (Refundable):		$ 500	=	$	-

********** **For District Use Only** **********

Approval for Construction Water:

Engineering: _____ Date: _____

Ag. or M&I Operations Supervisor: _____ Date: _____

Work located inside District Boundary? ____ Yes ____ No (If "No", must be approved & signed by General Manager)

General Manager (as req.): _____ Date: _____

Check Received By: _____ Date: _____ Amount: $1,840 Check No: _____

Location of Water Connection: _____
Assessor Parcel Number (APN): _____

Measuring Device: Service Meter: ☐ Backflow Preventer Required? ☐ Yes ☐ No
Hydrant Meter: ☐ Type: Truck Mounted BFP ☐
Load Count: ☐ SID installed BFP ☐
Air Gap

Meter Serial No: _____ # of Digits: _____ Multiplier: _____
Installed By: _____ Date: _____ Removed By: _____ Date: _____ Inspected By: _____ Date: _____
Start Reading: _____ End Reading: _____ Total Usage: _____
Totalizer Type: ____ Gallons ____ Cubic Feet ____ Acre Feet

Meter Damaged: Yes / No Actual Cost to Repair: _____ Ref. W/O No. _____
Facilities Damaged: Yes / No Actual Cost to Repair: _____ Ref. W/O No. _____

Refund Approved By: _____ Date: _____ Amount: _____

Contract Completed: _____ Date: _____

Standard Terms and Conditions

1. The District reserves the right to refuse or terminate the use of construction water at any time.
2. All requests for construction water shall be issued by the District's Engineering Department.
3. All construction water permits terminate at the end of the calendar year. All active permits must be resubmitted with all applicable fees for approval.
4. The construction water rate is set as a flat fee for the first 2 acre feet of water, regardless of the quantity used. Additional water used above 2 acre feet will be charged at the approved rate per acre foot.
5. Extended or long duration usage may require additional approval and will be billed monthly.
6. Construction water permits cannot be transferred to another location or party.
7. The District has a limited supply of measuring devices and BFPs, in the event the District does not have the required devices, it is the responsibility of the Company or Responsible Agency to provide a District approved devices.
8. A copy of the County's grading permit may be required by the District prior to the issuance of construction water.
9. All Out-of-District construction water shall be approved by the District's General Manager.
10. The use of SID construction water outside of the District boundaries can only be for a limited time and cannot include the irrigation of crops or watering of livestock.
11. After the fees and deposits have been paid in full and all approvals been made, the District will install the metering device within 1 to 3 days.
12. The Company or Responsible Agency shall be responsible for the security and protection of all District facilities associated the delivery of construction water through this contract.
13. At completion, all District appurtenances shall be removed and facilities inspected by District personnel or an approved representative. The Operations Supervisor will approve / disapprove the Security Deposit refund per the inspection. All repair costs shall be billed to the Company or Responsible Agency.
14. The Security Deposit(s) will be refunded once the District facilities have passed inspection. A check will be issued the Company or Responsible Agency by the District's Finance Department and may take up to 30 days to process. If the refund has not been received by this time, please contact the District office.
15. The costs for any and all damages to the District's facilities shall be deducted from the Security Deposit(s). If the costs exceed the deposit(s), the Company or Responsible Agency will be billed for the difference, otherwise a check will be issued for the remaining balance.

By signing below, the Company/Responsible Agency printed on the front page of this document agrees to and fully understands the District's terms and conditions for the use of construction water.

Signature: _____ Date: _____

Printed: _____

Rahid, Ahmed@DOT

From: Rahid, Ahmed@DOT
Sent: Wednesday, May 25, 2016 3:56 PM
To: Rahid, Ahmed@DOT
Subject: FW: Construction Water for Use on Caltrans Project

From: Joel Tetzlaff [mailto:TetzlafJ@SIDWater.org]
Sent: Thursday, April 14, 2016 2:50 PM
To: Wong, Marc@DOT
Cc: Mori, Tomo@DOT; Popal, Ghulam@DOT; Joel Tetzlaff
Subject: RE: Construction Water for Use on Caltrans Project

Marc

To re-cap our phone conversation:

- Yes, the District should be able to meet the expected daily volume
- Contactor will need to pump the water directly from an open canal, most likely from Lateral 4-C Canal at Meridian Road or Kilkenny Canal at Midway Road
- The "filling areas" are in rural areas and have 24/7 access; a District key may be required to access through District gate(s)
- Typical Construction BMPs will be required and maintained at the transitions to the County roadways
    - Construction BMPs must be removed at the end of the Contract
- Daily water usage must be recorded and provided to the District on a weekly basis
- A separate Construction Water Contract and fees is required for each calendar year of the project
- From October 15th to March 1st, the District will not deliver water in the canal systems
    - Contractor will have to pump from the remaining water in the canal's under-road crossings (varying volumes)
- A temporary District Encroachment Permit will be required from CalTrans or your Contractor, whomever will be "held accountable"

If you have any questions, please let me know.

Thank you.

Joel Tetzlaff, PE
Associate Civil Engineer
Solano Irrigation District
810 Vaca Valley Parkway, Suite 201
Vacaville, CA 95688

Direct: 707-455-4019
Fax: 707-452-8557
E-mail: tetzlaffj@sidwater.org

ASBESTOS AND LEAD-CONTAINING PAINT SURVEY REPORT

SOL-80, MIDWAY ROAD AND MERIDIAN ROAD OVERCROSSINGS (23-0148 AND 23-0147) SOLANO COUNTY, CALIFORNIA

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

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

GEOCON PROJECT NO. E8721-02-51
CALTRANS EA 04-4G510
CALTRANS PROJECT NO. 04-1200-0483-1

AUGUST 2016

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1. Vicinity Map
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APPENDIX
Laboratory Analytical Reports and Chain-of-Custody Documentation

REPORT LIMITATIONS

This asbestos and lead-containing paint (LCP) survey was conducted in conformance with generally accepted standards of practice for identifying and evaluating asbestos and LCP in structures. Due to the nature of structure surveys, asbestos and LCP use, and laboratory analytical limitations, some asbestos or LCP in the structures may not have been identified. We were unable to access the underside of the bridge deck and center bent due to safety concerns (i.e., traffic). Structure spaces such as cavities, crawlspaces, and pipe chases may have been concealed to our investigator. Previous structure renovation work may have concealed or covered spaces or materials, or may have partially demolished materials and left debris in inaccessible areas. Additionally, renovation activities may have partially replaced asbestos with indistinguishable non-asbestos materials. Asbestos or LCP may exist in areas of the structure not accessible or sampled in conjunction with this Task Order.

During renovation or demolition operations, suspect materials may be uncovered which are different from those accessible for sampling during this assessment. Personnel in charge of renovation/demolition should be alerted to note materials uncovered during such activities that differ substantially from those included in this or previous assessment reports. If suspect materials are found, additional sampling and analysis should be performed to determine if the materials contain asbestos or lead.

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 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 authors who are 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.

GEOCON CONSULTANTS, INC.

Chris Giuntoli, CAC No. 02-3163
Senior Project Scientist

CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 4
OFFICE OF ENVIRONMENTAL ENGINEERING

Reviewed By:	Recommended By:	Approved By:
Nandini Vishwanath Task Order Manager	Chris Wilson, PE District Branch Chief	Allen Baradar, PE District Office Chief

PROJECT TEAM

Contact	Affiliation	Responsibility
Romy Fuentes, P.E. 510.622.8803 510.622.0198 fax romy_f_fuentes@dot.ca.gov	Caltrans – District 4 111 Grand Avenue, MS 7A Oakland, CA 94612	Contract Manager
Nandini Vishwanath 510.286.5654 510.286.5642 fax nandini_vishwanath@dot.ca.gov	Caltrans – District 4 Environmental Engineering 111 Grand Avenue, MS8C Oakland, CA 94612	Task Order Manager
Richard Day, CEG, CHG Chris Giuntoli, CAC 925.371.5900 925.371.5915 fax geoconliv@geoconinc.com	Geocon Consultants, Inc. 6671 Brisa Street Livermore, CA 94550 (*Caltrans Contractor*)	Project Management Sample Collection Field QA/QC Investigation Report
Diane Galvan 562.989.4045 562.989.4040 fax diane@atlglobal.com	Advanced Technology Laboratories 1510 E. 33rd Street Signal Hill, CA 90807 (*Geocon Subcontractor*)	Metals Analysis
Chris Dojlidko 510.895.3675 510.895.3680 fax sanleandrolab@emsl.com	EMSL Analytical, Inc. 464 McCormick Street San Leandro, CA 94577 *(Geocon Subcontractor)*	Asbestos Analysis

EXECUTIVE SUMMARY

This asbestos and lead-containing paint (LCP) survey report was prepared for Midway Road Overcrossing (OC) (23-0148) at Post Mile (PM) 32.62 and Meridian Road OC (23-0147) at PM 31.36 on Interstate 80 (I-80) in Solano County, California. We performed asbestos and LCP surveys on the bridges. The project location is depicted on the Vicinity Map, Figure 1, and Site Plans, Figures 2a and 2b. Caltrans has requested an investigation at the project location to provide data regarding the presence of asbestos and LCP prior to bridge replacement and renovation activities.

This report documents the investigation sampling methods and laboratory analytical data. The primary objective of our surveys was to determine and quantify asbestos and LCP at the project location prior to bridge replacement and renovation activities. The information obtained from this investigation will be used by Caltrans to coordinate proposed renovation and demolition activities, determine appropriate abatement/disposal costs, and identify health and safety concerns during bridge renovation and demolition operations.

The field investigation was performed on May 25, 2016. We were unable to access the underside of the bridge decks and center bents due to safety concerns (i.e., traffic). The following field activities were performed during asbestos and LCP sampling efforts:

- Collected 14 bulk samples of suspect asbestos;
- Collected four (2-part composite) bulk samples of suspect LCP; and
- Transported samples to Caltrans-approved, California-certified environmental laboratories.

Samples were collected from locations as shown in the Site Plans (Figures 2a and 2b). Suspect asbestos and LCP sample identification numbers are presented in Tables 1 and 2, respectively. Materials represented by the samples collected are presented in the Site Photographs.

Bulk suspect asbestos materials samples were collected after first wetting friable materials with a light mist of water. The samples were then cut from the substrate, transferred to labeled containers, and sealed. Six suspect asbestos materials were identified during the surveys (see Table 1). Sampling locations were distributed throughout the homogeneous areas (spaces where the material was observed).

We relinquished bulk samples using standard chain-of-custody documentation for asbestos analysis. Asbestos content was determined using U.S. Environmental Protection Agency (EPA) Test Method 600/R-93/116 for polarized light microscopy (PLM). We requested laboratory analyses to be within a 120-hour turnaround.

Bulk paint sampling was performed using techniques presented in U.S. Department of Housing and Urban Development (HUD) guidelines. Four paint systems were identified during the surveys (see Table 2).

> *It was not Geocon's intent during this inspection to conduct an evaluation of lead-based paint hazards in accordance with HUD guidelines.*

We relinquished bulk paint samples using standard chain-of-custody documentation for lead analysis. Total lead content was determined using EPA Test Method 6010B. We requested laboratory analyses to be within a 120-hour turnaround.

Chrysotile asbestos at a concentration of 40% was detected in a sample representing approximately 10 square feet of nonfriable sheet packing material used as barrier rail shims on the Meridian Road OC (23-0147).

No asbestos was detected in samples of the remaining suspect materials collected from the Meridian Road OC during our survey. Additionally, no asbestos was detected in samples of suspect materials collected from the Midway OC (23-0148) during our survey.

Laboratory results for the asbestos samples are summarized on Table 1. Reproductions of the laboratory report and chain-of-custody documentation are presented in the Appendix.

Representative total lead was not reported at or above the laboratory reporting limits of 99 and 2.0 milligrams per kilogram (mg/kg) in our samples representing intact white and yellow traffic striping, respectively, observed on the Midway Road OC.

Representative total lead was reported at a concentration of 26 mg/kg in a sample representing white traffic striping on the Meridian Road OC. Representative total lead was reported at a concentration of 16,000 mg/kg with a TCLP lead concentration of 2.7 milligrams per liter (mg/l) in a sample representing yellow traffic striping on the Meridian Road OC.

The paint sample laboratory results are summarized in Table 2. Reproductions of the lead laboratory report and chain-of-custody documentation are presented in the Appendix.

We provide the following conclusions and recommendations based on the results of our investigation.

NESHAP regulations do not require that asbestos-containing sheet packing (a Category I nonfriable/nonhazardous material) identified during our survey be removed prior to demolition or be treated as hazardous waste. The sheet packing (i.e., shims) may also be reused or transferred to Caltrans for storage and subsequent use. However, activities causing *disturbance* of the sheet packing

matrix (i.e., cutting, abrading, sanding, grinding, etc.) would require compliance with the California Occupational Safety and Health Administration (Cal/OSHA) asbestos standard (Title 8, CCR Section 1529).

We also recommend the notification of contractors (that will be conducting demolition, renovation, or related activities) of the presence of asbestos in their work areas (i.e., provide the contractor[s] with a copy of this report and a list of asbestos removed by contractor[s] during subsequent abatement activities). Personnel not trained for asbestos work should be instructed not to *disturb* asbestos.

In accordance with Yolo-Solano Air Quality Management District (YSAQMD) Rule 9.9, written notification is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not).

Based on analysis of the samples collected during our survey, white traffic striping observed on both bridge structures and yellow traffic striping observed on the Midway Road OC would not be considered a California or Federal hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate. In addition, disturbance (blasting, grinding, etc.) of the striping would not require a Cal/OSHA lead notification.

Yellow traffic striping observed on the Meridian Road OC (23-0147) would be considered a California but not a Federal hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate.

We recommend that all paints at the project location (graffiti, graffiti abatement, etc.) be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during maintenance, renovation, and demolition activities. This recommendation is based on the LCP sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some paints. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead-related work. Compliance and training requirements regarding construction activities where workers may be exposed to lead are presented in Title 8, CCR, Section 1532.1, subsections (e) and (l), respectively. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

ASBESTOS AND LEAD-CONTAINING PAINT SURVEY REPORT

1.0 INTRODUCTION

This asbestos and lead-containing paint (LCP) survey report was prepared for Midway Road Overcrossing (OC) and Meridian Road OC in Solano County, California. This report documents the investigation sampling methods and laboratory analytical data.

1.1 Site Description and Proposed Improvements

The project consists of Midway Road OC (23-0148) at Post Mile (PM) 32.62 and Meridian Road OC (23-0147) at PM 31.36 on Interstate 80 (I-80) in Solano County, Solano County, California. The project location is depicted on the Vicinity Map, Figure 1, and Site Plans, Figures 2a and 2b. Caltrans has requested an investigation at the project location to provide data regarding the presence of asbestos and LCP prior to bridge renovation and demolition activities.

1.2 Purpose

The primary objective of our survey was to determine and quantify asbestos and LCP at the project location prior to bridge renovation and demolition activities. The information obtained from this investigation will be used by Caltrans to coordinate proposed activities, determine appropriate abatement/disposal costs, and identify health and safety concerns during bridge renovation and demolition activities.

2.0 BACKGROUND

2.1 Asbestos

The *Code of Federal Regulations (CFR),* 40 CFR 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (NESHAP) and Federal Occupational Safety and Health Administration (FED OSHA) classify asbestos-containing material (ACM) as any material or product that contains *greater than* 1% asbestos. Nonfriable ACM is classified by NESHAP as either Category I or Category II material defined as follows:

- **Category I** – asbestos-containing packings, gaskets, resilient floor coverings, and asphalt roofing products.
- **Category II** – all remaining types of non-friable asbestos-containing material not included in Category I that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Regulated asbestos-containing material (RACM), a California hazardous waste when friable, is classified as any manufactured material that contains *greater than* 1% asbestos by dry weight *and* is:

- Friable; or
- Category I material that has become friable; or
- Category I material that has been subjected to sanding, grinding, cutting, or abrading; or
- Category II non-friable material that has a high probability of becoming crumbled, pulverized, or reduced to a powder during demolition or renovation activities.

Activities that disturb materials containing *any* amount of asbestos are subject to certain requirements of the California Occupational Safety and Health Administration (Cal/OSHA) asbestos standard contained in Title 8, CCR Section 1529. Typically, removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. When the asbestos content of a material exceeds 1%, virtually all requirements of the standard become effective.

Materials containing more than 1% asbestos are also subject to NESHAP regulations (40 CFR Part 61, Subpart M). RACM (friable ACM and nonfriable ACM that will become friable during demolition operations) must be removed from structures prior to demolition. Certain nonfriable ACM and materials containing 1% or less asbestos may remain in structures during demolition; however, there are waste handling/disposal issues and Cal/OSHA work requirements that must be followed. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

With respect to potential worker exposure, notification, and registration requirements, Cal/OSHA defines asbestos-containing construction material (ACCM) as construction material that contains more than 0.1% asbestos (Title 8, CCR 341.6).

2.2 Lead Paint

Construction activities (including demolition) that disturb materials or paints containing *any* amount of lead are subject to certain requirements of the Cal/OSHA lead standard contained in Title 8, CCR, Section 1532.1. Deteriorated paint is defined by Title 17, CCR, Division 1, Chapter 8, §35022 as a surface coating that is cracking, chalking, flaking, chipping, peeling, non-intact, failed, or otherwise separating from a component. Demolition of a deteriorated LCP component would require waste characterization and appropriate disposal. Most landfills and recycling facilities accept intact LCP on a component; however, contractors are responsible for segregating and characterizing waste streams prior to disposal.

For a solid waste containing lead, the waste is classified as California hazardous when: 1) the representative total lead content equals or exceeds the respective Total Threshold Limit Concentration (TTLC) of 1,000 milligrams per kilogram (mg/kg); or 2) the representative soluble lead content equals or exceeds the respective Soluble Threshold Limit Concentration (STLC) of 5 milligrams per liter (mg/l) based on the standard Waste Extraction Test (WET). A waste has the potential for exceeding the lead STLC when the waste's total lead content is greater than or equal to ten times the respective STLC value since the WET uses a 1:10 dilution ratio. Hence, when total lead is detected at a concentration greater than or equal to 50 mg/kg, and assuming that 100 percent of the total lead is soluble, soluble lead analysis is required. Lead-containing waste is classified as "Resource, Conservation, and Recovery Act" (RCRA) hazardous, or Federal hazardous, when the representative soluble lead content equals or exceeds the Federal regulatory level of 5 mg/l 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; however, for the purposes of this investigation, toxicity (i.e., representative 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.

Potential hazards exist to workers who remove or cut through LCP coatings during demolition. Dust containing hazardous concentrations of lead may be generated during scraping or cutting materials coated with LCP. Torching of these materials may produce lead oxide fumes. Therefore, air monitoring and/or respiratory protection may be required during the demolition of materials coated with LCP. Guidelines regarding regulatory provisions for construction work where workers may be exposed to lead are presented in the Title 8, CCR, Section 1532.1.

3.0 SCOPE OF SERVICES

The following scope of services was performed:

3.1 Pre-Field Activities

- Retained the services of EMSL, a Caltrans-approved laboratory accredited by the National Voluntary Laboratory Accreditation Program (NVLAP), to perform the asbestos analyses.
- Retained the services of Advanced Technology Laboratories, a Caltrans-approved laboratory, to perform the lead analyses.

3.2 Field Activities

Mr. Chris Giuntoli, a California-Certified Asbestos Consultant (CAC), certification number 02-3163 (expiration June 19, 2016), and Certified Lead Paint Inspector/Assessor with the California Department of Public Health (DPH), certification number I-5502 (expiration June 14, 2016), performed the asbestos and LCP surveys on May 25, 2016. Fourteen bulk samples of suspect asbestos materials were collected. Four (2-part composite) bulk samples of suspect LCP were collected. We were unable to access the underside of the bridge decks due to safety concerns (i.e., traffic).

4.0 INVESTIGATIVE METHODS

4.1 Asbestos

Bulk suspect asbestos samples were collected after first wetting friable materials with a light mist of water. The samples were then cut from the substrate, transferred to labeled containers, and sealed. We observed six suspect asbestos materials during the surveys (see Table 1). Sampling locations were distributed throughout the homogeneous areas (spaces where the material was observed).

We relinquished bulk samples for asbestos analysis using standard chain-of-custody documentation. Asbestos content was determined using EPA Test Method 600/R-93/116 for polarized light microscopy (PLM). We requested laboratory analyses to be within a 120-hour turnaround.

4.2 Paint

Our bulk paint samples were collected using techniques presented in U.S. Department of Housing and Urban Development (HUD) guidelines. Four paint systems were identified during the survey (see Table 2).

> *It was <u>not</u> Geocon's intent during this inspection to conduct an evaluation of lead-based paint hazards in accordance with HUD guidelines.*

We relinquished bulk paint samples for lead analysis using standard chain-of-custody documentation. Total lead content was determined using EPA Test Method 6010B. We requested laboratory analyses to be within a 120-hour turnaround.

5.0 INVESTIGATIVE RESULTS

5.1 Asbestos

Chrysotile asbestos at a concentration of 40% was detected in a sample representing approximately 10 square feet of nonfriable sheet packing material used as barrier rail shims on the Meridian Road OC (23-0147).

No asbestos was detected in samples of the remaining suspect materials collected from the Meridian Road OC during our survey. Additionally, no asbestos was detected in samples of suspect materials collected from the Midway OC (23-0148) during our survey.

Laboratory results for the asbestos samples are summarized in Table 1. Reproductions of the laboratory report and chain-of-custody documentation are presented in the attached Appendix.

5.2 Paint

Representative total lead was not reported at or above the laboratory reporting limits of 99 and 2.0 mg/kg in our samples representing intact white and yellow traffic striping, respectively, observed on the Midway Road OC.

Representative total lead was reported at a concentration of 26 mg/kg in a sample representing white traffic striping on the Meridian Road OC. Representative total lead was reported at a concentration of 16,000 mg/kg with a TCLP lead concentration of 2.7 mg/l in a sample representing yellow traffic striping on the Meridian Road OC.

The paint sample laboratory results are summarized in Table 2. Reproductions of the lead laboratory report and chain-of-custody documentation are presented in the Appendix.

6.0 CONCLUSIONS

6.1 Asbestos

NESHAP regulations do not require that asbestos-containing sheet packing (a Category I nonfriable/nonhazardous material) identified during our survey be removed prior to demolition or be treated as hazardous waste. The sheet packing (i.e., shims) may also be reused or transferred to Caltrans for storage and subsequent use. However, activities causing *disturbance* of the sheet packing matrix (i.e., cutting, abrading, sanding, grinding, etc.) would require compliance with the California Occupational Safety and Health Administration (Cal/OSHA) asbestos standard (Title 8, CCR Section 1529).

We also recommend the notification of contractors (that will be conducting demolition, renovation, or related activities) of the presence of asbestos in their work areas (i.e., provide the contractor[s] with a copy of this report and a list of asbestos removed by contractor[s] during subsequent abatement activities). Personnel not trained for asbestos work should be instructed not to *disturb* asbestos.

In accordance with Yolo-Solano Air Quality Management District (YSAQMD) Rule 9.9, written notification is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not).

6.2 Paint

Based on analysis of the samples collected during our survey, white traffic striping observed on both bridge structures and yellow traffic striping observed on the Midway Road OC (23-0148) would not be considered a California or Federal hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate. In addition, disturbance (blasting, grinding, etc.) of the striping would not require a Cal/OSHA lead notification.

Yellow traffic striping observed on the Meridian Road OC (23-0147) would be considered a California but not a Federal hazardous waste based on lead content if stripped, blasted, or otherwise separated from the substrate.

We recommend that all paints at the project location (graffiti, graffiti abatement, etc.) be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during maintenance, renovation, and demolition activities. This recommendation is based on the LCP sample results and the fact that lead was a common ingredient of paints manufactured before 1978 and is still an ingredient of some paints. In accordance with Title 8, CCR, Section 1532.1(p), written notification to the nearest Cal/OSHA district office is required at least 24 hours prior to certain lead-related work. Compliance and training requirements regarding construction activities where workers may be exposed to lead are presented in Title 8, CCR, Section 1532.1, subsections (e) and (l), respectively. Contractors are responsible for segregating and characterizing waste streams prior to disposal.

TABLE 1
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - ASBESTOS
MIDWAY ROAD OVERCROSSING (23-0148) AND MERIDIAN ROAD OVERCROSSING (23-0147)
SOLANO COUNTY, CALIFORNIA

Polarized Light Microscopy (PLM) - EPA Test Method 600/R-93/116

Sample Group ID	Description of Suspect Material	Approximate Quantity	Friable	Site Photos	Asbestos Content
		Midway OC (23-0148)			
148-1	Concrete	NA	NA	1 through 5	ND
148-2	Asphalt	NA	NA	2	ND
		Meridian OC (23-0147)			
147-1	Concrete	NA	NA	6 through 11	ND
147-2	Asphalt	NA	NA	7 & 8	ND
147-3	**Guard rail shim material**	**10 square feet**	**No**	**9**	**40%**
147-4	Bridge bearing pad	NA	NA	10	ND

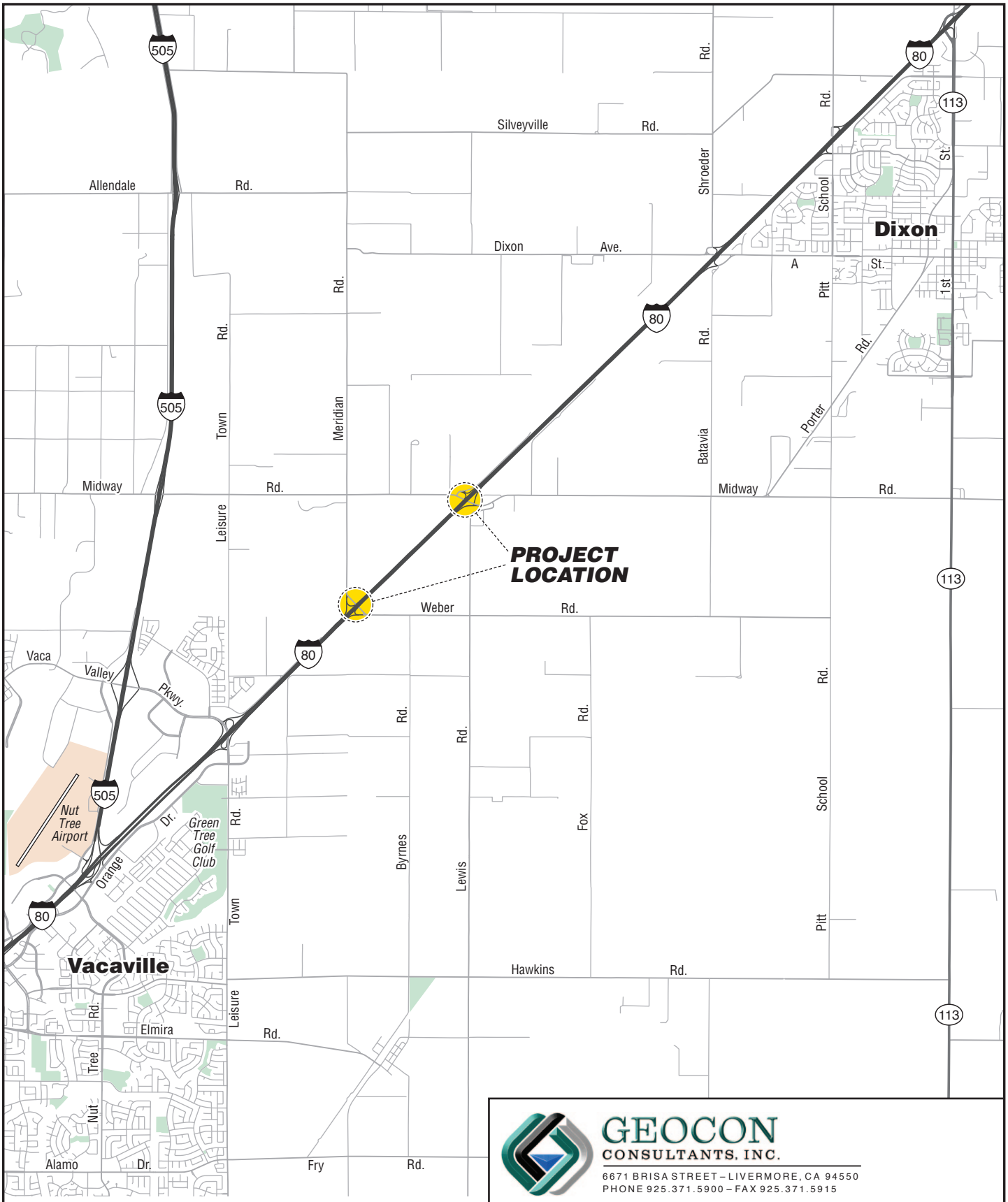
Notes:
NA = Not applicable
ND = No asbestos fibers detected

TABLE 2
SUMMARY OF ANALYTICAL LABORATORY TEST RESULTS - PAINT
MIDWAY ROAD OVERCROSSING (23-0148) AND MERIDIAN ROAD OVERCROSSING (23-0147)
SOLANO COUNTY, CALIFORNIA

Total and Soluble Lead (EPA Test Method 6010B)

Sample No.	Paint Description	Approximate Quantity Peeling/Flaking	Site Photos	Total Lead (mg/kg)	TCLP Lead (mg/l)
		Midway OC (23-0148)			
148-P1	White traffic striping	Intact	2	<99	---
148-P2	Yellow traffic striping	Intact		<2.0	---
		Meridian OC (23-0147)			
147-P1	White traffic striping	Intact	7 & 8	26	---
147-P2	Yellow traffic striping	Intact		16,000	2.7

Notes:
mg/kg = milligrams per kilogram
TCLP = Toxicity Characteristic Leaching Procedure
mg/l = milligrams per liter
< = not detected at or above the indicated method reporting limit
--- = not analyzed



N

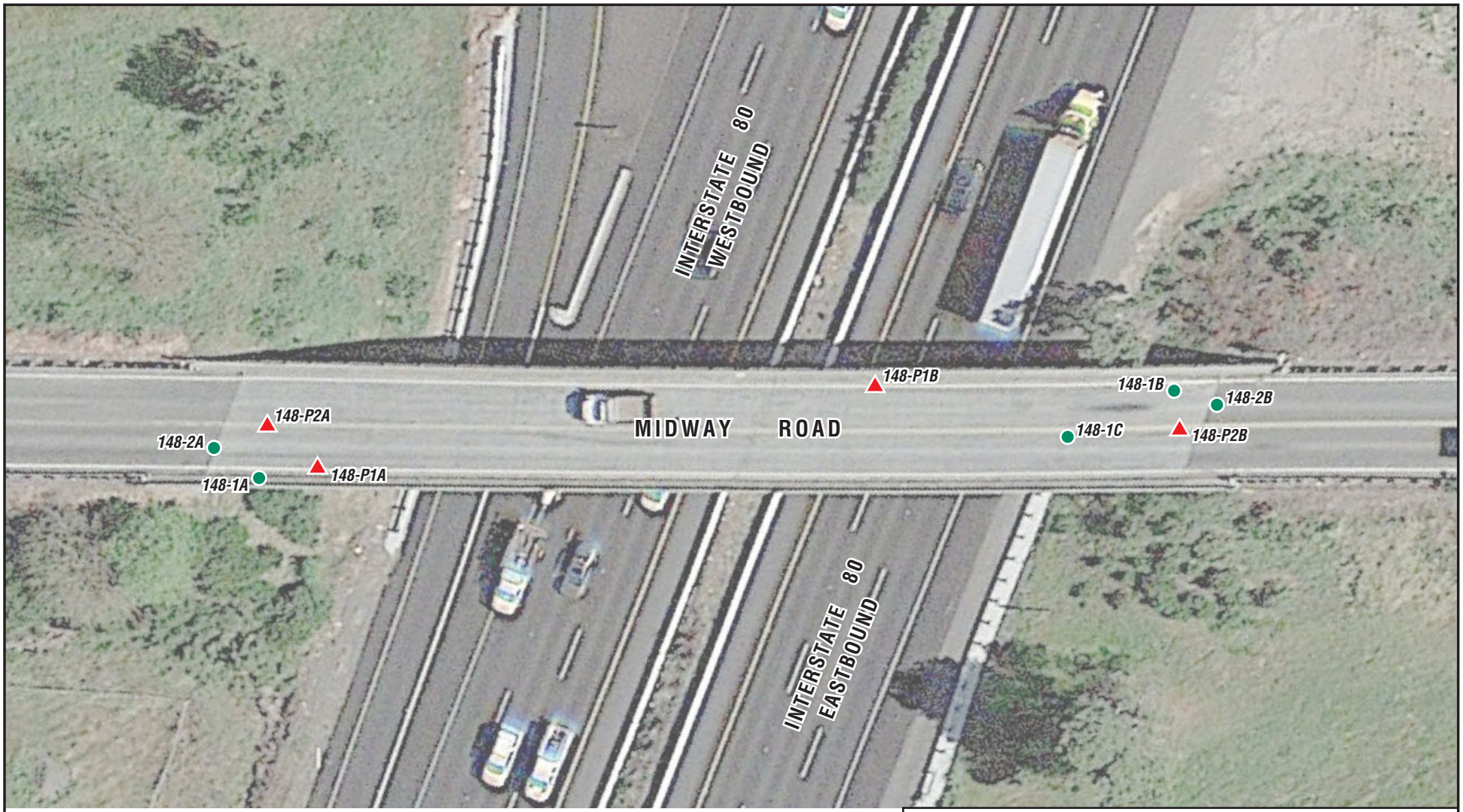
0 1

Scale in Miles

GEOCON CONSULTANTS, INC.

6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

Midway Road and Meridian Road Overcrossings		
Solano County, California	**VICINITY MAP**	
GEOCON Proj. No. E8721-02-51		
Task Order No. 51, EA 04-4G510	August 2016	Figure 1



LEGEND:

- Approximate Asbestos Sample Location
- Approximate Paint Sample Location

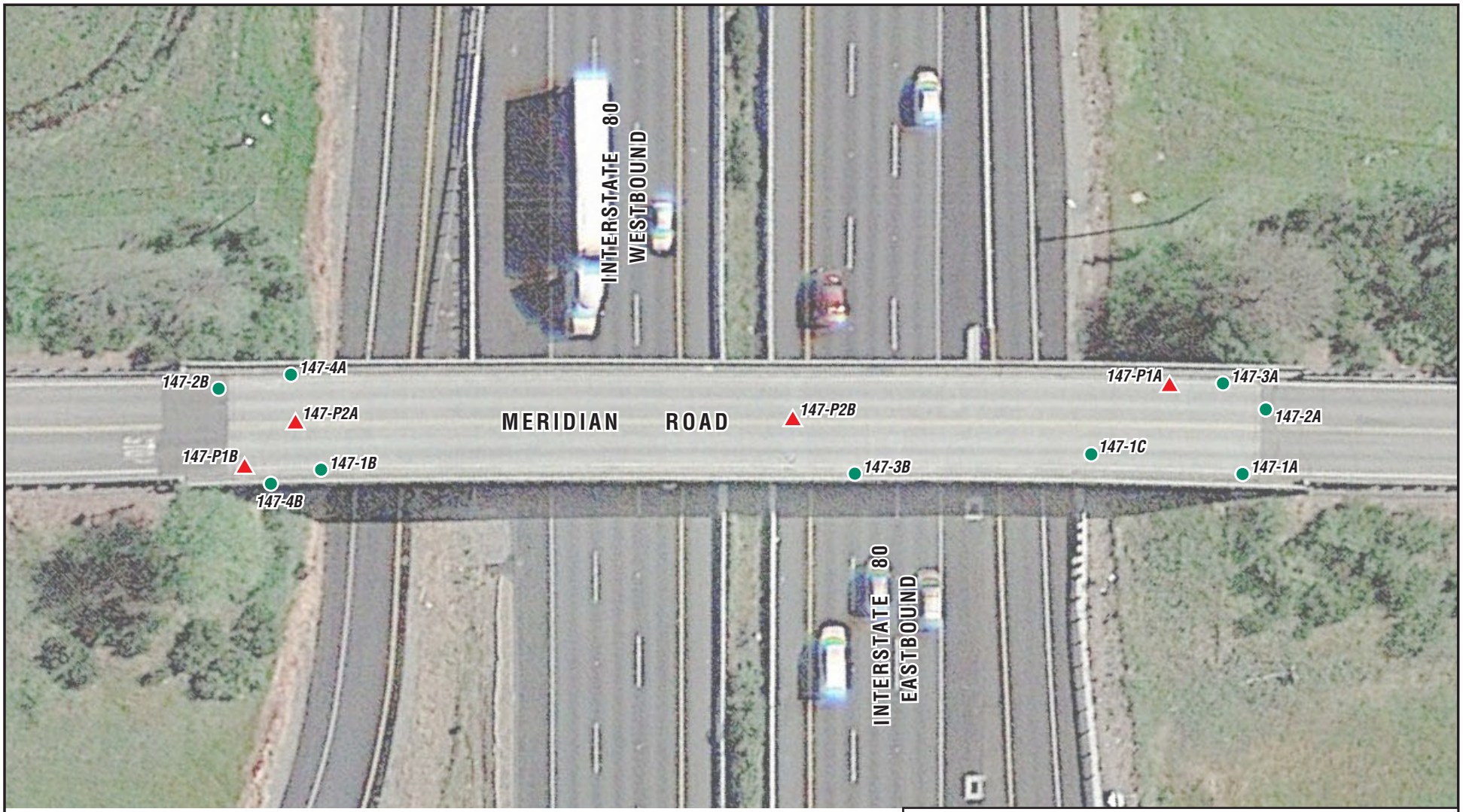
N

0 40

Scale in Feet

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

Midway Road Overcrossing (23-0148)		
Solano County, California	**SITE PLAN**	
GEOCON Proj. No. S8721-02-51		
Task Order No. 51, EA 04-4G510	August 2016	Figure 2a



LEGEND:

- Approximate Asbestos Sample Location
- Approximate Paint Sample Location

0 40
Scale in Feet

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

Meridian Road Overcrossing (23-0147)

Solano County, California

SITE PLAN

GEOCON Proj. No. S8721-02-51

Task Order No. 51, EA 04-4G510 | August 2016 | Figure 2b

Photo 1 – Midway Road Overcrossing (OC) (23-0148) at PM 32.62 on Interstate 80 in Solano County, California

Photo 2 – Midway Road OC deck and barriers

Photo 3 – Midway Road OC elastomeric deck joint seal (non-suspect)

Photo 4 – Midway Road OC abutment

Photo 5 – Midway Road OC underside

Photo 6 – Meridian Road OC (23-0147) at PM 31.36 on Interstate 80 in Solano County, California

Photo 7 – Meridian Road OC deck and barriers

Photo 8 – Meridian Road OC elastomeric deck joint seal (non-suspect)

Photo 9 – Meridian Road OC asbestos-containing guard rail shim material

Photo 10 – Meridian Road OC typical bearing pad at abutments

Photo 11 – Meridian Road OC underside

EMSL Analytical, Inc.

464 McCormick Street San Leandro, CA 94577
Tel/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com / sanleandrolab@emsl.com

EMSL Order: 091609646
Customer ID: GECN21
Customer PO:
Project ID: E8721-02-xx

Attention: Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550

Project: E8721-02-51 (Caltrans) (E8721-02-xx)

Phone: (775) 685-6116
Fax: (925) 371-5915
Received Date: 05/26/2016 11:45 AM
Analysis Date: 06/01/2016
Collected Date: 05/25/2016

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
148-1A *091609646-0001*	Concrete	Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
148-1B *091609646-0002*	Concrete	Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
148-1C *091609646-0003*	Concrete	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
148-2A *091609646-0004*	Asphalt	Black Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
148-2B *091609646-0005*	Asphalt	Black Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
147-1A *091609646-0006*	Concrete	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
147-1B *091609646-0007*	Concrete	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
147-1C *091609646-0008*	Concrete	Gray Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
147-2A *091609646-0009*	Asphalt	Black Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
147-2B *091609646-0010*	Asphalt	Black Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
147-3A *091609646-0011*	Guard Rail Shim (Sample Group)	Black Fibrous Homogeneous		60% Non-fibrous (Other)	40% Chrysotile
147-3B *091609646-0012*	Guard Rail Shim (Sample Group)				Positive Stop (Not Analyzed)
147-4A *091609646-0013*	Bearing Pad	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
147-4B *091609646-0014*	Bearing Pad	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected

Initial Report From: 06/01/2016 19:25:50

EMSL Analytical, Inc.
464 McCormick Street San Leandro, CA 94577
Tel/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com / sanleandrolab@emsl.com

EMSL Order: 091609646
Customer ID: GECN21
Customer PO:
Project ID: E8721-02-xx

Analyst(s)

Matthew Batongbacal (2)
Raphael Feliciano (11)

Chris Dojlidko, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Samples received in good condition unless otherwise noted. Estimated accuracy, precision and uncertainty data available upon request. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Reporting limit is 1%

Samples analyzed by EMSL Analytical, Inc San Leandro, CA NVLAP Lab Code 101048-3, WA C884

Initial Report From: 06/01/2016 19:25:50

OrderID: 091609646

EMSL ANALYTICAL, INC.
LABORATORY•PRODUCTS•TRAINING

Asbestos Chain of Custody

EMSL Order Number *(Lab Use Only)*: 091609646

EMSL ANALYTICAL, INC.
464 MCCORMICK STREET
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 230-3537

Company: GEOCON
Street: 6671 BRISA STREET
City: LIVERMORE | State/Province: CA | Zip/Postal Code: 94550 | Country: USA
Report To (Name): CHRIS GIUNTOLI | Fax #: 925-371-5915
Telephone #: 775-685-6116 | Email Address: GIUNTOLI@GEOCONINC.COM
Project Name/Number: E8721-02-51 (CALTRANS)
Please Provide Results: ☐ Fax ☒ Email | Purchase Order: | U.S. State Samples Taken: CA

EMSL-Bill to: ☒ Same ☐ Different
If Bill to is Different note instructions in Comments**
Third Party Billing requires written authorization from third party

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour | ☐ 6 Hour | ☐ 24 Hour | ☐ 48 Hour | ☐ 72 Hour | ☐ 96 Hour | ☒ 1 Week | ☐ 2 Week

**For TEM Air 3 hr through 6 hr, please call ahead to schedule.*There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.*

PCM - Air
- ☐ NIOSH 7400
- ☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
- ☒ PLM EPA 600/R-93/116 (<1%)
- ☐ PLM EPA NOB (<1%)

Point Count
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)

Point Count w/Gravimetric
- ☐ 400 (<0.25%) ☐ 1000 (<0.1%)
- ☐ NYS 198.1 (friable in NY)
- ☐ NYS 198.6 NOB (non-friable-NY)
- ☐ NIOSH 9002 (<1%)

TEM – Air ☐ 4-4.5hr TAT (AHERA only)
- ☐ AHERA 40 CFR, Part 763
- ☐ NIOSH 7402
- ☐ EPA Level II
- ☐ ISO 10312

TEM - Bulk
- ☐ TEM EPA NOB
- ☐ NYS NOB 198.4 (non-friable-NY)
- ☐ Chatfield SOP
- ☐ TEM Mass Analysis-EPA 600 sec. 2.5

TEM – Water: EPA 100.2
- Fibers >10µm ☐ Waste ☐ Drinking
- All Fiber Sizes ☐ Waste ☐ Drinking

TEM- Dust
- ☐ Microvac - ASTM D 5755
- ☐ Wipe - ASTM D6480
- ☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
- ☐ PLM CARB 435 - A (0.25% sensitivity)
- ☐ PLM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - B (0.1% sensitivity)
- ☐ TEM CARB 435 - C (0.01% sensitivity)
- ☐ EPA Protocol (Semi-Quantitative)
- ☐ EPA Protocol (Quantitative)

Other:
- ☐

☒ **Check For Positive Stop – Clearly Identify Homogenous Group** TO >1%

Samplers Name: CHRIS GIUNTOLI | Samplers Signature: [signature]

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
148-1A-1C	CONCRETE		5/25/16
148-2A/2B	ASPHALT		↓
147-1A-1C	CONCRETE		↓
147-2A/2B	ASPHALT		↓
147-3A/3B	GUARD RAIL SHIM (SAMPLE GROUP)		↓
147-4A/4B	BEARING PAD		↓

Client Sample # (s): | Total # of Samples: 14
Relinquished (Client): [signature] Date: 5/26/16 Time: 1146
Received (Lab): ARD Date: 5/26/16 Time: 1145 W
Comments/Special Instructions:

June 03, 2016

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 961-5274
Fax:(925) 371-5915

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1601866

Client Reference : VACAVILLE OVERCROSSINGS (CALTRANS), E8721-02-51

Enclosed are the results for sample(s) received on May 26, 2016 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/03/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
148-P1	1601866-01	Solid	5/25/16 0:00	5/26/16 8:25
148-P2	1601866-02	Solid	5/25/16 0:00	5/26/16 8:25
147-P1	1601866-03	Solid	5/25/16 0:00	5/26/16 8:25
147-P2	1601866-04	Solid	5/25/16 0:00	5/26/16 8:25

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/03/2016

Total Metals by ICP-AES EPA 6010B

Analyte: Lead **Analyst: RR**

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1601866-01	148-P1	**ND**	mg/kg	99	50	B6F0035	06/02/2016	06/02/16 16:06	D5
1601866-02	148-P2	**ND**	mg/kg	2.0	1	B6F0035	06/02/2016	06/02/16 16:08	
1601866-03	147-P1	**26**	mg/kg	2.0	1	B6F0035	06/02/2016	06/02/16 16:10	
1601866-04	147-P2	**16000**	mg/kg	40	20	B6F0035	06/02/2016	06/02/16 15:33	D6

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/03/2016

QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6F0035 - EPA 3050B_S									
Blank (B6F0035-BLK1)					Prepared: 6/2/2016 Analyzed: 6/2/2016				
Lead	ND	1.0			NR				
LCS (B6F0035-BS1)					Prepared: 6/2/2016 Analyzed: 6/2/2016				
Lead	47.6608	1.0	50.0000		95.3	80 - 120			
LCS Dup (B6F0035-BSD1)					Prepared: 6/2/2016 Analyzed: 6/2/2016				
Lead	49.1329	1.0	50.0000		98.3	80 - 120	3.04	20	
Duplicate (B6F0035-DUP1)		**Source: 1601865-01**			Prepared: 6/2/2016 Analyzed: 6/2/2016				
Lead	ND	2.0		ND	NR			20	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/03/2016

Notes and Definitions

D6	Sample required dilution due to high concentration of target analyte.
D5	Sample diluted due to failing internal standard in the original run.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

CHAIN OF CUSTODY RECORD

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

P.O.#: _____ Quote #: _____

Logged By: _____ Date: _____

NOTE: Please include your Quote No. to ensure proper pricing of your project.

FOR LABORATORY USE ONLY:

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☒ GSO ☐ Other: _____

Sample Condition Upon Receipt:
1. CHILLED 4.2 ICE Y ☑ N ☐ 4. CUSTODY SEAL Y ☐ N ☑
2. HEADSPACE (VOA) Y ☐ N ☐ 5. # OF SPLS MATCH COC Y ☑ N ☐
3. CONTAINER INTACT Y ☑ N ☐ 6. PRESERVED Y ☐ N ☑

Client: **Geocon Consultants, Inc.** Address: 6671 Brisa Street TEL: (925) 371-5900
Attn: CHRIS GIUNTOLI City: Livermore State: CA Zip Code: 94550 FAX: (925) 371-5915

Project Name: VACAVILLE OVERCROSSINGS Project #: (CALTRANS) E8721-02-51 Sampler: (Printed Name) CHRIS GIUNTOLI (Signature)

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
[signature]	5/25/16	1700	ARNEL MANGAHAS	5/26/16	0825

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: CG 5/25/16
Print Name Date
Signature

Send Report To: Attn: SEE ABOVE Co: _____ Addr: _____ City: State: Zip:

Bill To: Attn: SAME Co: _____ Addr: _____ City: State: Zip:

Special Instructions/Comments: *SOLUBLE LEAD MAY BE REQUESTED BASED ON TOTAL LEAD RESULTS.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.
Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample Description: Sample I.D. / Location	Date	Time	8081A (Pesticides)	8082 (PCB)	8260B (Volatiles)	8270C (BNA)	6010B (Total Metal)	8015B (GRO) / 8021 (BTEX)	8015B (DRO)	TITLE 22 / CAM 17 (6010 / 7000)	TOTAL LEAD*	SEDIMENT	SOLID	SOIL	DRINKING WATER	GROUND WATER	WASTEWATER	STORMWATER	AQUEOUS	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
	1601866-01	148-P1	5/25/16										X									E	1	P B		
	-2	148-P2											X													
	-3	147-P1											X													
	-4	147-P2											X													

SPECIFY APPROPRIATE MATRIX

QA/QC: RTNE ☐ CT ☒ Legal ☐ SWRCB ☐ Logcode _____ OTHER _____

- TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: ☐A= Overnight ≤ 24 hrs ☐B= Emergency Next workday ☐C= Critical 2 Workdays ☐D= Urgent 3 Workdays ☐E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: **White** with report, **Yellow** to folder, **Pink** to submitter.

June 10, 2016

Chris Giuntoli
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 961-5274
Fax:(925) 371-5915

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1601866

Client Reference : VACAVILLE OVERCROSSINGS (CALTRANS), E8721-02-51

Enclosed are the results for sample(s) received on May 26, 2016 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/10/2016

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
147-P2	1601866-04	Solid	5/25/16 0:00	5/26/16 8:25

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/10/2016

TCLP Metals by ICP-AES EPA 6010B

Analyte: Lead **Analyst: SB**

Laboratory ID	Client Sample ID	Result	Units	PQL	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1601866-04	147-P2	**2.7**	mg/L	0.050	1	B6F0253	06/09/2016	06/10/16 09:46	

Certificate of Analysis

Geocon Consultants, Inc.		Project Number :	VACAVILLE OVERCROSSINGS (CALTRANS), E8721-0
6671 Brisa Street		Report To :	Chris Giuntoli
Livermore , CA 94550		Reported :	06/10/2016

QUALITY CONTROL SECTION

TCLP Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B6F0253 - EPA 3010A_S									
Blank (B6F0253-BLK1)					Prepared: 6/9/2016 Analyzed: 6/10/2016				
Lead	ND	0.050			NR				
LCS (B6F0253-BS1)					Prepared: 6/9/2016 Analyzed: 6/10/2016				
Lead	0.963952	0.050	1.00000		96.4	80 - 120			
Duplicate (B6F0253-DUP1)		**Source: 1601864-42**			Prepared: 6/9/2016 Analyzed: 6/10/2016				
Lead	0.209338	0.050		0.214502	NR		2.44	20	
Matrix Spike (B6F0253-MS1)		**Source: 1601864-42**			Prepared: 6/9/2016 Analyzed: 6/10/2016				
Lead	2.51277	0.050	2.50000	0.214502	91.9	78 - 109			
Matrix Spike Dup (B6F0253-MSD1)		**Source: 1601864-42**			Prepared: 6/9/2016 Analyzed: 6/10/2016				
Lead	2.46696	0.050	2.50000	0.214502	90.1	78 - 109	1.84	20	

Certificate of Analysis

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Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Diane Galvan

From: Chris Giuntoli [giuntoli@geoconinc.com]
Sent: Friday, June 03, 2016 4:57 PM
To: Diane Galvan
Subject: RE: Results/EDD/Invoice - VACAVILLE OVERCROSSINGS (1601866)

Hi Diane,

For order no. 1601866, please run TCLP for lead for sample 147-P2 on a standard TAT.

Thanks and have a good weekend.
Chris