

INFORMATION HANDOUT

PERMITS

CALIFORNIA
CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD
CWDID #5A04CR00207

CALIFORNIA
DEPARTMENT OF FISH AND GAME
NOTIFICATION No. 1600-2011-0183-R2

UNITED STATES
ARMY CORPS OF ENGINEERS
IDENTIFICATION No. SPK-2011-00389

CALIFORNIA
CENTRAL VALLEY FLOOD PROTECTION BOARD
Permit No. 18767 BD

MATERIALS INFORMATION

AERIALY DEPOSITED LEAD AND TRAFFIC STRIPE PAINT SITE INVESTIGATION
REPORT

ASBESTOS AND LEAD-CONTAINING PAINT SURVEY

FOUNDATION REPORT FOR BUTTE CREEK (RIGHT) REPLACE

FINAL HYDRAULIC REPORT, BUTTE CREEK, BRIDGE No. 12-0126R

OPTIONAL MATERIAL SITE

Central Valley Regional Water Quality Control Board

9 May 2012

Ms. Kelley Nelson
Caltrans
703 B Street
Marysville, CA 95901

CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE BUTTE CREEK BRIDGE REPLACEMENT PROJECT (WDID#5A04CR00207), CHICO, BUTTE 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 certification action 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 Title 23 of the California Code of Regulations (23 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 subsection 3855(b) 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 under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. This certification is no longer valid if the project (as currently described) is modified, or coverage under Section 404 of the Clean Water Act has expired.

ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:

In addition to the four standard conditions, Caltrans shall satisfy the following:

1. Caltrans shall notify the Central Valley Regional Water Quality Control Board (Central Valley Water Board) in writing 7 days in advance of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. All areas disturbed by project activities shall be protected from washout or erosion.
4. Caltrans 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.
5. An effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working during all phases of construction.
6. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.
7. Caltrans shall perform surface water sampling: 1) When performing any in-water work; 2) In the event that project activities result in any materials reaching surface waters or; 3) When any activities result in the creation of a visible plume in surface waters. The following monitoring shall be conducted immediately upstream out of the influence of the project and 300 feet downstream of the active work area. Sampling results shall be submitted to this office within two weeks of initiation of sampling and every two weeks thereafter. The sampling frequency may be modified for certain projects with written permission from the Central Valley Water Board.

| Parameter | Unit | Type of Sample | Frequency of Sample |
|---|--------------|-----------------------|---|
| Turbidity | NTU | Grab | Every 4 hours during in water work |
| Settleable Material | ml/l | Grab | Same as above. |
| Visible construction related pollutants | Observations | Visible Inspections | Continuous throughout the construction period |

8. Activities shall not cause turbidity increases in surface water to exceed:
- (a) where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;
 - (b) where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
 - (c) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - (d) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - (e) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be assessed by prior permission of the Central Valley Water Board.

9. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
10. The discharge of petroleum products or other excavated materials to surface water is prohibited. Activities shall not cause visible oil, grease, or foam in the work area or downstream. Caltrans shall notify the Central Valley Water Board immediately of any spill of petroleum products or other organic or earthen materials.
11. Caltrans shall notify the Central Valley Water Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
12. Caltrans must comply with all requirements of U.S. Army Corps of Engineers Nationwide Permit Number 23 (Approved Categorical Exclusions) & 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities), and special conditions for the project.
13. Caltrans shall comply with all of the conditions of the California Department of Fish and Game Lake or Streambed Alteration Agreement for the project.
14. The California Department of Transportation shall comply with their General NPDES Permit Order No 99-06-DWQ (NPDES No. CAS 000003) issued by the State Water Resources Control Board.
15. The Conditions in this water quality certification are based on the information in the attached "Project Information." If the information in the attached Project Information is modified or the project changes, this water quality certification is no longer valid until amended by the Central Valley Water Board.

16. The mitigation measures specified in the mitigation monitoring and reporting program for the approved Mitigated Negative Declaration (Environmental Impact Report) for the project, as they pertain to biology, hydrology and water quality impacts, are included in this Water Quality Certification, as required by California Public Resource Code Section 21081.6 and CEQA Guidelines, California Code of Regulations Section 15097.
17. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under State law and section 401 (d) of the federal Clean Water Act. The applicability of any State law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with this Order.
 - a. If Caltrans or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Order, or falsifies any information provided in the monitoring reports, the applicant is subject to civil monetary liabilities, for each day of violation, or criminal liability.
 - b. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require Caltrans to furnish, under penalty of perjury, any technical or monitoring reports the Central Valley Water Board deems appropriate, provided that the burden, including cost of the reports, shall be in reasonable relationship to the need for the reports and the benefits to be obtained from the reports.
 - c. Caltrans shall allow the staff of the Central Valley Water Board, or their authorized representative, to enter the project premises for 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.
18. Caltrans shall provide a Notice of Completion (NOC) no later than 30 days after the project completion. The NOC shall demonstrate that that the project has been carried out in accordance with the project's description (and any amendments approved). The NOC shall include a map of the project location and representative pre and post construction; photographs. Each photograph shall include a descriptive title, date taken, photographic site, and photographic orientation.

ADDITIONAL STORM WATER QUALITY CONDITIONS:

Caltrans shall also satisfy the following additional storm water quality conditions:

1. During the construction phase, Caltrans must employ strategies to minimize erosion and the introduction of pollutants into storm water runoff. These strategies must include the following:
 - (a) the Storm Water Pollution Prevention Plan (SWPPP) must be prepared during the project planning and design phases and before construction;

- (b) an effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working prior to the rainy season and during all phases of construction.
2. Caltrans must minimize the short and long-term impacts on receiving water quality from the Butte Creek Bridge Replacement Project by implementing the following post-construction storm water management practices:
 - (a) minimize the amount of impervious surface;
 - (b) reduce peak runoff flows;
 - (c) provide treatment BMPs to reduce pollutants in runoff;
 - (d) ensure existing waters of the State (e.g., wetlands, vernal pools, or creeks) are not used as pollutant source controls and/or treatment controls;
 - (e) preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones;
 - (f) limit disturbances of natural water bodies and natural drainage systems caused by development (including development of roads, highways, and bridges);
 - (g) use existing drainage master plans or studies to estimate increases in pollutant loads and flows resulting from projected future development and require incorporation of structural and non-structural BMPs to mitigate the projected pollutant load increases in surface water runoff;
 - (h) identify and avoid development in areas that are particularly susceptible to erosion and sediment loss, or establish development guidance that protects areas from erosion/ sediment loss;
 - (i) control post-development peak storm water run-off discharge rates and velocities to prevent or reduce downstream erosion, and to protect stream habitat.
3. Caltrans must ensure that all development within the project provides verification of maintenance provisions for post-construction structural and treatment control BMPs. Verification shall include one or more of the following, as applicable:
 - (a) the developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; or
 - (b) written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; or
 - (c) written text in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control BMPs; or
 - (d) any other legally enforceable agreement that assigns responsibility for storm water BMP maintenance.
4. 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 Caltrans 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.

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Scott A. Zaitz, R.E.H.S., Redding Branch Office, 415 Knollcrest Drive, Suite 100, Redding, California 96002, szaitz@waterboards.ca.gov, (530) 224-4784

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from Caltrans, Butte Creek Bridge Replacement Project (WDID# 5A04CR00207) 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 strict compliance with Caltrans's project description 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 September 2009.



(for) Pamela C. Creedon
Executive Officer

Enclosure: Project Information

SAZ: wrb/jmtm

cc: Mr. Will Ness, U.S. Army Corp of Engineers, Sacramento
U.S. Fish and Wildlife Service, Sacramento
Department of Fish and Game, Region 2, Rancho Cordova
Mr. Bill Jennings, CALSPA, Stockton

cc by email: Mr. Dave Smith, U.S. EPA, Region 9, San Francisco
Mr. Bill Orme, SWRCB, Certification Unit, Sacramento

PROJECT INFORMATION

Application Date: 26 October 2011

Applicant: Caltrans, Attn: Mr. John Holder

Project Name: Butte Creek Bridge Replacement Project

Application Number: WDID No. 5A04CR00207

Type of Project: Replacement of existing bridge over Butte Creek.

Project Location: Section 8, Township 21 North, Range 2 East, MDB&M.
Latitude: 39°41'39" and Longitude: -121°46'41"

County: Butte County

Receiving Water(s) (hydrologic unit): Butte Creek, which is tributary to Sacramento River.
Butte Creek Hydrologic Unit-Upper Little Chico Hydrologic Area No. 521.30

Water Body Type: Wetlands, Streambed

Designated Beneficial Uses: The Water Quality Control Plan *for the Sacramento River and San Joaquin River*, Fourth Edition, revised September 2009, has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND), Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Cold Freshwater Migration (MIGR); Warm Freshwater Spawning (SPWN); Cold Freshwater Spawning (SPWN); and Wildlife Habitat (WILD).

Project Description (purpose/goal): The Butte Creek Bridge Replacement Project consists of replacing the North Bound Butte Creek Bridge (No. 12-0126 R), on State Route 99, south of the City of Chico. The existing North Bound Bridge needs to be replaced due to critical sub-scouring and deck failure. To accomplish this work, Caltrans is proposing to split the NB traffic to maintain two NB and two southbound (SB) lanes to allow for half-width bridge construction. The left bridge would accommodate three lanes of traffic (two SB and 1 NB), requiring a one-lane median crossover detour. The crossover would occur before Butte Creek. The right bridge would accommodate one lane of NB traffic during construction. This would result in a two span bridge and take three construction seasons to complete.

The new NB Bridge would be a reinforced concrete box girder bridge. Two abutments on piles and one pier wall on spread footings would support the two-span structure. The new bridge would be constructed on the existing tangent alignment, and would be approximately 324 feet long with two 12-foot wide lanes. There would be a 5-foot-wide shoulder on the left side, and 10-foot wide shoulder on the right side. Deck drains will be needed on the new bridge to drain storm water. Also, construction of temporary false work, cofferdams, RSP, and a creek diversion/crossing would be required for the construction of the new bridge.

Road work involves removing and replacing failed pavement areas, reconstructing existing shoulders, placing new Asphalt Concrete (AC) pavement, grinding Portland Cement Concrete (PCC) pavement (at SB conforms and SB bridge ends), constructing a temporary crossover median detour, temporary culverts, extending existing culverts, replacing down-drains and over-side drains, placing RSP, removing and replacing flashing beacons and traffic sensors, installing temporary highway lighting, and new bridge approach metal beam guard railing. Open graded friction course (OGFC) will be placed as a final wearing surface.

The contractor will likely dewater the cofferdams around the piers by pumping directly into the existing ditches north and south of the levees along the east side of SR 99. The mobile filtration boxes may be used for any dewatering needs instead of pumping water out of cofferdams into trucks or into existing drainage ditches. The contractor may also propose to use temporary sediment basins.

Preliminary Water Quality Concerns: Construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: Caltrans will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Caltrans will conduct turbidity and settleable matter testing during in-water work, stopping work if Basin Plan criteria are exceeded or are observed.

Fill/Excavation Area: Project implementation will permanently impact 1.71 acres of riparian and 0.08 acres of un-vegetated streambed and temporarily impact 0.25 acres of riparian and 0.002 acres of un-vegetated streambed.

Dredge Volume: 370 cubic yards of fill material.

Possible Listed Species: Not Applicable

U.S. Army Corps File Number: SPK-2011-00389

U.S. Army Corps of Engineers Permit Number: Nationwide Permit #23 & #27

California Department of Fish and Game Lake and Streambed Alteration Agreement: Caltrans applied for a Streambed Alteration Agreement in October 2011 (Lake & Streambed Alteration Agreement Number: 1600-2011-0183-R2).

Status of CEQA Compliance: The California Department of Transportation signed a Notice of Determination on 18 October 2010 approving a Mitigated Negative Declaration stating the project will not have a significant effect on the environment.

Compensatory Mitigation: The applicant is proposing to mitigate for the loss of jurisdictional waters by planting riparian trees at a 3:1 ratio at three different locations approximately 300 yards upstream of the project.

Application Fee Provided: On 26 October 2011 a certification application fee of \$1,357.00 was submitted as required by 23 CCR §3833b(3)(A) and by 23 CCR §2200(e). A remaining

certification fee of \$9,971 was received on 2 December 2011 as required by 23 CCR §3833b(2)(A) and by 23 CCR § 2200(e).

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)**

The State Water Resources Control Board (SWRCB) finds that:

1. Discharges eligible for coverage under these General WDRs are discharges of dredged or fill material that have received State Water Quality Certification (Certification) pursuant to federal Clean Water Act (CWA) section 401.
2. Discharges of dredged or fill material are commonly associated with port development, stream channelization, utility crossing land development, transportation water resource, and flood control projects. Other activities, such as land clearing, may also involve discharges of dredged or fill materials (e.g., soil) into waters of the United States.
3. CWA section 404 establishes a permit program under which the U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredged or fill material into waters of the United States.
4. CWA section 401 requires every applicant for a federal permit or license for an activity that may result in a discharge of pollutants to a water of the United States (including permits under section 404) to obtain Certification that the proposed activity will comply with State water quality standards. In California, Certifications are issued by the Regional Water Quality Control Boards (RWQCB) or for multi-Region discharges, the SWRCB, in accordance with the requirements of California Code of Regulations (CCR) section 3830 et seq. The SWRCB's water quality regulations do not authorize the SWRCB or RWQCBs to waive certification, and therefore, these General WDRs do not apply to any discharge authorized by federal license or permit that was issued based on a determination by the issuing agency that certification has been waived. Certifications are issued by the RWQCB or SWRCB before the ACOE may issue CWA section 404 permits. Any conditions set forth in a Certification become conditions of the federal permit or license if and when it is ultimately issued.
5. Article 4, of Chapter 4 of Division 7 of the California Water Code (CWC), commencing with section 13260(a), requires that any person discharging or proposing to discharge waste, other than to a community sewer system, that could affect the quality of the waters of the State,¹ file a report of waste discharge (ROWD). Pursuant to Article 4, the RWQCBs are required to prescribe waste discharge requirements (WDRs) for any proposed or existing discharge unless WDRs are waived pursuant to CWC section 13269. These General WDRs fulfill the requirements of Article 4 for proposed dredge or fill discharges to waters of the United States that are regulated under the State's CWA section 401 authority.

¹ "Waters of the State" as defined in CWC Section 13050(e)

6. These General WDRs require compliance with all conditions of Certification orders to ensure that water quality standards are met.
7. The U.S. Supreme Court decision of *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001) (the *SWANCC* decision) called into question the extent to which certain “isolated” waters are subject to federal jurisdiction. The SWRCB believes that a Certification is a valid and enforceable order of the SWRCB or RWQCBs irrespective of whether the water body in question is subsequently determined not to be federally jurisdictional. Nonetheless, it is the intent of the SWRCB that all Certification conditions be incorporated into these General WDRs and enforceable hereunder even if the federal permit is subsequently deemed invalid because the water is not deemed subject to federal jurisdiction.
8. The beneficial uses for the waters of the State include, but are not limited to, domestic and municipal supply, agricultural and industrial supply, power generation, recreation, aesthetic enjoyment, navigation, and preservation and enhancement of fish, wildlife, and other aquatic resources.
9. Projects covered by these General WDRs shall be assessed a fee pursuant to Title 23, CCR section 3833.
10. These General WDRs are exempt from the California Environmental Quality Act (CEQA) because (a) they are not a “project” within the meaning of CEQA, since a “project” results in a direct or indirect physical change in the environment (Title 14, CCR section 15378); and (b) the term “project” does not mean each separate governmental approval (Title 14, CCR section 15378(c)). These WDRs do not authorize any specific project. They recognize that dredge and fill discharges that need a federal license or permit must be regulated under CWA section 401 Certification, pursuant to CWA section 401 and Title 23, CCR section 3855, et seq. Certification and issuance of waste discharge requirements are overlapping regulatory processes, which are both administered by the SWRCB and RWQCBs. Each project subject to Certification requires independent compliance with CEQA and is regulated through the Certification process in the context of its specific characteristics. Any effects on the environment will therefore be as a result of the certification process, not from these General WDRs. (Title 14, CCR section 15061(b)(3)).
11. Potential dischargers and other known interested parties have been notified of the intent to adopt these General WDRs by public hearing notice.
12. All comments pertaining to the proposed discharges have been heard and considered at the November 4, 2003 SWRCB Workshop Session.
13. The RWQCBs retain discretion to impose individual or general WDRs or waivers of WDRs in lieu of these General WDRs whenever they deem it appropriate. Furthermore, these General WDRs are not intended to supersede any existing WDRs or waivers of WDRs issued by a RWQCB.

IT IS HEREBY ORDERED that WDRs are issued to all persons proposing to discharge dredged or fill material to waters of the United States where such discharge is also subject to the water quality certification requirements of CWA section 401 of the federal Clean Water Act (Title 33 United States Code section 1341), and such certification has been issued by the applicable RWQCB or the SWRCB, unless the applicable RWQCB notifies the applicant that its discharge will be regulated through WDRs or waivers of WDRs issued by the RWQCB. In order to meet the provisions contained in Division 7 of CWC and regulations adopted thereunder, dischargers shall comply with the following:

1. Dischargers shall implement all the terms and conditions of the applicable CWA section 401 Certification issued for the discharge. This provision shall apply irrespective of whether the federal license or permit for which the Certification was obtained is subsequently deemed invalid because the water body subject to the discharge has been deemed outside of federal jurisdiction.
2. Dischargers are prohibited from discharging dredged or fill material to waters of the United States without first obtaining Certification from the applicable RWQCB or SWRCB.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on November 19, 2003.

AYE: Arthur G. Baggett, Jr.
Peter S. Silva
Richard Katz
Gary M. Carlton
Nancy H. Sutley

NO: None.

ABSENT: None.

ABSTAIN: None.


Debbie Irvin
Clerk to the Board



1701 Nimbus Road, Suite A
Rancho Cordova, CA 95667
(916) 358-2900
<http://www.dfg.ca.gov>



May 29, 2012

John Holder
California Department of Transportation
703 B Street
Marysville, CA 95901

Subject: Amendment of Lake or Streambed Alteration Agreement Notification No. 1600-2011-0183-R2
SR 99 BUTTE CREEK BRIDGE REPLACEMENT PROJECT

Dear Mr. Holder:

The Department of Fish and Game (Department) has received your request to amend Lake or Streambed Alteration Agreement No. 1600-2011-0183-R2 (Agreement) and the required fee in the amount of \$168 for a minor amendment. Your request to amend the Agreement includes:

The original 1602 stipulated that riparian mitigation plantings would occur adjacent to the SR 99 Bridge along Butte Creek. Due to unforeseen requirements by the Department of Water Resources, plantings are not allowed adjacent to the SR 99 Bridge.

In order to fulfill mitigation requirements, Caltrans received permission to use nearby DFG land for riparian plantings. Three locations were identified for mitigation plantings, ranging from approximately 650-feet to 1200-feet upstream from the SR 99 Bridge, along either side of Butte Creek. A mitigation and monitoring plan has been prepared for these new locations. "Onsite Mitigation and Monitoring Proposal for the California Department of Transportation's Butte Creek Bridge Replacement Project on State Route 99 in Butte County" is hereby incorporated into this agreement to describe the new location, features, and mitigation measures of the proposed project.

The Department hereby agrees to amend the agreement as requested. All other conditions in the Agreement remain in effect.

Copies of the Agreement and this amendment must be readily available at project worksites and must be presented when requested by a Department representative or agency with inspection authority.

If you have any questions regarding this matter, please contact Tim Nosal at (916) 358-2853 or tnosal@dfg.ca.gov.

Sincerely,

KAS Kent A. Smith
Regional Manager

cc: Tim Nosal
Kelley Nelson

CALIFORNIA DEPARTMENT OF FISH AND GAME
NORTH CENTRAL REGION
1701 NIMBUS ROAD, SUITE A
RANCHO CORDOVA, CA 95670



STREAMBED ALTERATION AGREEMENT
NOTIFICATION No. 1600-2011-0183-R2
Butte Creek

California Department of Transportation
SR 99 BUTTE CREEK BRIDGE REPLACEMENT PROJECT

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and California Department of Transportation (Caltrans) (Permittee) as represented by John Holder.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified DFG on October 11, 2011 that Permittee intends to complete the project described herein.

WHEREAS, pursuant to FGC section 1603, DFG has determined that the project could substantially adversely affect existing fish or wildlife resources and has included measures in the Agreement necessary to protect those resources.

WHEREAS, Permittee has reviewed the Agreement and accepts its terms and conditions, including the measures to protect fish and wildlife resources.

NOW THEREFORE, Permittee agrees to complete the project in accordance with the Agreement.

PROJECT LOCATION

The project is located at Butte Creek, tributary to Sacramento River, in the County of Butte, State of California; Latitude $39^{\circ}41'39''$ N, Longitude $-121^{\circ}46'41''$ or Section 8, Township 21 N, Range 2 E, U.S. Geological Survey (USGS) map Chico, Mt. Diablo base and meridian (Attachment A).

PROJECT DESCRIPTION

Caltrans proposes to the replace the northbound (NB) Butte Creek Bridge (Br. No 12-0126R) on SR 99 in Butte County with a new bridge constructed on the existing NB alignment. One CDFG jurisdictional culvert will be extended a distance of 16 feet, to

allow for construction activities and temporary widening on the southbound (SB) side to accommodate detoured traffic flow.

A cofferdam may be constructed around the single pier of the new structure prior to construction of the pier's concrete spread footing. The cofferdam will consist of sheet piles driven around the perimeter of the foundation and can be dewatered if necessary. Caltrans will also enhance salmonid habitat upstream and downstream of the bridge project site by gravel augmentation.

Construction is scheduled to begin in 2012, and conclude in 2015 (3 construction seasons).

A detailed project description is provided in the notification materials submitted to DFG. The notification, together with all supporting documents submitted with the notification;

- "Initial Study with Mitigated Negative Declaration (03-BUT-99-28.1/29.6) 03-3E620" dated October 2010;
- Project Maps for the Butte Creek Bridge Replacement Project, various dates;
- Butte Creek Bridge Replacement Project Description, dated August 24, 2011;
- "Butte Creek Project Area – CDFG Jurisdictional Waters" undated;
- ESL Map for the Butte Creek Bridge Project (2 pages), dated August 17, 2011;
- "Floodplain Hydraulic Study for But-99 Replace Butte Creek Bridge (EA 03-3E6200)", dated October 20, 2008;
- "Final Hydraulic Report, Butte Creek (3-BUT-99, EA 3-3E6201)" dated April 6, 2011; Environmental Re-validation map for the Butte Creek Bridge Project, dated August 22, 2011; and
- "Butte Creek Bridge Replacement Project: Natural Environment Study–near the City of Chico, Northbound Highway 99, (03-BUT-99-28.1/29.6) 03-3E620" dated February 2010;

are hereby incorporated into this agreement to describe the location, features, avoidance measures and mitigation measures of the proposed project.

PROJECT IMPACTS

Existing fish or wildlife resources the project could substantially adversely affect include: riparian and wetland vegetation including native oaks, sycamore alder, cottonwood and elderberry; invertebrates including the valley elderberry longhorn beetle; cold-water fish species including Central Valley steelhead trout and Central Valley spring-run Chinook salmon; nesting migratory birds and other wildlife species.

The adverse effects the project could have on the fish or wildlife resources identified above include: temporary diversion of flow water from, or around, activity site; short-term increased turbidity and increased sedimentation; loss or decline of riparian and

wetland habitat; disturbance from project activity; direct take of terrestrial species and direct take of fish and non-fish aquatic species.

MEASURES TO PROTECT FISH AND WILDLIFE RESOURCES

1. Administrative Measures

Permittee shall meet each administrative requirement described below.

- 1.1 Documentation at Project Site. Permittee shall make the Agreement, any extensions and amendments to the Agreement, and all related notification materials and California Environmental Quality Act (CEQA) documents, readily available at the project site at all times and shall be presented to DFG personnel, or personnel from another state, federal, or local agency upon request.
- 1.2 Providing Agreement to Persons at Project Site. Permittee shall provide copies of the Agreement and any extensions and amendments to the Agreement to all persons who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, inspectors, and monitors.
- 1.3 Notification of Conflicting Provisions. Permittee shall notify DFG if Permittee determines or learns that a provision in the Agreement might conflict with a provision imposed on the project by another local, state, or federal agency. In that event, Permittee shall contact DFG to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that DFG personnel may enter the project site at any time to verify compliance with the Agreement.
- 1.5 Authorized Work. The notification, together with all supporting documents submitted with the notification, is hereby incorporated into this agreement to describe the location and features of the proposed project. The Permittee agrees that all work shall be done as described in the notification and supporting documents, incorporating all project modifications, wildlife resource protection features, mitigation measures, and provisions as described in this agreement. Where apparent conflicts exist between the notification and the provisions listed in this agreement, the Permittee shall comply with the provisions listed in this agreement. The Permittee further agrees to notify DFG of any modifications made to the project plans submitted to DFG. At the discretion of DFG, this agreement will be amended to accommodate modifications to the project plans submitted to DFG and/or new project activities.

2. Avoidance and Minimization Measures

To avoid or minimize adverse impacts to fish and wildlife resources identified above, Permittee shall implement each measure listed below.

- 2.1 Work Period. The time period for completing the work within the stream zone (i.e. the bed, bank and channel of Butte Creek) shall be restricted to periods of low stream flow and dry weather and shall be confined to the period of July 15 to October 15. Construction activities shall be timed with awareness of precipitation forecasts and likely increases in stream flow. Construction activities within the stream zone shall cease until all reasonable erosion control measures, inside and outside of the stream zone, have been implemented prior to all storm events. Revegetation, restoration and erosion control work is not confined to this time period.
- 2.2 Work Period Extensions. At DFG's discretion, the work period may be extended based on the extent of the work remaining, on site conditions and reasonably anticipated future conditions. If the Permittee finds more time is needed to complete the authorized activity, the Permittee shall submit a written request for a work period time extension to DFG. The work period extension request shall provide the following information: 1) Describe the extent of work already completed; 2) Provide specific detail of the activities that remain to be completed within the stream zone; and 3) Detail the actual time required to complete each of the remaining activities within the stream zone. The work period extension request should consider the effects of increased stream conditions, rain delays, increased erosion control measures, limited access due to saturated soil conditions, and limited growth of erosion control grasses due to cool weather. Photographs of the work completed and the proposed work areas are helpful in assisting DFG in its evaluation. Time extensions are issued at the discretion of DFG. DFG will have ten calendar days to approve the proposed work period extension. DFG reserves the right to require additional measures designed to protect natural resources.
- 2.3 Stream Diversions. Proposed work in the flowing portion of the stream is unavoidable. Stream flow shall be diverted using gravity flow through temporary culverts/pipes. When any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water shall at all times be allowed to pass downstream to maintain aquatic life below the dam pursuant to Fish and Game Code section 5937. Any temporary dam or other artificial obstruction constructed shall only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel which will cause little or no siltation. Stream diversion plans not included in the Project Description (above) shall be submitted to DFG for approval.
- 2.4 Bird Nests. It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird except as otherwise provided by the Fish and Game Code. No trees

that contain active nests of birds shall be disturbed until all eggs have hatched and young birds have fledged without prior consultation and approval of a Department representative.

- 2.5 Vegetation Removal. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. Except for the trees specifically identified for removal in the notification, no native trees with a trunk diameter at breast height (DBH) in excess of four (4) inches shall be removed or damaged without prior consultation and approval of a Department representative. Using hand tools (clippers, chain saw, etc.), trees may be trimmed to the extent necessary to gain access to the work sites. All cleared material/vegetation shall be removed out of the riparian/stream zone.
- 2.6 Sediment Control. Precautions to minimize turbidity/siltation shall be taken into account during project planning and implementation. This may require the placement of silt fencing, coir logs, coir rolls, straw bale dikes, or other siltation barriers so that silt and/or other deleterious materials are not allowed to pass to downstream reaches. Passage of sediment beyond the sediment barrier(s) is prohibited. If any sediment barrier fails to retain sediment, corrective measures shall be taken. The sediment barrier(s) shall be maintained in good operating condition throughout the construction period and the following rainy season. Maintenance includes, but is not limited to, removal of accumulated silt and/or replacement of damaged silt fencing, coir logs, coir rolls, and/or straw bale dikes. **Products with plastic monofilament or synthetic netting (such as found in straw wattles/fiber rolls and some erosion control blankets) shall not be allowed.** Wildlife-friendly erosion control and sediment control products that will not entangle snakes and other wildlife shall be used. Special provisions shall be included in the bid solicitation package that prohibit the use of monofilament or jute netting. If this is not possible, the contractors, subcontractors and anyone performing erosion or sediment control work on this project, shall be specifically instructed that these products are not allowed on the work site. Upon Department determination that turbidity/siltation levels resulting from project related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective Department approved control devices are installed or abatement procedures are initiated.
- 2.7 Pollution Control. Utilize Best Management Practices (BMPs) to prevent spills and leaks into water bodies. If maintenance or refueling of vehicles or equipment must occur on-site, use a designated area and/or a secondary containment, located away from drainage courses to prevent the runoff of storm water and the runoff of spills. Ensure that all vehicles and equipment are in good working order (no leaks). Place drip pans or absorbent materials under vehicles and equipment when not in use. Ensure that all construction areas have proper spill clean up materials (absorbent pads, sealed containers, booms, etc.) to contain the movement of any spilled substances. Any other substances which could be

hazardous to aquatic life, resulting from project related activities, shall be prevented from contaminating the soil and/or entering the waters of the state. Any of these materials, placed within or where they may enter a stream or lake by the Applicant or any party working under contract or with the permission of the Permittee, shall be removed immediately. DFG shall be notified immediately by the Permittee of any spills and shall be consulted regarding clean-up procedures.

3. Compensatory Measures

To compensate for adverse impacts to fish and wildlife resources identified above that cannot be avoided or minimized, Permittee shall implement each measure listed below.

- 3.1 Habitat Restoration Plan. Riparian areas and wetland habitats temporarily disturbed by construction shall be replanted with native species typically found in the area. A restoration/revegetation plan shall be prepared by a qualified revegetation ecologist. The revegetation plan shall be submitted to DFG for approval.
- 3.2 Habitat Restoration. All temporarily impacted areas and access points within the stream zone shall be restored to their original condition, as outlined in the Revegetation Plan. Seeded areas shall be covered with broadcast straw and/or a non-entangling biodegradable erosion control blanket. Monofilament and non-biodegradable synthetic erosion blankets are not authorized.
- 3.3 Mitigation Measures: The Permittee shall follow all mitigation measures outlined in the Mitigated Negative Declaration and other supporting documents noted in the Project Description (page 2 of this agreement).

4. Reporting Measures

Permittee shall meet each reporting requirement described below.

- 4.1 Start and End of Work Notification. The Permittee shall notify DFG at least two working days before beginning work within the stream zone and at least one working day before ending work. Notification shall be submitted as instructed in Contact Information section below. Email notification is preferred.
- 4.2 Photographs of Completed Work. Upon completion of the project activities described in this agreement, the work area within the stream zone shall be digitally photographed. Photographs shall be submitted to DFG within one week of completion. Photographs and project commencement notification shall be submitted as instructed in Contact Information section below. Email submittal is preferred. Refer to Notification Number when submitting photographs.

CONTACT INFORMATION

Any communication that Permittee or DFG submits to the other shall be in writing and any communication or documentation shall be delivered to the address below by U.S. mail, fax, or email, or to such other address as Permittee or DFG specifies by written notice to the other.

To Permittee:

John Holder
California Department of Transportation
703 B Street
Marysville, CA 95901
Fax: (530) 741-4390
Email: John_holder@dot.ca.gov

To DFG:

Department of Fish and Game
North Central Region
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
Attn: Lake and Streambed Alteration Program – Tim Nosal
Notification #1600-2011-0046 R2

Fax: 916-358-2912
Email: tnosal@dfg.ca.gov

LIABILITY

Permittee shall be solely liable for any violations of the Agreement, whether committed by Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents or contractors and subcontractors, to complete the project or any activity related to it that the Agreement authorizes.

This Agreement does not constitute DFG's endorsement of, or require Permittee to proceed with the project. The decision to proceed with the project is Permittee's alone.

SUSPENSION AND REVOCATION

DFG may suspend or revoke in its entirety the Agreement if it determines that Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, is not in compliance with the Agreement.

Before DFG suspends or revokes the Agreement, it shall provide Permittee written notice by certified or registered mail that it intends to suspend or revoke. The notice shall state the reason(s) for the proposed suspension or revocation, provide Permittee an opportunity to correct any deficiency before DFG suspends or revokes the Agreement, and include instructions to Permittee, if necessary, including but not limited to a directive to immediately cease the specific activity or activities that caused DFG to issue the notice.

ENFORCEMENT

Nothing in the Agreement precludes DFG from pursuing an enforcement action against Permittee instead of, or in addition to, suspending or revoking the Agreement.

Nothing in the Agreement limits or otherwise affects DFG's enforcement authority or that of its enforcement personnel.

OTHER LEGAL OBLIGATIONS

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from obtaining any other permits or authorizations that might be required under other federal, state, or local laws or regulations before beginning the project or an activity related to it.

This Agreement does not relieve Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, from complying with other applicable statutes in the FGC including, but not limited to, FGC sections 2050 et seq. (threatened and endangered species), 3503 (bird nests and eggs), 3503.5 (birds of prey), 5650 (water pollution), 5652 (refuse disposal into water), 5901 (fish passage), 5937 (sufficient water for fish), and 5948 (obstruction of stream).

Nothing in the Agreement authorizes Permittee or any person acting on behalf of Permittee, including its officers, employees, representatives, agents, or contractors and subcontractors, to trespass.

AMENDMENT

DFG may amend the Agreement at any time during its term if DFG determines the amendment is necessary to protect an existing fish or wildlife resource.

Permittee may amend the Agreement at any time during its term, provided the amendment is mutually agreed to in writing by DFG and Permittee. To request an

amendment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the corresponding amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

TRANSFER AND ASSIGNMENT

This Agreement may not be transferred or assigned to another entity, and any purported transfer or assignment of the Agreement to another entity shall not be valid or effective, unless the transfer or assignment is requested by Permittee in writing, as specified below, and thereafter DFG approves the transfer or assignment in writing.

The transfer or assignment of the Agreement to another entity shall constitute a minor amendment, and therefore to request a transfer or assignment, Permittee shall submit to DFG a completed DFG "Request to Amend Lake or Streambed Alteration" form and include with the completed form payment of the minor amendment fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5).

EXTENSIONS

In accordance with FGC section 1605(b), Permittee may request one extension of the Agreement, provided the request is made prior to the expiration of the Agreement's term. To request an extension, Permittee shall submit to DFG a completed DFG "Request to Extend Lake or Streambed Alteration" form and include with the completed form payment of the extension fee identified in DFG's current fee schedule (see Cal. Code Regs., tit. 14, § 699.5). DFG shall process the extension request in accordance with FGC 1605(b) through (e).

If Permittee fails to submit a request to extend the Agreement prior to its expiration, Permittee must submit a new notification and notification fee before beginning or continuing the project the Agreement covers (Fish & G. Code, § 1605, subd. (f)).

EFFECTIVE DATE

The Agreement becomes effective on the date of DFG's signature, which shall be: 1) after Permittee's signature; 2) after DFG complies with all applicable requirements under the California Environmental Quality Act (CEQA); and 3) after payment of the applicable FGC section 711.4 filing fee listed at http://www.dfg.ca.gov/habcon/ceqa/ceqa_changes.html.

TERM

This Agreement shall expire on December 30, 2015, unless it is terminated or extended before then. All provisions in the Agreement shall remain in force throughout its term. Permittee shall remain responsible for implementing any provisions specified herein to

protect fish and wildlife resources after the Agreement expires or is terminated, as FGC section 1605(a)(2) requires.

EXHIBITS

- Attachment A: Maps –
 - Location and Vicinity Map (Exhibit 1)
 - Environmental Study Limits – Plan View (Exhibit 4)
 - Environmental Study Limits – Plan View (Exhibit 5)

AUTHORITY

If the person signing the Agreement (signatory) is doing so as a representative of Permittee, the signatory hereby acknowledges that he or she is doing so on Permittee's behalf and represents and warrants that he or she has the authority to legally bind Permittee to the provisions herein.

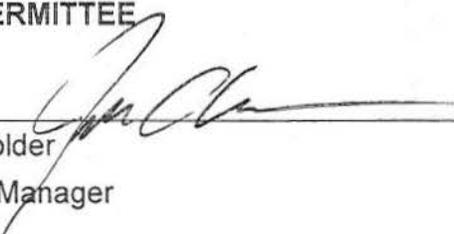
AUTHORIZATION

This Agreement authorizes only the project described herein. If Permittee begins or completes a project different from the project the Agreement authorizes, Permittee may be subject to civil or criminal prosecution for failing to notify DFG in accordance with FGC section 1602.

CONCURRENCE

The undersigned accepts and agrees to comply with all provisions contained herein.

FOR PERMITTEE



John Holder
Project Manager

1-12-12

Date

FOR DEPARTMENT OF FISH AND GAME



Kent Smith
Regional Manager

1/20/2012

Date

Prepared by: Tim Nosal
Environmental Scientist



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

REPLY TO
ATTENTION OF

May 21, 2012

Regulatory Division (SPK-2011-00389)

State of California
Department of Transportation
Attn: Mr. John Holder
703 B Street/P.O. Box 911
Marysville, California 95901

Dear Mr. Holder:

We are responding to your May 7, 2012 request for a Department of the Army Nationwide Permit (NWP) verification for the State Route (SR) 99 Butte Creek Scour Repair and Gravel Augmentation Project (EA 03-3E6201). We received your request and Pre-construction Notification (PCN) package on May 10, 2012. On May 17, 2012, we determined your PCN was complete.

This approximately 8-acre project involves activities, including discharge of dredged or fill material, into Butte Creek to construct a new north bound bridge, a temporary creek diversion system (gravel pad), and enhance salmonid habitat upstream and downstream of the newly constructed bridge. The project is located on State Route 99, PM 28.4 to 29.2, Section 8, Township 21 North, Range 2 East, Mount Diablo Meridian, Latitude 39.6942557031948°, Longitude - 121.778056008554°, near the City of Chico, Butte County, California.

Based on the information you've provided, the proposed discharge of rock slope protection (RSP) at Abutment 1, resulting in the permanent loss of approximately 0.04 acres (40 lf) of perennial stream, is authorized by Nationwide Permit Number 23, and the proposed discharge of approved salmon spawning gravel upstream and downstream of the impact site, resulting in the enhancement of 1.7 acres of perennial stream (salmonid habitat), is authorized by Nationwide Permit Number 27. You are authorized to place approximately 3,070 cubic yards of fill material (370 cubic yards of RSP + 2,700 cubic yards of clean spawning gravel) below the OHWM in Butte Creek as indicated on the enclosed October 24, 2011 *Delineation Map* drawing prepared by Caltrans. Approximately 1,350 cubic yards of clean spawning gravel may be discharged annually for no more than two construction seasons, totaling approximately 2,700 cubic yards, for the salmonid habitat restoration project.

We understand the State of California, Department of Transportation (Caltrans) is the National Environmental Policy Act (NEPA) lead Federal agency for this project, and as such, will ensure the authorized work complies with the National Environmental Policy Act, the Endangered Species Act, the National Historical Preservation Act and any other applicable federal laws.

Your work must comply with enclosed Nationwide Permits 23 and 27 **General Terms and Conditions**, Sacramento District Nationwide **Regional Condition #'s 5 – 8 and 11 – 14**, for California, excluding the Lake Tahoe Basin, and the following **Special Conditions**:

Special Conditions

1. You shall comply with all terms and condition of the attached May 9, 2012, Section 401 Water Quality Certification (WDID#5A04CR00207).

2. This Corps permit does not authorize you to take an endangered species, in particular the federally threatened valley elderberry longhorn beetle (*Desmocerus californiacus*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (e.g., an Endangered Species Act Section 10 permit, or a Biological Opinion under Endangered Species Act Section 7, with "incidental take" provisions with which you must comply). The enclosed Fish and Wildlife Service Biological Opinion (Number 81420-2010-F-0985-1, dated October 7, 2010 and 81420-2010-I-0985-2, dated November 1, 2010), contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the Biological Opinion. Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with "incidental take" of the attached Biological Opinion, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the Biological Opinion, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The U. S. Fish and Wildlife Service is the appropriate authority to determine compliance with the terms and conditions of its Biological Opinion, and with the Endangered Species Act. If you are unable to implement any of these conditions, you must immediately notify this office, and the U.S. Fish and Wildlife Service, so Caltrans acting as the lead Federal agency may consult as appropriate, in accordance with 23 CFR 773 under the FHWA's Surface Transportation Project Delivery Pilot Program, and NEPA delegation effective July 1, 2007.

3. To ensure your project complies with the Federal Endangered Species Act, you must implement all of the mitigating measures identified in the enclosed National Marine Fisheries Service letter of concurrence (2010/03285, dated September 17, 2010), including those ascribed to Caltrans and the Corps therein. If you are unable to implement any of these measures, you must immediately notify this office, and the National Marine Fisheries Service, so Caltrans acting as the lead Federal agency may consult as appropriate, in accordance with 23 CFR 773 under the FHWA's Surface Transportation Project Delivery Pilot Program, and NEPA delegation effective July 1, 2007.

4. Within 30 days prior to initiation of construction activities within waters of the United States, you shall submit to this office pre-construction photographs of the proposed permanent and temporary discharge areas in waters of the U.S. and landscape view photographs of all major project features, which have been taken no more than 1 year prior to initiation of construction

activities. Photos, maps and/or drawings may be submitted electronically to regulatory-info@usace.army.mil.

5. Within 30 days of initiating construction activities within waters of the United States, you shall submit to this office, **final** construction site plans and drawings depicting; Environmentally Sensitive Areas (ESA), Disposal, Staging, and Borrow (DBS) Areas, Access, Grading, and Drainage plans, and Storm Water Management or Pollution Control plans. Plans, maps and/or drawings may be submitted electronically to regulatory-info@usace.army.mil.

6. Within 30 days following construction activities within waters of the United States, you shall submit to this office post-construction photographs of the same locations as the pre-construction photographs, showing the placement and/or removal of fill within waters of the United States and landscape view photographs of all major project features. The photo point locations, camera positions and view angles of pre and post-construction photographs shall be identical and identified on a map, aerial photo, or project drawing. Photos, maps and/or drawings may be submitted electronically to regulatory-info@usace.army.mil.

7. If any of the above conditions are violated or unauthorized activities occur, you shall stop work and immediately notify this office. You shall provide us with a detailed description of the unauthorized activity(s), photo documentation, and any measures taken to remedy the violation.

8. You shall notify this office of any proposed modifications to the project, including revisions to any of the work plans or documents cited in this authorization, for review and approval prior to construction work associated with the proposed modification(s).

9. You must sign the enclosed Compliance Certification and return it, along with items listed in **Regional Condition #8**, to this office within 30 days after completion of the authorized work.

This verification is valid for two years from the date of this letter or until the Nationwide Permits are modified, reissued, or revoked, whichever comes first. Failure to comply with the General and Regional Conditions of these Nationwide Permits, or the project-specific Special Conditions of this authorization, may result in the suspension or revocation of your authorization.

We would 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-2011-00389 in any correspondence concerning this project. If you have any questions, please contact Ms. Leah Fisher at our California South Regulatory Branch at 1325 J Street, Room 1350, Sacramento, California 95814-2922, email *Leah.M.Fisher@usace.army.mil*, or telephone 916-557-6639. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/regulatory.html*.

Sincerely,



Paul M. Maniccia
Chief, California South Branch

Enclosure(s)

Copies Furnished without enclosure(s)

Jason Hanni, U.S. Fish and wildlife Service, 2800 Cottage Way, Room W-2605, Sacramento, Ca 95825-1846

Dylan VanDyne, National Marine Fisheries Service, 650 Capitol Mall, Suite 5-100, Sacramento, Ca 95814

Paul Jones, U.S. Environmental Protection Agency, 75 Hawthorne Street (WTR-8), San Francisco, Ca 94105

Jenny Marr, California Department of Fish and Game, North Central Region, 629 Entler Ave. Bld. 2, Suite 11, Chico, Ca 95928-7424

Scott Zaitz, California Regional Water Quality Control Board, 415 Knollcrest Drive, Redding, Ca 96002

Cy Oggins, California State Lands Commission, 100 Howe Avenue, Suite 100 South, Sacramento, Ca 95825-8202

Steve Dawson, Central Valley Flood Protection Board, 3310 El Camino Avenue, Room 151, Sacramento, Ca 95821

Kelley Nelson, California Department of Transportation, 703 B Street/P.O. Box 911 Marysville, California 95901

Sharon Stacey, California Department of Transportation, 1031 Butte Street, MS 30, Redding, California 96001

COMPLIANCE CERTIFICATION

Permit File Number: SPK-2011-00389, SR99 Butte Creek Bridge Scour Repair Project

Nationwide Permit Number: 23 and 27

Permittee: State of California
Department of Transportation
Attn: Mr. John Holder
703 B Street/P.O. Box 911
Marysville, California 95901

County: Butte

Date of Verification: May 21, 2012

Within 30 days after completion of the activity authorized by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
Sacramento District
1325 J Street, Room 1350
Sacramento, California 95814-2922
DLL-CESPK-RD-Compliance@usace.army.mil

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of the permit your authorization may be suspended, modified, or revoked. If you have any questions about this certification, please contact the Corps of Engineers.

* * * * *

I hereby certify that the work authorized by the above-referenced permit, including all the required mitigation, was completed in accordance with the terms and conditions of the permit verification.

Signature of Permittee

Date

NOTES:

1. FOR THE TCDS, THE CONTRACTOR WILL DETERMINE EXACT NUMBER, SIZE AND TYPE OF PIPE TO USE (PLASTIC OR CORRUGATED LIKELY. A MINIMUM OF TWO TCDS WILL BE CONSTRUCTED (FOR EACH HALF OF BRIDGE TO BE CONSTRUCTED).
2. THE ACTUAL PAD DIMENSIONS OF THE PAD WILL BE DEVELOPED BY THE CONTRACTOR. HOWEVER, IT HAS BEEN ESTIMATED THAT THE PAD WILL BE APPROXIMATELY 104 FEET IN WIDTH, AND 105 FEET IN LENGTH, EXTENDING APPROXIMATELY 30 FEET ON EITHER SIDE OF THE NORTHBOUND BRIDGE TO CONTAIN ANY BRIDGE MATERIAL THAT MAY FALL DURING DEMOLITION OR CONSTRUCTION. IT WILL CONTAIN APPROXIMATELY 1,350 CUBIC YARDS OF CLEAN GRAVEL EACH YEAR. AT THE FINISH OF THE FIRST CONSTRUCTION SEASON, THE GRAVEL WILL BE SPREAD EVENLY INTO A 6-INCH DEEP LAYER, APPROXIMATELY 80-FOOT WIDE, APPROXIMATELY 615 FEET UPSTREAM, AND APPROXIMATELY 315 FEET DOWNSTREAM OF THE BRIDGE IN AN EFFORT TO AUGMENT, RESTORE AND ENHANCE STREAM HABITAT FOR SPAWNING CHINOOK SALMON THAT MIGRATE UP THE CREEK.





U S Army Corps of
Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide
Permits – March 19, 2012

23. Approved Categorical Exclusions. Activities undertaken, assisted, authorized, regulated, funded, or financed, in whole or in part, by another Federal agency or department where:

(a) That agency or department has determined, pursuant to the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act (40 CFR part 1500 et seq.), that the activity is categorically excluded from environmental documentation, because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment; and

(b) The Office of the Chief of Engineers (Attn: CECW-CO) has concurred with that agency's or department's determination that the activity is categorically excluded and approved the activity for authorization under NWP 23.

The Office of the Chief of Engineers may require additional conditions, including pre-construction notification, for authorization of an agency's categorical exclusions under this NWP.

Notification: Certain categorical exclusions approved for authorization under this NWP require the permittee to submit a pre-construction notification to the district engineer prior to commencing the activity (see general condition 31). The activities that require pre-construction notification are listed in the appropriate Regulatory Guidance Letters. (Sections 10 and 404)

Note: The agency or department may submit an application for an activity believed to be categorically excluded to the Office of the Chief of Engineers (Attn: CECW-CO). Prior to approval for authorization under this NWP of any agency's activity, the Office of the Chief of Engineers will solicit public comment. As of the date of issuance of this NWP, agencies with approved categorical exclusions are the: Bureau of Reclamation, Federal Highway Administration, and U.S. Coast Guard. Activities approved for authorization under this NWP as of the date of this notice are found in Corps Regulatory Guidance Letter 05-07, which is available at:

<http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/GuidanceLetters.aspx>. Any future approved categorical exclusions will be announced in Regulatory Guidance Letters and posted on this same web site

A. Regional Conditions

1. Regional Conditions for California, excluding the Tahoe Basin

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-CA.pdf

2. Regional Conditions for Nevada, including the Tahoe Basin

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-NV.pdf

3. Regional Conditions for Utah

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-UT.pdf

4. Regional Conditions for Colorado.

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-CO.pdf

B. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR §§ 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR § 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters,

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U.S. ARMY CORPS OF ENGINEERS – SACRAMENTO DISTRICT

1325 J ST. – SACRAMENTO, CA 95814

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www.flickr.com/photos/sacramentodistrict

the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

- 2. Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
- 3. Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
- 4. Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
- 5. Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
- 6. Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
- 7. Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
- 8. Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
- 9. Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
- 10. Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
- 11. Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
- 12. Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
- 13. Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
- 14. Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
- 15. Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
- 16. Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
- 17. Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
- 18. Endangered Species.**
 - (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.
 - (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to

demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at

<http://www.fws.gov/> or <http://www.fws.gov/jpac> and <http://www.noaa.gov/fisheries.html> respectively.

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

20. **Historic Properties.**

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has

no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

- (d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.
- (e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.
- 21. Discovery of Previously Unknown Remains and Artifacts.** If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
- 22. Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.
 - (a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.
 - (b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.
- 23. Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:
 - (a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).
 - (b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
 - (c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.
 - (1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.
 - (2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.
 - (3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan

that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

- (4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.
- (5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.
- (d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.
- (e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.
- (f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate

form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

- (g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.
- (h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.
- 24. Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.
- 25. Water Quality.** Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.
- 26. Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.
- 27. Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.
- 28. Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For

example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

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

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

(Transferee)

(Date)

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

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

31. Pre-Construction Notification.

(a) **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information

necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
 - (2) 45 calendar days have passed from the district engineer’s receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee’s right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2)..
- (b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project; the project’s purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP

activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with

Section 106 of the National Historic Preservation Act.

- (c) Form of Pre-Construction Notification: the standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.
- (d) Agency Coordination:
- (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.
- (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization

should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

C. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10- acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity

complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWP's do not grant any property rights or exclusive privileges.
4. NWP's do not authorize any injury to the property or rights of others.
5. NWP's do not authorize interference with any existing or proposed Federal project.

E. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWP's, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are

considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a

turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.



U S Army Corps of
Engineers
Sacramento District

Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide
Permits – March 19, 2012

27. Aquatic Habitat Restoration, Establishment, and Enhancement Activities. Activities in waters of the United States associated with the restoration, enhancement, and establishment of tidal and non-tidal wetlands and riparian areas, the restoration and enhancement of non-tidal streams and other non-tidal open waters, and the rehabilitation or enhancement of tidal streams, tidal wetlands, and tidal open waters, provided those activities result in net increases in aquatic resource functions and services.

To the extent that a Corps permit is required, activities authorized by this NWP include, but are not limited to: the removal of accumulated sediments; the installation, removal, and maintenance of small water control structures, dikes, and berms, as well as discharges of dredged or fill material to restore appropriate stream channel configurations after small water control structures, dikes, and berms, are removed; the installation of current deflectors; the enhancement, restoration, or establishment of riffle and pool stream structure; the placement of in-stream habitat structures; modifications of the stream bed and/or banks to restore or establish stream meanders; the backfilling of artificial channels; the removal of existing drainage structures, such as drain tiles, and the filling, blocking, or reshaping of drainage ditches to restore wetland hydrology; the installation of structures or fills necessary to establish or re-establish wetland or stream hydrology; the construction of small nesting islands; the construction of open water areas; the construction of oyster habitat over unvegetated bottom in tidal waters; shellfish seeding; activities needed to reestablish vegetation, including plowing or discing for seed bed preparation and the planting of appropriate wetland species; re-establishment of submerged aquatic vegetation in areas where those plant communities previously existed; re-establishment of tidal wetlands in tidal waters where those wetlands previously existed; mechanized land clearing to remove non-native invasive, exotic, or nuisance vegetation; and other related activities. Only native plant species should be planted at the site.

This NWP authorizes the relocation of non-tidal waters, including non-tidal wetlands and streams, on the project site provided there are net increases in aquatic resource functions and services.

Except for the relocation of non-tidal waters on the project site, this NWP does not authorize the conversion of a stream or natural wetlands to another aquatic habitat type (e.g., stream to

wetland or vice versa) or uplands. Changes in wetland plant communities that occur when wetland hydrology is more fully restored during wetland rehabilitation activities are not considered a conversion to another aquatic habitat type. This NWP does not authorize stream channelization. This NWP does not authorize the relocation of tidal waters or the conversion of tidal waters, including tidal wetlands, to other aquatic uses, such as the conversion of tidal wetlands into open water impoundments.

Compensatory mitigation is not required for activities authorized by this NWP since these activities must result in net increases in aquatic resource functions and services.

Reversion. For enhancement, restoration, and establishment activities conducted:

- (1) In accordance with the terms and conditions of a binding stream or wetland enhancement or restoration agreement, or a wetland establishment agreement, between the landowner and the U.S. Fish and Wildlife Service (FWS), the Natural Resources Conservation Service (NRCS), the Farm Service Agency (FSA), the National Marine Fisheries Service (NMFS), the National Ocean Service (NOS), U.S. Forest Service (USFS), or their designated state cooperating agencies;
- (2) as voluntary wetland restoration, enhancement, and establishment actions documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or
- (3) on reclaimed surface coal mine lands, in accordance with a Surface Mining Control and Reclamation Act permit issued by the Office of Surface Mining Reclamation and Enforcement (OSMRE) or the applicable state agency, this NWP also authorizes any future discharge of dredged or fill material associated with the reversion of the area to its documented prior condition and use (i.e., prior to the restoration, enhancement, or establishment activities).

The reversion must occur within five years after expiration of a limited term wetland restoration or establishment agreement or permit, and is authorized in these circumstances even if the discharge occurs after this NWP expires. The five-year reversion limit does not apply to agreements without time limits reached between the landowner and the FWS, NRCS, FSA, NMFS, NOS, USFS, or an appropriate state cooperating agency. This NWP also authorizes discharges of dredged or fill material in waters of the United States for the reversion of wetlands that were restored, enhanced, or established on prior-converted cropland or on uplands, in accordance with a binding agreement between the landowner and NRCS, FSA, FWS, or their designated state cooperating agencies (even though the restoration, enhancement, or establishment activity did not require a section 404 permit). The prior condition will be documented in the original agreement or permit, and the

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determination of return to prior conditions will be made by the Federal agency or appropriate state agency executing the agreement or permit. Before conducting any reversion activity the permittee or the appropriate Federal or state agency must notify the district engineer and include the documentation of the prior condition. Once an area has reverted to its prior physical condition, it will be subject to whatever the Corps Regulatory requirements are applicable to that type of land at the time. The requirement that the activity results in a net increase in aquatic resource functions and services does not apply to reversion activities meeting the above conditions. Except for the activities described above, this NWP does not authorize any future discharge of dredged or fill material associated with the reversion of the area to its prior condition. In such cases a separate permit would be required for any reversion.

Reporting. For those activities that do not require pre-construction notification, the permittee must submit to the district engineer a copy of:

- (1) The binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement, or a project description, including project plans and location map;
- (2) the NRCS or USDA Technical Service Provider documentation for the voluntary stream enhancement or restoration action or wetland restoration, enhancement, or establishment action; or
- (3) the SMCRA permit issued by OSMRE or the applicable state agency. The report must also include information on baseline ecological conditions on the project site, such as a delineation of wetlands, streams, and/or other aquatic habitats.

These documents must be submitted to the district engineer at least 30 days prior to commencing activities in waters of the United States authorized by this NWP.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing any activity (see general condition 31), except for the following activities:

- (1) Activities conducted on non-Federal public lands and private lands, in accordance with the terms and conditions of a binding stream enhancement or restoration agreement or wetland enhancement, restoration, or establishment agreement between the landowner and the U.S. FWS, NRCS, FSA, NMFS, NOS, USFS or their designated state cooperating agencies;
- (2) Voluntary stream or wetland restoration or enhancement action, or wetland establishment action, documented by the NRCS or USDA Technical Service Provider pursuant to NRCS Field Office Technical Guide standards; or
- (3) The reclamation of surface coal mine lands, in accordance with an SMCRA permit issued by the OSMRE or the applicable state agency. However, the permittee must submit a copy of the appropriate documentation to the district engineer to fulfill the reporting requirement. (Sections 10 and 404)

Note: This NWP can be used to authorize compensatory mitigation projects, including mitigation banks and in-lieu fee projects. However, this NWP does not authorize the reversion of an area used for a compensatory mitigation project to its prior condition, since compensatory mitigation is generally intended to be permanent.

A. Regional Conditions

1. Regional Conditions for California, excluding the Tahoe Basin

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-CA.pdf

2. Regional Conditions for Nevada, including the Tahoe Basin

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-NV.pdf

3. Regional Conditions for Utah

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-UT.pdf

4. Regional Conditions for Colorado.

http://www.spk.usace.army.mil/Portals/12/documents/regulatory/nwp/2012_nwps/2012-NWP-RC-CO.pdf

B. Nationwide Permit General Conditions

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

1. Navigation.

- (a) No activity may cause more than a minimal adverse effect on navigation.
- (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
- (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable

obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.
13. **Removal of Temporary Fills.** Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
16. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).
17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
18. **Endangered Species.**
- (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.
- (b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to

demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide web pages at

<http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

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

20. **Historic Properties.**

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has

no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

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

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

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

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

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

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan

that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

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

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

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

form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

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

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

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

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

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

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

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

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

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

(Transferee)

(Date)

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

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

31. Pre-Construction Notification.

(a) **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification

(PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) 45 calendar days have passed from the district engineer’s receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is “no effect” on listed species or “no potential to cause effects” on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee’s right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2)..

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;

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

may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

- (c) Form of Pre-Construction Notification: he standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.
- (d) Agency Coordination:
 - (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.
 - (2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via email, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where

there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

C. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. For a linear project, this determination will include an evaluation of the individual crossings to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to intermittent or ephemeral streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51 or 52, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in minimal adverse effects. When making minimal effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

2. If the proposed activity requires a PCN and will result in a loss of greater than 1/10- acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining

whether the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

3. If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (a) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (c) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period, with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWP's do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWP's do not grant any property rights or exclusive privileges.
4. NWP's do not authorize any injury to the property or rights of others.
5. NWP's do not authorize interference with any existing or proposed Federal project.

E. Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term "discharge" means any discharge of dredged or fill material.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s), but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in aquatic resource area.

Ephemeral stream: An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an aquatic resource that did not previously exist at an upland site. Establishment results in a gain in aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gages, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in

which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps regulatory program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance, but are still reasonably foreseeable.

Intermittent stream: An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. The loss of stream bed includes the linear feet of stream bed that is filled or excavated. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities eligible for exemptions under Section 404(f) of the Clean Water Act are not considered when calculating the loss of waters of the United States.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. The definition of a wetland can be found at 33 CFR 328.3(b). Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NWP, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of standing or flowing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of "open waters" include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: An ordinary high water mark is a line on the shore established by the fluctuations of water and indicated by physical characteristics, or by other appropriate means that consider the characteristics of the surrounding areas (see 33 CFR 328.3(e)).

Perennial stream: A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function, but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands adjacent to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23.)

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term "single and complete project" is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of "independent utility"). Single and complete non-linear projects may not be "piecemealed" to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a wetland (i.e., water of the United States) that is inundated by tidal waters. The definitions of a wetland and tidal waters can be found at 33 CFR 328.3(b) and 33 CFR 328.3(f), respectively. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located channelward of the high tide line, which is defined at 33 CFR 328.3(d).

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a jurisdictional water of the United States. If a jurisdictional wetland is adjacent – meaning bordering, contiguous, or neighboring – to a waterbody determined to be a water of the United States under 33 CFR 328.3(a)(1)-(6), that waterbody and its adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)). Examples of “waterbodies” include streams, rivers, lakes, ponds, and wetlands.

Final Sacramento District Nationwide Permit
Regional Conditions for California, excluding the Lake Tahoe Basin
(Effective March 19, 2012 until March 18, 2017)

1.* When pre-construction notification (PCN) is required, the permittee shall notify the U.S. Army Corps of Engineers, Sacramento District (Corps) in accordance with General Condition 31 using either the South Pacific Division Preconstruction Notification (PCN) Checklist or a signed application form (ENG Form 4345) with an attachment providing information on compliance with all of the General and Regional Conditions. In addition, the PCN shall include:

a. A written statement describing how the activity has been designed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States;

b. Drawings, including plan and cross-section views, clearly depicting the location, size and dimensions of the proposed activity, as well as the location of delineated waters of the U.S. on the site. The drawings shall contain a title block, legend and scale, amount (in cubic yards) and area (in acres) of fill in Corps jurisdiction, including both permanent and temporary fills/structures. The ordinary high water mark or, if tidal waters, the mean high water mark and high tide line, should be shown (in feet), based on National Geodetic Vertical Datum (NGVD) or other appropriate referenced elevation. All drawings for activities located within the boundaries of the Los Angeles District shall comply with the September 15, 2010 Special Public Notice: *Map and Drawing Standards for the Los Angeles District Regulatory Division*, (available on the Los Angeles District Regulatory Division website at: www.spl.usace.army.mil/regulatory/); and

c. Numbered and dated pre-project color photographs showing a representative sample of waters proposed to be impacted on the site, and all waters of the U.S. proposed to be avoided on and immediately adjacent to the project site. The compass angle and position of each photograph shall be identified on the plan-view drawing(s) required in subpart b of this Regional Condition.

2. For all Nationwide Permits (NWP), the permittee shall submit a PCN in accordance with General Condition 31 and Regional Condition 1, in the following circumstances:

a. For all activities that would result in the discharge of fill material into any vernal pool;

b. For any activity in the Primary and Secondary Zones of the Legal Delta, the Sacramento River, the San Joaquin River, and the immediate tributaries of these waters;

c. For all crossings of perennial waters and intermittent waters;

d. For all activities proposed within 100 feet of the point of discharge of a known natural spring source, which is any location where ground water emanates from a point in the ground excluding seeps or other discharges which lack a defined channel; and

e.* For all activities located in areas designated as Essential Fish Habitat (EFH) by the Pacific Fishery Management Council (i.e., all tidally influenced areas - Federal Register dated March 12, 2007 (72 FR 11092)), in which case the PCN shall include an EFH assessment and extent of proposed impacts to EFH. Examples of EFH habitat assessments can be found at: <http://www.swr.noaa.gov/efh.htm>.

3. The permittee shall record the NWP verification with the Registrar of Deeds or other appropriate official charged with the responsibility for maintaining records of title to or interest in real property for areas (1) designated to be preserved as part of compensatory mitigation for authorized impacts, including any associated covenants or restrictions, or (2) where boat ramps or docks, marinas, piers, and permanently moored vessels will be constructed or placed in or adjacent to navigable waters. The recordation shall also include a map showing the surveyed location of the preserved area or authorized structure.

* Regional Condition developed jointly between Sacramento District, Los Angeles District, and San Francisco District.

4. For all waters of the U.S. proposed to be avoided on a site, unless determined to be impracticable by the Corps, the permittee shall:

- a. Establish and maintain, in perpetuity, a preserve containing all avoided waters of the U.S. to ensure that the functions of the aquatic environment are protected;
- b. Place all avoided waters of the U.S. and any upland buffers into a separate parcel prior to discharging dredge or fill material into waters of the U.S., and
- c. Establish permanent legal protection for all preserve parcels, following Corps approval of the legal instrument;

If the Corps determines that it is impracticable to require permanent preservation of the avoided waters, additional mitigation may be required in order to compensate for indirect impacts to the waters of the U.S.

5. For all temporary fills, the PCN shall include a description of the proposed temporary fill, including the type and amount of material to be placed, the area proposed to be impacted, and the proposed plan for restoration of the temporary fill area to pre-project contours and conditions, including a plan for the re-vegetation of the temporary fill area, if necessary. In addition, the PCN shall include the reason(s) why avoidance of temporary impacts is not practicable.

In addition, for all activities resulting in temporary fill within waters of the U.S., the permittee shall:

- a. Utilize material consisting of clean and washed gravel. For temporary fills within waters of the U.S. supporting anadromous fisheries, spawning quality gravel shall be used, where practicable, as determined by the Corps, after consultation with appropriate Federal and state fish and wildlife agencies;
- b. Place a horizontal marker (e.g. fabric, certified weed free straw, etc.) to delineate the existing ground elevation of the waters temporarily filled during construction; and
- c. Remove all temporary fill within 30 days following completion of construction activities.

6. In addition to the requirements of General Condition 2, unless determined to be impracticable by the Corps, the following criteria shall apply to all road crossings:

a.* For all activities in waters of the U.S. that are suitable habitat for Federally-listed fish species, the permittee shall design all road crossings to ensure that the passage and/or spawning of fish is not hindered. In these areas, the permittee shall employ bridge designs that span the stream or river, including pier- or pile-supported spans, or designs that use a bottomless arch culvert with a natural stream bed;

b. Road crossings shall be designed to ensure that no more than minor impacts would occur to fish and wildlife passage or expected high flows, following the criteria listed in Regional Condition 6(a). Culverted crossings that do not utilize a bottomless arch culvert with a natural stream bed may be authorized for waters that do not contain suitable habitat for Federally listed fish species, if it can be demonstrated and is specifically determined by the Corps, that such crossing will result in no more than minor impacts to fish and wildlife passage or expected high flows;

c. No construction activities shall occur within standing or flowing waters. For ephemeral or intermittent streams, this may be accomplished through construction during the dry season. In perennial streams, this may be accomplished through dewatering of the work area. Any proposed dewatering plans must be approved, in writing, by the Corps prior to commencement of construction activities; and

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d. All bank stabilization activities associated with a road crossing shall comply with Regional Condition 19.

In no case shall stream crossings result in a reduction in the pre-construction bankfull width or depth of perennial streams or negatively alter the flood control capacity of perennial streams.

7.* For activities in which the Corps designates another Federal agency as the lead for compliance with Section 7 of the Endangered Species Act (ESA) of 1973 as amended, pursuant to 50 CFR Part 402.07, Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act (EFH), pursuant to 50 CFR 600.920(b) and/or Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, pursuant to 36 CFR 800.2(a)(2), the lead Federal agency shall provide all relevant documentation to the Corps demonstrating any previous consultation efforts, as it pertains to the Corps Regulatory permit area (for Section 7 and EFH compliance) and the Corps Regulatory area of potential effect (APE) (for Section 106 compliance). For activities requiring a PCN, this information shall be submitted with the PCN. If the Corps does not designate another Federal agency as the lead for ESA, EFH and/or NHPA, the Corps will initiate consultation for compliance, as appropriate.

8. For all NWPs which require a PCN, the permittee shall submit the following additional information with the compliance certificate required under General Condition 30:

a. As-built drawings of the work conducted on the project site and any on-site and/or off-site compensatory mitigation, preservation, and/or avoidance area(s). The as-builts shall include a plan-view drawing of the location of the authorized work footprint (as shown on the permit drawings), with an overlay of the work as constructed in the same scale as the permit drawings. The drawing shall show all areas of ground disturbance, wetland impacts, structures, and the boundaries of any on-site and/or off-site mitigation or avoidance areas. Please note that any deviations from the work as authorized, which result in additional impacts to waters of the U.S., must be coordinated with the appropriate Corps office prior to impacts; and

b. Numbered and dated post-construction color photographs of the work conducted within a representative sample of the impacted waters of the U.S., and within all avoided waters of the U.S. on and immediately adjacent to the proposed project area. The compass angle and position of all photographs shall be similar to the pre-construction color photographs required in Regional Condition 1(c) and shall be identified on the plan-view drawing(s) required in subpart a of this Regional Condition.

9. For all activities requiring permittee responsible mitigation, the permittee shall develop and submit to the Corps for review and approval, a final comprehensive mitigation and monitoring plan for all permittee responsible mitigation prior to commencement of construction activities within waters of the U.S. The plan shall include the mitigation location and design drawings, vegetation plans, including target species to be planted, and final success criteria, presented in the format of the *Sacramento District's Habitat Mitigation and Monitoring Proposal Guidelines*, dated December 30, 2004, and in compliance with the requirements of 33 CFR 332.

10.* The permittee shall complete the construction of any compensatory mitigation required by special condition(s) of the NWP verification before or concurrent with commencement of construction of the authorized activity, except when specifically determined to be impracticable by the Corps. When mitigation involves use of a mitigation bank or in-lieu fee program, the permittee shall submit proof of payment to the Corps prior to commencement of construction of the authorized activity.

11. The permittee is responsible for all authorized work and ensuring that all contractors and workers are made aware and adhere to the terms and conditions of the permit authorization. The permittee shall ensure

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that a copy of the permit authorization and associated drawings are available and visible for quick reference at the site until all construction activities are completed.

12. The permittee 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. The permittee shall maintain such identification properly until construction is completed and the soils have been stabilized. The permittee is 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 permit drawings).

13. For all activities in which a PCN is required, the permittee shall notify the appropriate district office of the start date for the authorized work within 10 days prior to initiation of construction activities.

14. The permittee shall allow Corps representatives to inspect the authorized activity and any mitigation areas at any time deemed necessary to determine compliance with the terms and conditions of the NWP verification. The permittee will be notified in advance of an inspection.

15. For all activities located in the Mather Core Recovery Area in Sacramento County, as identified in the U.S. Fish and Wildlife Service's *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* dated December 15, 2005, NWPs 14, 18, 23, 29, 39, 40, 42, 43 and 44 are revoked from use in vernal pools that may contain habitat for Federally-listed threatened and/or endangered vernal pool species.

16. For activities located in the Primary or Secondary Zone of the Legal Delta, NWPs 29 and 39 are revoked.

17. For all activities within the Secondary Zone of the Legal Delta, the permittee shall conduct compensatory mitigation for unavoidable impacts within the Secondary Zone of the Legal Delta.

18. For NWP 12: Permittees shall ensure the construction of utility lines does not result in the draining of any water of the U.S., including wetlands. This may be accomplished through the use of clay blocks, bentonite, or other suitable material (as approved by the Corps) to seal the trench. For utility line trenches, during construction, the permittee shall remove and stockpile, separately, the top 6 – 12 inches of topsoil. Following installation of the utility line(s), the permittee shall replace the stockpiled topsoil on top and seed the area with native vegetation. The permittee shall submit a PCN for utility line activities in the following circumstances:

a. The utility line crossing would result in a discharge of dredged and/or fill material into perennial waters, intermittent waters, wetlands, mudflats, vegetated shallows, riffle and pool complexes, sanctuaries and refuges or coral reefs;

b. The utility line activity would result in a discharge of dredged and/or fill material into greater than 100 linear feet of ephemeral waters of the U.S.;

c. The utility line installation would include the construction of a temporary or permanent access road, substation or foundation within waters of the U.S.; or

d. The proposed activity would not involve the restoration of all utility line trenches to pre-project contours and conditions within 30 days following completion of construction activities.

19. For NWP 13 and 14: All bank stabilization activities shall involve either the sole use of native vegetation or other bioengineered design techniques (e.g. willow plantings, root wads, large woody debris, etc.), or a combination of hard-armoring (e.g. rip-rap) and native vegetation or bioengineered design

techniques, unless specifically determined to be impracticable by the Corps. The permittee shall submit a PCN for any bank stabilization activity that involves hard-armoring or the placement of any non-vegetated or non-bioengineered technique below the ordinary high water mark or, if tidal waters, the high tide line of waters of the U.S. The request to utilize non-vegetated techniques must include information on why the sole use of vegetated techniques is not practicable.

20. For NWP 23: The permittee shall submit a PCN for all activities proposed for this NWP, in accordance with General Condition 31 and Regional Condition 1. The PCN shall include a copy of the signed Categorical Exclusion document and final agency determinations regarding compliance with ESA, EFH and NHPA, in accordance with General Conditions 18 and 20 and Regional Condition 7.

21. For NWP 27: The permittee shall submit a PCN for aquatic habitat restoration, establishment, and enhancement activities in the following circumstances:

a. The restoration, establishment or enhancement activity would result in a discharge of dredged and/or fill material into perennial waters, intermittent waters, wetlands, mudflats, vegetated shallows, riffle and pool complexes, sanctuaries and refuges or coral reefs; or

b. The restoration, establishment or enhancement activity would result in a discharge of dredged and/or fill material into greater than 100 linear feet of ephemeral waters of the U.S.

22. For NWPs 29 and 39: The channelization or relocation of intermittent or perennial drainages is not authorized, except when, as determined by the Corps, the relocation would result in a net increase in functions of the aquatic ecosystem within the watershed.

23.* Any requests to waive the 300 linear foot limitation for intermittent and ephemeral streams for NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51 and 52, or to waive the 500 linear foot limitation along the bank for NWP 13, must include the following:

a. A narrative description of the stream. This should include known information on: volume and duration of flow; the approximate length, width, and depth of the waterbody and characteristics observed associated with an Ordinary High Water Mark (e.g. bed and bank, wrack line or scour marks); a description of the adjacent vegetation community and a statement regarding the wetland status of the adjacent areas (i.e. wetland, non-wetland); surrounding land use; water quality; issues related to cumulative impacts in the watershed, and; any other relevant information;

b. An analysis of the proposed impacts to the waterbody, in accordance with General Condition 31 and Regional Condition 1;

c. Measures taken to avoid and minimize losses to waters of the U.S., including other methods of constructing the proposed activity(s); and

d. A compensatory mitigation plan describing how the unavoidable losses are proposed to be offset, in accordance with 33 CFR 332.

24. For NWPs 29, 39, 40, 42, and 43: The permittee shall establish and maintain upland vegetated buffers in perpetuity, unless specifically determined to be impracticable by the Corps, next to all preserved open waters, streams and wetlands including created, restored, enhanced or preserved waters of the U.S., consistent with General Condition 23(f). Except in unusual circumstances, as determined by the Corps, vegetated buffers shall be at least 50 feet in width.

* Regional Condition developed jointly between Sacramento District, Los Angeles District, and San Francisco District.

25. For NWP 46: The discharge shall not cause the loss of greater than 0.5 acres of waters of the United States or the loss of more than 300 linear feet of ditch, unless specifically waived in writing by the Corps.

26. All NWPs except 3, 6, 20, 27, 32, and 38 are revoked for activities in histosols, fens, bogs and peatlands and in wetlands contiguous with fens. Fens are defined as slope wetlands with a histic epipedon that are hydrologically supported by groundwater. Fens are normally saturated throughout the growing season, although they may not be during drought conditions. For NWPs 3, 6, 20, 27, 32, and 38, the permittee shall submit a PCN to the Corps in accordance with General Condition 31 and Regional Condition 1. This condition does not apply to NWPs 1, 2, 8, 9, 10, 11, 24, 28, 35 or 36, as these NWPs either apply to Section 10 only activities or do not authorize impacts to special aquatic sites.



Central Valley Regional Water Quality Control Board

9 May 2012

Ms. Kelley Nelson
Caltrans
703 B Street
Marysville, CA 95901

**CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY
CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE
BUTTE CREEK BRIDGE REPLACEMENT PROJECT (WDID#5A04CR00207), CHICO,
BUTTE 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 certification action 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 Title 23 of the California Code of Regulations (23 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 subsection 3855(b) 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 under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. This certification is no longer valid if the project (as currently described) is modified, or coverage under Section 404 of the Clean Water Act has expired.

KARL E. LONGBLEY ScD, P.E., CHAIR | PAMELA C. CREEDON P.E., BOCEE, EXECUTIVE OFFICER

115 Krollcrest Drive, Suite 100, Redding, CA 96002 | www.waterboards.ca.gov/centralvalley

ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:

In addition to the four standard conditions, Caltrans shall satisfy the following:

1. Caltrans shall notify the Central Valley Regional Water Quality Control Board (Central Valley Water Board) in writing 7 days in advance of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. All areas disturbed by project activities shall be protected from washout or erosion.
4. Caltrans 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.
5. An effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working during all phases of construction.
6. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.
7. Caltrans shall perform surface water sampling: 1) When performing any in-water work; 2) In the event that project activities result in any materials reaching surface waters or; 3) When any activities result in the creation of a visible plume in surface waters. The following monitoring shall be conducted immediately upstream out of the influence of the project and 300 feet downstream of the active work area. Sampling results shall be submitted to this office within two weeks of initiation of sampling and every two weeks thereafter. The sampling frequency may be modified for certain projects with written permission from the Central Valley Water Board.

| Parameter | Unit | Type of Sample | Frequency of Sample |
|---|--------------|---------------------|---|
| Turbidity | NTU | Grab | Every 4 hours during in water work |
| Settleable Material | ml/l | Grab | Same as above. |
| Visible construction related pollutants | Observations | Visible Inspections | Continuous throughout the construction period |

8. Activities shall not cause turbidity increases in surface water to exceed:
- (a) where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;
 - (b) where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
 - (c) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - (d) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - (e) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be assessed by prior permission of the Central Valley Water Board.

9. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters as measured in surface waters 300 feet downstream from the project.
10. The discharge of petroleum products or other excavated materials to surface water is prohibited. Activities shall not cause visible oil, grease, or foam in the work area or downstream. Caltrans shall notify the Central Valley Water Board immediately of any spill of petroleum products or other organic or earthen materials.
11. Caltrans shall notify the Central Valley Water Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
12. Caltrans must comply with all requirements of U.S. Army Corps of Engineers Nationwide Permit Number 23 (Approved Categorical Exclusions) & 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities), and special conditions for the project.
13. Caltrans shall comply with all of the conditions of the California Department of Fish and Game Lake or Streambed Alteration Agreement for the project.
14. The California Department of Transportation shall comply with their General NPDES Permit Order No 99-06-DWQ (NPDES No. CAS 000003) issued by the State Water Resources Control Board.
15. The Conditions in this water quality certification are based on the information in the attached "Project Information." If the information in the attached Project Information is modified or the project changes, this water quality certification is no longer valid until amended by the Central Valley Water Board.

16. The mitigation measures specified in the mitigation monitoring and reporting program for the approved Mitigated Negative Declaration (Environmental Impact Report) for the project, as they pertain to biology, hydrology and water quality impacts, are included in this Water Quality Certification, as required by California Public Resource Code Section 21081.6 and CEQA Guidelines, California Code of Regulations Section 15097.
17. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under State law and section 401 (d) of the federal Clean Water Act. The applicability of any State law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance with this Order.
 - a. If Caltrans or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Order, or falsifies any information provided in the monitoring reports, the applicant is subject to civil monetary liabilities, for each day of violation, or criminal liability.
 - b. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require Caltrans to furnish, under penalty of perjury, any technical or monitoring reports the Central Valley Water Board deems appropriate, provided that the burden, including cost of the reports, shall be in reasonable relationship to the need for the reports and the benefits to be obtained from the reports.
 - c. Caltrans shall allow the staff of the Central Valley Water Board, or their authorized representative, to enter the project premises for 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.
18. Caltrans shall provide a Notice of Completion (NOC) no later than 30 days after the project completion. The NOC shall demonstrate that that the project has been carried out in accordance with the project's description (and any amendments approved). The NOC shall include a map of the project location and representative pre and post construction; photographs. Each photograph shall include a descriptive title, date taken, photographic site, and photographic orientation.

ADDITIONAL STORM WATER QUALITY CONDITIONS:

Caltrans shall also satisfy the following additional storm water quality conditions:

1. During the construction phase, Caltrans must employ strategies to minimize erosion and the introduction of pollutants into storm water runoff. These strategies must include the following:
 - (a) the Storm Water Pollution Prevention Plan (SWPPP) must be prepared during the project planning and design phases and before construction;

- (b) an effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working prior to the rainy season and during all phases of construction.
- 2. Caltrans must minimize the short and long-term impacts on receiving water quality from the Butte Creek Bridge Replacement Project by implementing the following post-construction storm water management practices:
 - (a) minimize the amount of impervious surface;
 - (b) reduce peak runoff flows;
 - (c) provide treatment BMPs to reduce pollutants in runoff;
 - (d) ensure existing waters of the State (e.g., wetlands, vernal pools, or creeks) are not used as pollutant source controls and/or treatment controls;
 - (e) preserve and, where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones;
 - (f) limit disturbances of natural water bodies and natural drainage systems caused by development (including development of roads, highways, and bridges);
 - (g) use existing drainage master plans or studies to estimate increases in pollutant loads and flows resulting from projected future development and require incorporation of structural and non-structural BMPs to mitigate the projected pollutant load increases in surface water runoff;
 - (h) identify and avoid development in areas that are particularly susceptible to erosion and sediment loss, or establish development guidance that protects areas from erosion/ sediment loss;
 - (i) control post-development peak storm water run-off discharge rates and velocities to prevent or reduce downstream erosion, and to protect stream habitat.
- 3. Caltrans must ensure that all development within the project provides verification of maintenance provisions for post-construction structural and treatment control BMPs. Verification shall include one or more of the following, as applicable:
 - (a) the developer's signed statement accepting responsibility for maintenance until the maintenance responsibility is legally transferred to another party; or
 - (b) written conditions in the sales or lease agreement that require the recipient to assume responsibility for maintenance; or
 - (c) written text in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to a home owner's association, or other appropriate group, for maintenance of structural and treatment control BMPs; or
 - (d) any other legally enforceable agreement that assigns responsibility for storm water BMP maintenance.
- 4. 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 Caltrans 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.

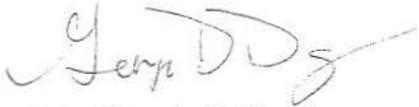
REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Scott A. Zaitz, R.E.H.S., Redding Branch Office, 415 Knollcrest Drive, Suite 100, Redding, California 96002, szaitz@waterboards.ca.gov, (530) 224-4784

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from Caltrans, Butte Creek Bridge Replacement Project (WDID# 5A04CR00207) 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 strict compliance with Caltrans's project description 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 September 2009.



(for) Pamela C. Creedon
Executive Officer

Enclosure: Project Information

SAZ: wrb/jmtm

cc: Mr. Will Ness, U.S. Army Corp of Engineers, Sacramento
U.S. Fish and Wildlife Service, Sacramento
Department of Fish and Game, Region 2, Rancho Cordova
Mr. Bill Jennings, CALSPA, Stockton

cc by email: Mr. Dave Smith, U.S. EPA, Region 9, San Francisco
Mr. Bill Orme, SWRCB, Certification Unit, Sacramento

PROJECT INFORMATION

Application Date: 26 October 2011

Applicant: Caltrans, Attn: Mr. John Holder

Project Name: Butte Creek Bridge Replacement Project

Application Number: WDID No. 5A04CR00207

Type of Project: Replacement of existing bridge over Butte Creek.

Project Location: Section 8, Township 21 North, Range 2 East, MDB&M.
Latitude: 39°41'39" and Longitude: -121°46'41"

County: Butte County

Receiving Water(s) (hydrologic unit): Butte Creek, which is tributary to Sacramento River.
Butte Creek Hydrologic Unit-Upper Little Chico Hydrologic Area No. 521.30

Water Body Type: Wetlands, Streambed

Designated Beneficial Uses: The Water Quality Control Plan for the Sacramento River and San Joaquin River, Fourth Edition, revised September 2009, has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND), Hydropower Generation (POW); Groundwater Recharge, Water Contact Recreation (REC-1); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Cold Freshwater Migration (MIGR); Warm Freshwater Spawning (SPWN); Cold Freshwater Spawning (SPWN); and Wildlife Habitat (WILD).

Project Description (purpose/goal): The Butte Creek Bridge Replacement Project consists of replacing the North Bound Butte Creek Bridge (No. 12-0126 R), on State Route 99, south of the City of Chico. The existing North Bound Bridge needs to be replaced due to critical sub-scouring and deck failure. To accomplish this work, Caltrans is proposing to split the NB traffic to maintain two NB and two southbound (SB) lanes to allow for half-width bridge construction. The left bridge would accommodate three lanes of traffic (two SB and 1 NB), requiring a one-lane median crossover detour. The crossover would occur before Butte Creek. The right bridge would accommodate one lane of NB traffic during construction. This would result in a two span bridge and take three construction seasons to complete.

The new NB Bridge would be a reinforced concrete box girder bridge. Two abutments on piles and one pier wall on spread footings would support the two-span structure. The new bridge would be constructed on the existing tangent alignment, and would be approximately 324 feet long with two 12-foot wide lanes. There would be a 5-foot-wide shoulder on the left side, and 10-foot wide shoulder on the right side. Deck drains will be needed on the new bridge to drain storm water. Also, construction of temporary false work, cofferdams, RSP, and a creek diversion/crossing would be required for the construction of the new bridge.

Road work involves removing and replacing failed pavement areas, reconstructing existing shoulders, placing new Asphalt Concrete (AC) pavement, grinding Portland Cement Concrete (PCC) pavement (at SB conforms and SB bridge ends), constructing a temporary crossover median detour, temporary culverts, extending existing culverts, replacing down-drains and over-side drains, placing RSP, removing and replacing flashing beacons and traffic sensors, installing temporary highway lighting, and new bridge approach metal beam guard railing. Open graded friction course (OGFC) will be placed as a final wearing surface.

The contractor will likely dewater the cofferdams around the piers by pumping directly into the existing ditches north and south of the levees along the east side of SR 99. The mobile filtration boxes may be used for any dewatering needs instead of pumping water out of cofferdams into trucks or into existing drainage ditches. The contractor may also propose to use temporary sediment basins.

Preliminary Water Quality Concerns: Construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: Caltrans will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Caltrans will conduct turbidity and settleable matter testing during in-water work, stopping work if Basin Plan criteria are exceeded or are observed.

Fill/Excavation Area: Project implementation will permanently impact 1.71 acres of riparian and 0.08 acres of un-vegetated streambed and temporarily impact 0.25 acres of riparian and 0.002 acres of un-vegetated streambed.

Dredge Volume: 370 cubic yards of fill material.

Possible Listed Species: Not Applicable

U.S. Army Corps File Number: SPK-2011-00389

U.S. Army Corps of Engineers Permit Number: Nationwide Permit #23 & #27

California Department of Fish and Game Lake and Streambed Alteration Agreement: Caltrans applied for a Streambed Alteration Agreement in October 2011 (Lake & Streambed Alteration Agreement Number: 1600-2011-0183-R2).

Status of CEQA Compliance: The California Department of Transportation signed a Notice of Determination on 18 October 2010 approving a Mitigated Negative Declaration stating the project will not have a significant effect on the environment.

Compensatory Mitigation: The applicant is proposing to mitigate for the loss of jurisdictional waters by planting riparian trees at a 3:1 ratio at three different locations approximately 300 yards upstream of the project.

Application Fee Provided: On 26 October 2011 a certification application fee of \$1,357.00 was submitted as required by 23 CCR §3833b(3)(A) and by 23 CCR §2200(e). A remaining

certification fee of \$9,971 was received on 2 December 2011 as required by 23 CCR §3833b(2)(A) and by 23 CCR § 2200(e).



United States Department of the Interior



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

In reply refer to:
81420-2010-I-0985-2

NOV 1 2010

Ms. Kendall Schinke
California Department of Transportation
Branch Chief, Environmental Management
District 3
P.O. Box 911
Marysville, California 95901-0911

Subject: Amendment to the Biological Opinion for the State Route 99 Butte Creek Bridge Replacement Project (Service File Number 81420-2010-F-0985-1) Butte County, California.

Dear Ms. Schinke:

This is the response to your October 12, 2010, request to amend the October 7, 2010, biological opinion for the State Route 99 Butte Creek Bridge Replacement Project (Service File Number 81420-2010-F-0985-1), in Butte County, California. This amendment addresses three minor corrections that have been identified in the biological opinion. This response is in accordance with section 7 of the Endangered Species Act, as amended (16 U. S. C. 1531 *et seq.* (Act)).

The October 7, 2010, biological opinion is now amended to read (changes are in bold):

Page 2: Under the Consultation History:

From:

January 27, 2010 The Service received responses to questions from the site visit that was attended on August 12, 2010, from Caltrans via electronic mail.

To:

August 25, 2010 The Service received responses to questions from the site visit that was attended on August 12, 2010, from Caltrans via electronic mail.

TAKE PRIDE
IN AMERICA 

Page 2: Under the Project Description:

From:

Construction is scheduled to begin in June 2012. The project is scheduled to be completed in October of 2015.

To:

It has been estimated that construction could begin in February 2013 but will likely be suspended until April 2013 due to weather. Construction would be completed in Oct 2016.

Page 3: Under the Conservation Measures:

From:

Table 1: Proposed compensation ratios for the beetle for the Slope and Pipe Repair Project.

To:

Table 1: Proposed compensation ratios for the beetle for the Butte Creek Bridge Replacement Project.

The other portions of the October 7, 2010 biological opinion remain the same.

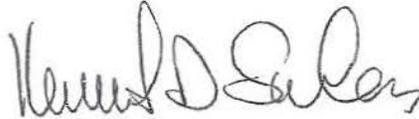
This concludes the amendment to the proposed project. As provided in 50 CFR §402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending re-initiation.

Ms. Kendall Schinke

3

If you have any questions regarding this amendment to the biological opinion for the Butte Creek Bridge Replacement Project, please contact Jason Hanni, Staff Biologist, or the acting Sacramento Valley Branch Chief, at (916) 414-6645.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth D. Sanchez". The signature is written in a cursive style with a large initial "K".

Kenneth D. Sanchez
Assistant Field Supervisor

cc:

Kelley Nelson, California Department of Transportation, Marysville, California
Chris Collison, California Department of Transportation, Sacramento, California



United States Department of the Interior



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

In reply refer to:
81420-2010-F-0985-1

OCT 7 2010

Ms. Kendall Schinke
California Department of Transportation
Branch Chief, Environmental Management
District 3
P.O. Box 911
Marysville, California 95901-0911

Subject: Review of the Proposed Butte Creek Bridge Replacement Project, Butte County, California, for Inclusion with the Valley Elderberry Longhorn Beetle Programmatic Consultation (Service File Number 1-1-96-F-0066)

Dear Ms. Schinke:

This letter responds to your June 14, 2010, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Butte Creek Bridge Replacement Project (proposed project) in Butte County, California. We received your request on June 15, 2010. The Service has reviewed the biological information submitted by the California Department of Transportation (Caltrans) describing the effects of the proposed project on the federally-listed as threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) (beetle). The proposed project is not within critical habitat for any federally-listed species. Therefore, critical habitat will not be affected. The Service concurs that the proposed project is likely to adversely affect the beetle and can be appended to the Service's *Formal Programmatic Consultation Permitting Projects with Relatively Small Effects on the Valley Elderberry Longhorn Beetle Within the Jurisdiction of the Sacramento Field Office* (beetle programmatic) (Service file number 1-1-96-F-0066). This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

This consultation is based on: 1) the *Biological Assessment for the Butte Creek Bridge Replacement Project, Butte County, California*, dated June 2010, received by the Service on June 15, 2010; 2) your letter of initiation, dated June 14, 2010, received June 15, 2010; 3) the site visit made on August 12, 2010; and 4) additional information available to the Service.

TAKE PRIDE
IN AMERICA 

Consultation History

- June 14, 2010* The Service received the letter and accompanying information from the Corps requesting initiation of section 7 consultation on the proposed project.
- August 12, 2010* Site visit attended by representatives of the Service and Caltrans.
- January 27, 2010* The Service received responses to questions from the site visit that was attended on August 12, 2010 from Caltrans via electronic mail.

Description of the Proposed Action

Caltrans is proposing to replace the Butte Creek Bridge on State Route (SR) 99 in Butte County with a new bridge constructed on the existing northbound (NB) alignment. The existing bridge is experiencing substructure scour and continued deck deterioration. The purpose of the project is to preserve the integrity of the transportation facility by replacing the existing NB Bridge. The southbound roadway will be utilized for detouring traffic and will require some reconstruction to strengthen the shoulders. The project area is located just south of the City of Chico between Post Miles 28.4 and 29.2. Construction is scheduled to begin in June 2012. The project is scheduled to be completed in October of 2015.

Conservation Measures

The proposed project site has 11 elderberry shrubs (*Sambucus* sp.), the sole host plant for the beetle. The proposed project will directly affect six shrubs. Construction activities will directly affect six of the elderberry shrubs with a total of 23 stems greater than one inch in diameter at ground level due to the removal of the shrubs. The shrubs within the project area are too difficult to transplant due to their location underneath the bridge. Caltrans has proposed compensation for all six of the directly affected elderberry shrubs. These six shrubs will be removed as part of the proposed project, and will not be transplanted. All six shrubs with a total of 23 stems will be lost as a result of the proposed project. The location and topography of the elderberry shrubs beside and under the bridge would make it very difficult for equipment to access and/or remove the shrubs in these locations. Therefore, Caltrans has proposed to compensate twice the recommended ratio due to the shrubs being lost and not transplanted. Therefore, the total compensation proposed by the applicant is 0.678 acre (see Table 1). The remaining five shrubs will be protected from effects to the beetle as proposed by the project applicant and as outlined in the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (Service 1999) (Guidelines) as referenced in the beetle programmatic consultation through the following conservation measures:

Table 1: Proposed compensation ratios for the beetle for the Slope and Pipe Repair Project.

| Stem Diameter | Number of Stems | Exit Holes (Y/N) | Seedling Ratio | Native Plant Ratio | Total Seedling | Total Native Plants | Acres |
|------------------------------|-----------------|------------------|----------------|--------------------|----------------|---------------------|--------------|
| Non-Riparian | | | | | | | |
| Stems $\geq 1"$ to $\leq 3"$ | 13 | N | 1:1 | 1:1 | 13 | 13 | |
| Riparian | | | | | | | |
| Stems $\geq 1"$ to $\leq 3"$ | 6 | N | 2:1 | 1:1 | 12 | 12 | |
| Stems $> 5"$ | 4 | N | 4:1 | 1:1 | 16 | 16 | |
| TOTAL | 23 | | | | 41 | 41 | 0.339 |
| 2X | | | | | 82 | 82 | 0.678 |

The Service has determined that it is appropriate to append the proposed Butte Creek Bridge Replacement Project to the beetle programmatic. This letter is an agreement by the Service to append the proposed project to the beetle programmatic and represents the Service's biological opinion on the effects of the proposed action. Compensation for projects appended to the beetle programmatic involves adhering to the Guidelines, except as approved by the Service. Compensation implemented through the Guidelines should lead to the development of protected habitat areas distributed across the landscape. These protected areas can then be used as foundations for future habitat conservation plans by local communities. Prior to any ground disturbing activities associated with the proposed project, the project applicant shall fulfill the compensation outlined in Table 1. The Service is tracking losses of beetle habitat permitted under the beetle programmatic. The Service reevaluates the effectiveness of this programmatic at least every six (6) months to ensure continued implementation will not result in unacceptable effects to the beetle or the habitats upon which it depends.

1. Avoided shrubs will be shown on construction plans as environmentally sensitive areas (ESA). The contractor will be required to install temporary ESA fencing before any work begins to protect all five avoided shrubs against inadvertent construction related impacts.
2. Contractors and Caltrans construction personnel will be educated about the importance of the elderberry shrubs and the consequences of damaging the shrubs. Contractors and workers will be informed about the status of the beetle and the need to protect its host plant, the elderberry shrub, prior to construction. This will take place at a pre-construction meeting between Caltrans and the contractor.

3. Signs will be placed on the ESA fencing stating: "This area is habitat of the valley elderberry longhorn beetle, a threatened species, and must not be disturbed. This species is protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs will be readable from 20 ft away and will be maintained during the entire duration of construction.
4. Any disturbed ground within the buffer areas will be restored after construction is complete. The affected areas will be re-vegetated with native plants appropriate for the project location.
5. Prior to commencement of construction, buffer and core avoidance areas will be protected: Protective ESA fencing will be in place, signs designating the ESAs will be in place, and approved by the Caltrans biologist. Insecticides, herbicides, fertilizers, or other chemicals will not be used in core or buffer areas within the project limits.
6. Best Management Practices will be in place during construction and will serve to minimize soil erosion and airborne dust.

A more detailed description of the proposed project can be found in the June 2010, *Biological Assessment for the Butte Creek Bridge Replacement Project*.

Action Area

The action area is defined in 50 CFR §402.02, as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action." For the proposed action, the Service considers the action area to be the footprint of the proposed project. This includes the grading required for the bridge replacement extending 100 feet from the footprint of the project as detailed in the Biological Assessment.

Evaluation under Programmatic Consultation

This letter is an agreement by the Service to append the proposed project to the Programmatic Consultation and represents the Service's biological opinion on the effects of the proposed action. Compensation for projects appended to the Programmatic Consultation involves adhering to the Service's Guidelines, except as approved by the Service. Compensation implemented through the Guidelines should lead to the development of protected habitat areas distributed across the landscape. These protected areas can then be used as foundations for future habitat conservation plans by local communities. Prior to any ground disturbing activities associated with the proposed project, the project applicant shall fulfill the compensation outlined in Table 1.

Effects of the Proposed Project

Construction activities in the area are likely to directly adversely affect six elderberry shrubs with 23 stems one inch or greater in diameter at ground level. The remaining shrubs are not likely to be adversely affected based on the buffer area and the avoidance and minimization measures proposed by the applicant.

The construction activities associated with the proposed project would result in harm or harassment of the beetle in the form of habitat modification and disruption of normal behavior patterns. The six shrubs are located in an area in which they would be directly affected by construction activities. In addition, these shrubs are located in an area where they would be difficult to transplant. Therefore, the six shrubs are going to be removed and the Service has determined that the proposed project will adversely affect the elderberry shrubs and therefore, the beetle.

The proposed project will adversely affect the beetle; however, the proposed conservation measures should minimize effects to the beetle. Compensation for the project as proposed by the project applicant will occur at a Service-approved conservation bank or through an in-lieu fund for the beetle that will purchase bank credits when they become available. The bank will be protected and managed for the beetle in perpetuity, which will aid in maintaining the distribution of the beetle and potentially increase beetle populations.

Conclusion

After reviewing the current status of the beetle, the environmental baseline for the action area, the effects of the proposed action and the cumulative effects, it is the Service's biological opinion that the Butte Creek Bridge Replacement Project, as proposed, is not likely to jeopardize the continued existence of the beetle.

The proposed project, as described, fits within the parameters of the level of take anticipated in the beetle programmatic and is not likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the beetle in the wild.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking incidental to and not intended as part of the agency project is not considered to be prohibited taking under the Act, provided that such taking is in compliance with this Incidental Take Statement.

Amount or Extent of Take

The Service expects that incidental take of the beetle will be difficult to detect or quantify. The cryptic nature of this species and their relatively small body size make the finding of an injured or dead specimen unlikely. Additionally, the species occurs in habitats that make them difficult to detect. Due to the difficulty in quantifying the number of beetles that will be taken as a result of the proposed project, the Service is quantifying take incidental to the project as death, injury, harassment, and harm of all beetles inhabiting or otherwise utilizing the six directly affected elderberry shrubs with 23 stems one inch or greater in diameter at ground level, as described in this biological opinion for the project. The incidental take associated with the proposed action on valley elderberry longhorn beetle is hereby exempted from prohibitions of take under section 9 of the Act.

Effect of the Take

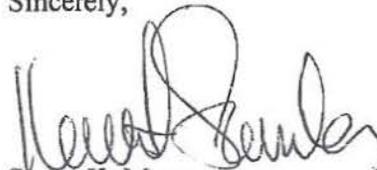
The Service has determined that this level of anticipated take is not likely to result in jeopardy to the beetle.

REINITIATION—CLOSING STATEMENT

This concludes the Service's review of the proposed Butte Creek Bridge Replacement Project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

If you have any questions regarding this biological opinion please contact Jason Hanni, Staff Biologist, or the Acting Sacramento Valley Branch Chief, at (916) 414-6645.

Sincerely,



For
Susan K. Moore
Field Supervisor

LITERATURE CITED

U.S. Fish and Wildlife Service. 1999. Conservation Guidelines for the Valley Elderberry Longhorn Beetle.



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

SEP 17 2010

In response refer to:
2010/03285

Ms. Kendall Schinke
Branch Chief, Environmental Management
Department of Transportation
District 3
703 B Street
Marysville, California 95901-0911

Dear Ms. Schinke:

This letter is in response to your June 30, 2010, request for initiation of section 7 consultation with NOAA's National Marine Fisheries Service (NMFS) pursuant to the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*), concerning the Butte Creek Bridge Replacement project on State Route (SR) 99 located in northern Butte County, California. The California Department of Transportation (Caltrans) has determined that the proposed project may affect, but is not likely to adversely affect, threatened Central Valley (CV) spring-run Chinook salmon (*Oncorhynchus tshawytscha*), threatened CV steelhead (*O. mykiss*), or their designated critical habitats. In addition, Caltrans has determined that the proposed project may adversely affect the Essential Fish Habitat (EFH) of Pacific salmon, and has requested initiation of consultation pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This letter also serves as consultation under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act of 1934 (FWCA), as amended. NMFS recognizes that Caltrans is acting in conjunction with the Federal Highway Administration (FHWA) for this project and has assumed FHWA's responsibilities under Federal environmental laws as allowed by the Memorandum of Understanding between FHWA and Caltrans, which became effective on July 1, 2007.

The proposed project is located approximately 1.5 miles south of the City of Chico, between Post Miles (PM) 28.4 and 29.2. Caltrans proposes to replace the existing bridge with a new bridge constructed on the existing northbound (NB) alignment. The existing bridge is experiencing substructure scour and continued deck deterioration. The purpose of the project is to preserve the integrity of the transportation facility by replacing the NB Bridge. The southbound (SB) roadway will be utilized for detouring traffic and will require some reconstruction to strengthen the shoulders. Construction is scheduled to begin in February 2013, but may be postponed until April 2013 due to weather issues. Caltrans is proposing to demolish the existing bridge and construct a new bridge in three consecutive seasons. The project is scheduled to be completed in October 2016.



The new NB Bridge will be a reinforced concrete box girder bridge. Two abutments on piles and one pier wall on spread footings will support the two-span structure. The new bridge will be constructed on the existing tangent alignment, and will be approximately 324 feet long with two 12-foot wide lanes. There will be a 5-foot wide shoulder on the left side (inside), and a 10-foot wide shoulder on the right side (outside). Deck drains will be needed on the new bridge to drain storm water.

Construction will involve roadway cut/fill, grinding of the existing deck surface and/or structure, creating access roads, and equipment staging area, drainage and culvert work, work within the 100 year floodplain, temporary stream crossing, water diversion, temporary construction easements (TCEs), ground disturbance, vegetation removal, pile driving, seasonal construction windows, night work, work within the stream channel (including temporary stream crossings) and possibly placement of rock slope protection (RSP).

In-water construction activities will be conducted during the summer and early fall season where some water diversion will likely occur due to agricultural tailwater flows. Best management practices (BMPs) will be implemented into the proposed project to minimize downstream erosion and sedimentation. These BMPs include, but are not limited to, disturbed soils will be seeded, mulched, and fertilized; straw wattles; silt fences; sediment basins; or other control methods will be used to prevent sediments from entering Butte Creek.

Caltrans is incorporating the following measures to avoid and minimize potential impacts to CV spring-run Chinook salmon and CV steelhead:

- (1) A qualified Biologist will inspect the work area prior to start of work to confirm absence of salmonids.
- (2) In-water work will occur during the summer / early fall (July 15 to October 15) when flows are low and water temperatures are too warm to support salmonids.
- (3) Silt curtains will be used around in-water work to minimize turbidity and sedimentation.
- (4) Erosion control will be applied to disturbed soil areas prior to October 15.
- (5) BMPs will be implemented into the proposed project to minimize impacts to waterways.
- (6) Loss of riparian habitat will be minimized within the project area through preserving existing vegetation to the maximum extent possible and revegetating disturbed areas to establish permanent riparian cover.

ESA Section 7 Consultation

Based on our review of the material provided with your request and the best scientific and commercial information currently available, NMFS concurs that the Butte Creek Bridge Replacement project on SR 99 is not likely to adversely affect CV spring-run Chinook salmon and CV steelhead, or their designated critical habitats. NMFS reached this determination based on the incorporation of the following measures:

1. The following minimization measures have been incorporated into the proposed project description in order to reduce the potential for water quality impacts that could

potentially harm listed anadromous fish or their habitat to a level that is insignificant or discountable:

- BMPs will be incorporated into the proposed project to minimize the potential for water quality impacts and prevent deleterious materials from entering the channel that could potentially harm anadromous listed fish and their habitat.
2. Activities conducted in the active channel of the creek will be limited to the timeframe between July 15 and October 15 each in-water work window season when presence of salmonids is unlikely therefore impacts to listed fish would be insignificant or discountable.
 3. Caltrans will replace all removed native riparian vegetation within the project area by replanting the same species on-site at a 3:1 ratio to maintain critical fish habitat.
 4. Spawning habitat for these fish are approximately 16 miles upstream from the project action and critical habitat would be avoided, therefore the construction activities would be insignificant or discountable.

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. Conservation recommendations are discretionary agency activities intended to minimize or avoid adverse effects of a proposed project on listed species or critical habitat, to help implement recovery plans, or to develop information. In order to fulfill the requirements of section 7(a)(1), NMFS recommends that Caltrans purchase riparian credits from a NFMS approved anadromous fish conservation bank at a ratio of 2 acres to every 1 acre of the project area footprint that lies within 100 feet of the riparian zone associated with the channel.

This concludes ESA consultation for the Butte Creek Bridge Replacement project. This concurrence does not provide incidental take authorization pursuant to section 7(b)(4) and section 7(o)(2) of the ESA. Re-initiation of the consultation is required where discretionary Federal agency involvement or control over the proposed project has been retained (or is authorized by law), and if: (1) new information reveals effects of the proposed project that may affect listed species or critical habitat in a manner or to an extent not considered; (2) the proposed project is subsequently modified in a manner that causes adverse effects to listed species or critical habitat; or (3) a new species is listed or critical habitat designated that may be affected by the proposed project.

EFH Consultation

With regards to EFH consultation, the action area has been identified as EFH for Chinook salmon in Amendment 14 of the Pacific Salmon Fishery Management Plan pursuant to the MSA. Federal action agencies are mandated by the MSA (section 305(b)(2)) to consult with NMFS on all actions that may adversely affect EFH and NMFS must provide EFH conservation recommendations to those agencies (section 305(b)(4)(A)). Because the proposed project has incorporated specific measures designed to minimize impacts to salmonid habitat, NMFS concurs

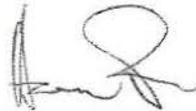
with Caltrans that the proposed project will not adversely affect EFH. As a result, additional EFH conservation recommendations are not being provided at this time. However, if there are substantial revisions to the proposed project, the lead Federal agency will need to re-initiate EFH consultation.

FWCA

The purpose of the FWCA is to ensure that wildlife conservation receives equal consideration, and is coordinated with other aspects of water resources development (16 U.S.C. 661). The FWCA establishes a consultation requirement for Federal departments and agencies that undertake any action that proposes to modify any stream or other body of water for any purpose, including navigation and drainage (16 U.S.C. 662(a)). Consistent with this consultation requirement, NMFS provides recommendations and comments to Federal action agencies for the purpose of conserving fish and wildlife resources. The FWCA provides the opportunity to offer recommendations for the conservation of species and habitats beyond those currently managed under the ESA and MSA. NMFS recommends that the ESA section 7(a)(1) conservation recommendations be adopted as a FWCA measure.

Please contact Dylan Van Dyne at (916) 930-3725, or via e-mail at Dylan.VanDyne@noaa.gov if you have any questions or require additional information concerning this project.

Sincerely,



fol

Rodney R. McInnis
Regional Administrator

cc: Copy to File ARN # 151422SWR2010SA00268
NMFS-PRD, Long Beach, CA

Fisher, Leah M SPK

Subject: FW: Butte Creek Bridge Replacement Project
Attachments: pic10210.jpg

-----Original Message-----

From: Kelley Nelson [mailto:kelley_nelson@dot.ca.gov]

Sent: Monday, October 31, 2011 1:47 PM

To: Fisher, Leah M SPK

Cc: Dylan.VanDyne@noaa.gov

Subject: Fw: Butte Creek Bridge Replacement Project Hi Leah - will this e-mail amended concurrence from Dylan at NOAA Fisheries suffice for the Corps needs regarding the addition of the gravel augmentation for the Butte Creek Bridge Replacement Project?

Thanks for your help. Have a great rest of the day.

(Embedded image moved to file: pic10210.jpg)

----- Forwarded by Kelley Nelson/D03/Caltrans/CAGov on 10/31/2011 01:45 PM

----- Dylan Van Dyne <Dylan.VanDyne@noaa.gov>

To 'Kelley Nelson' <kelley_nelson@dot.ca.gov>

10/31/2011 01:02 PM

Subject RE: Butte Creek Bridge Replacement Project

Hi Kelley,

This email provides you with an amended concurrence from NOAA regarding the addition of the gravel augmentation pad to the project description in the original NMFS issued concurrence letter dated 9/17/10 for the above referenced project. Please adhere to all other avoidance and minimization measures outlined in the letter. Let me know if you have any questions or require anything further. Thanks,

Dylan

-----Original Message-----

From: Kelley Nelson [mailto:kelley_nelson@dot.ca.gov]

Sent: Monday, October 24, 2011 12:03 PM

To: Dylan.VanDyne@noaa.gov

Subject: Butte Creek Bridge Replacement Project

Hi Dylan - I just spoke with Leah Fisher from the Corps, and she advised me to contact you and ask if you needed something further from me in regards to the gravel augmentation/salmonid habitat enhancement aspect of the Butte Creek Bridge Replacement Project. I have attached the original letter of concurrence from NOAA, however, in a meeting we had with CDFG several months ago, it was discussed that they would contact NOAA/NMFS about the gravel augmentation. I don't believe I've heard anything more about that.

I just submitted the permit applications for the project, and am trying to tie up any/all loose ends as quickly as I can, and this is one. Do I need to re-initiate informal consultation with NOAA/NMFS due to the addition of the spreading the gravel upstream and downstream of the bridge area for improvement to salmonid spawning habitat, or has CDFG already discussed this with you and you don't need anything further? If this is the case, can you please send me anything you may have sent CDFG or written up about it? I will forward it along to Leah as well.

I will also attach the project description, and some mapping with the gravel augmentation information. If you need something further from me, please let me know at your earliest convenience and I will be happy to get it to you asap.

Thanks Dylan. Hope you had a nice weekend and that you have a good week.

CENTRAL VALLEY FLOOD PROTECTION BOARD

3310 El Camino Ave., Rm. 151
SACRAMENTO, CA 95821
(916) 574-0609 FAX: (916) 574-0682
PERMITS: (916) 574-0685 FAX: (916) 574-0682



NOV 2 2012

Permit No. 18767 BD

California Department of Transportation
703 B Street
Marysville, California 95901

Enclosed is your approved Central Valley Flood Protection Board Encroachment Permit Conditions.

Under General Condition Four (4) of the permit, you are required to accomplish the work under direction and supervision of the Department of Water Resources; therefore, you must advise the Department at 3310 El Camino Avenue, Sacramento, California 95821, attention Lorraine Pendlebury, telephone (916) 574-0609, at least ten days prior to starting your project. An addressed postcard is enclosed for your convenience.

Please note that the permit grants the work proposed and constructed in your project description. This permit, in addition to the twelve (12) standard conditions, includes special conditions, which may place limitations on or require modifications to your project. You are advised to read all conditions prior to starting the project. Commencing any work under this permit shall constitute an acceptance of the provisions of the permit and an agreement to perform accordingly. This permit does not relieve you from the responsibility for obtaining authorization from any State, local, or federal agencies for your proposed project.

Please refer to your permit number when communicating with this office. For further information, contact Ashley Cousin at (916) 574-2380.

Sincerely,

A handwritten signature in blue ink that reads "David R. Williams".

David Williams, Chief
Projects Section
Central Valley Flood Protection Board

Enclosure

STATE OF CALIFORNIA
THE RESOURCES AGENCY
THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18767 BD

This Permit is issued to:

California Department of Transportation
703 B Street
Marysville, California 95901

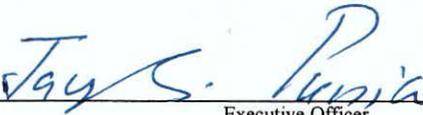
To replace the Butte Creek Bridge (No. 12-0126R) on State Route (SR) 99 in Butte County with a new bridge constructed on the existing northbound alignment. The new bridge would replace the existing bridge with a reinforced concrete box girder bridge (RCBGB). The two-span structure would be supported by two abutments and one pier all on pile. Rock slope protection will be placed on site in addition to bridge replacement. Mitigation for the proposed project will consist of both salmonid habitat streambed enhancement gravel as well as riparian mitigation. The riparian mitigation will consist of planting 100 trees and 100 shrubs at the three upstream mitigation sites, approximated based on a 3:1 replacement ratio for species removed during construction activities. Construction of temporary falsework, cofferdams, and two temporary creek diversions will be required. The project is located on State Route 99 between Estates Drive and Southgate Avenue in Butte County (Section 8, T21N, R2E, MDB&M, Maintenance Area 5, Butte Creek, Butte County).

NOTE: Special Conditions have been incorporated herein which may place limitations on and/or require modification of your proposed project as described above.

(SEAL)

NOV 2 2012

Dated: _____



Executive Officer

GENERAL CONDITIONS:

ONE: This permit is issued under the provisions of Sections 8700 – 8723 of the Water Code.

TWO: Only work described in the subject application is authorized hereby.

THREE: This permit does not grant a right to use or construct works on land owned by the Sacramento and San Joaquin Drainage District or on any other land.

FOUR: The approved work shall be accomplished under the direction and supervision of the State Department of Water Resources, and the permittee shall conform to all requirements of the Department and The Central Valley Flood Protection Board.

FIVE: Unless the work herein contemplated shall have been commenced within one year after issuance of this permit, the Board reserves the right to change any conditions in this permit as may be consistent with current flood control standards and policies of The Central Valley Flood Protection Board.

SIX: This permit shall remain in effect until revoked. In the event any conditions in this permit are not complied with, it may be revoked on 15 days' notice.

SEVEN: It is understood and agreed to by the permittee that the start of any work under this permit shall constitute an acceptance of the conditions in this permit and an agreement to perform work in accordance therewith.

EIGHT: This permit does not establish any precedent with respect to any other application received by The Central Valley Flood Protection Board.

NINE: The permittee shall, when required by law, secure the written order or consent from all other public agencies having jurisdiction.

TEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the State of California, or any departments thereof, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim.

ELEVEN: The permittee shall exercise reasonable care to operate and maintain any work authorized herein to preclude injury to or damage to any works necessary to any plan of flood control adopted by the Board or the Legislature, or interfere with the successful execution, functioning or operation of any plan of flood control adopted by the Board or the Legislature.

TWELVE: Should any of the work not conform to the conditions of this permit, the permittee, upon order of The Central Valley Flood Protection Board, shall in the manner prescribed by the Board be responsible for the cost and expense to remove, alter, relocate, or reconstruct all or any part of the work herein approved.

SPECIAL CONDITIONS FOR PERMIT NO. 18767 BD

THIRTEEN: All work completed under this permit, as directed by the general and special conditions herein, shall be accomplished to ensure that the work is not injurious to adopted plans of flood control, regulated streams, and designated floodways under Board jurisdiction, as defined in California Code of Regulations, Title 23. This permit only applies to the completion of work in the project description located within, or adjacent to and having bearing on Board jurisdiction, and which directly or indirectly affects the Board's jurisdiction.

FOURTEEN: The permittee is responsible for all personal liability and property damage which may arise out of failure on the permittee's part to perform the obligations under this permit. If any claim of liability is made against the Central Valley Flood Protection Board, the Department of Water Resources, the United States of America, a local district or other maintaining agencies and the officers, agents or employees thereof, the permittee shall defend and shall hold each of them harmless from each claim. This condition shall supersede condition TEN, above.

FIFTEEN: All work approved by this permit shall be in accordance with the submitted drawings and specifications except as modified by special permit conditions herein. No further work, other than that approved by this permit, shall be done in the area without prior approval of the Central Valley Flood Protection Board.

SIXTEEN: All addenda or other changes made to the submitted documents by the permittee after issuance of this permit shall be submitted to the Chief Engineer for review and approval prior to incorporation into the permitted project. The submittal shall include supplemental plans, specifications, and supporting geotechnical, hydrology and hydraulics, or other technical analyses. The Central Valley Flood Protection Board shall acknowledge receipt of the addendum or change submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Central Valley Flood Protection Board may request additional information as needed and will seek comment from the U.S. Army Corps of Engineers and / or local maintaining agency when necessary. The Central Valley Flood Protection Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) calendar days. Upon approval of submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes.

SEVENTEEN: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions of project conditions. The photo record shall be certified (signed and stamped) by a licensed land surveyor or professional engineer registered in the State of California and submitted to the Central Valley Flood Protection Board within thirty (30) calendar days of beginning the project.

EIGHTEEN: No further plantings or work, other than that covered by this application, shall be performed in the project area without prior approval of the Central Valley Flood Protection Board. All project mitigation shall comply with the Onsite Mitigation and Monitoring Proposal, which is attached to this permit as Exhibit A and is incorporated by reference. A Long-term Management Plan must be submitted and deemed satisfactory to Board staff prior to permit issuance. The Long-term Management Plan will be attached to Exhibit A which is incorporated by reference to this permit.

NINETEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board, the Department of Water Resources, and their respective officers, agents, employees, successors and assigns, safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The Central Valley Flood Control Board and the Department of Water Resources expressly reserve the right to supplement or take over their defense, in their sole discretion.

TWENTY: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board, the Department of Water Resources, and their respective officers, agents, employees, successors and assigns, safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The Central Valley Flood Control Board and the Department of Water Resources expressly reserve the right to supplement or take over their defense, in their sole discretion.

TWENTY-ONE: The mitigation measures approved by the CEQA lead agency and the permittee are found in its Mitigation and Monitoring Reporting Program (MMRP) adopted by the CEQA lead agency. The permittee shall implement all such mitigation measures.

TWENTY-TWO: The permittee agrees to incur all costs for compliance with local, State, and federal permitting and resolve conflicts between any of the terms and conditions that agencies might impose

under the laws and regulations it administers and enforces.

TWENTY-THREE: The Central Valley Flood Protection Board and the Department of Water Resources shall not be held liable for damages to the permitted encroachment(s) resulting from releases of water from reservoirs, flood fight, operation, maintenance, inspection, or emergency repair.

TWENTY-FOUR: The permittee shall be responsible for repair of any damages to the Butte Creek levees, channel, and other flood control facilities due to construction, operation, or maintenance of the proposed project.

TWENTY-FIVE: No construction work of any kind shall be done during the flood season from November 1st to April 15th without prior approval of the Central Valley Flood Protection Board.

TWENTY-SIX: The permittee shall maintain the permitted encroachment(s) and the project works within the utilized area in the manner required and as requested by the authorized representative of the Department of Water Resources or any other agency responsible for maintenance.

TWENTY-SEVEN: The permittee shall contact the Department of Water Resources, Inspection Branch by telephone, (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. The permittee shall also contact the Central Valley Flood Protection Board's Construction Supervisor at (916) 574-2646 for quality assurance inspection. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

TWENTY-EIGHT: Thirty (30) calendar days prior to start of any demolition and/or construction activities within the floodway, the permittee shall submit to the Chief Engineer two sets of plans, specifications and supporting geotechnical and / or hydraulic impact analyses, for any and all temporary, in channel cofferdam(s), gravel work pad(s), work trestle(s), scaffolding, piles, and/or other appurtenances that are to remain in the floodway during the flood season from November 1 through April 15. The Central Valley Flood Protection Board shall acknowledge receipt of this submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Central Valley Flood Protection Board may request additional information as needed and will seek comment from the U.S. Army Corps of Engineers and / or local maintaining agency when necessary. The Central Valley Flood Protection Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) calendar days.

TWENTY-NINE: All debris that may accumulate around the bridge piers and abutments within the floodway shall be completely removed from the floodway following each flood season.

THIRTY: All debris generated by this project shall be disposed of outside the floodway.

THIRTY-ONE: Cleared trees and brush shall be completely burned or removed from the floodway, and downed trees or brush shall not remain in the floodway during the flood season from November 1 to April 15.

THIRTY-TWO: Fill material shall be placed only within the area indicated on the approved plans.

THIRTY-THREE: Backfill material for excavations shall be placed in up to 8-inch layers and compacted with material as specified in CalTrans Standard Specifications (2010) SS19-3.0E to the density also specified, which is attached to this permit as Exhibit B and is incorporated by reference.

THIRTY-FOUR: Density tests by a certified materials laboratory will be required to verify compaction of backfill within the channel.

THIRTY-FIVE: In the event existing revetment on the channel bank or levee slope is disturbed or displaced; it shall be restored to its original condition or brought to a higher standard, to the satisfaction of Board staff, upon completion of the proposed work.

THIRTY-SIX: Except with respect to the activities expressly allowed under this permit, the work area shall be restored to the condition that existed prior to start of work.

THIRTY-SEVEN: In the event that levee or bank erosion injurious to the facilities of the State plan of flood control occurs at or adjacent to the permitted encroachment(s), the permittee shall repair the eroded area and propose measures, to be approved by the Central Valley Flood Protection Board, to prevent further erosion.

THIRTY-EIGHT: If the permitted encroachment(s) result in any adverse hydraulic impact or if the flows being conveyed in an overland release result in significant scouring the permittee shall provide appropriate mitigation acceptable to the Central Valley Flood Protection Board.

THIRTY-NINE: If the bridge is damaged to the extent that it may impair the channel or floodway capacity, it shall be repaired or removed prior to the next flood season.

FORTY: The permitted encroachment(s) shall not interfere with operation and maintenance of the present or future flood control project. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the flood control project to interfere, the permittee shall be required, at permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Central Valley Flood Protection Board or Department of Water Resources. If the permittee does not comply, the Central Valley Flood Protection Board may modify or remove the encroachment(s) at the permittee's expense.

FORTY-ONE: The permittee may be required, at permittee's cost and expense, to remove, alter, relocate, or reconstruct all or any part of the permitted encroachment(s) if removal, alteration, relocation, or reconstruction is necessary as part of or in conjunction with any present or future flood control plan or project or if damaged by any cause. If the permittee does not comply, the Central Valley Flood Protection Board may remove the encroachment(s) at the permittee's expense.

FORTY-TWO: If the project, or any portion thereof, is to be abandoned in the future, the permittee or successor shall abandon the project under direction of the Central Valley Flood Protection Board and Department of Water Resources, at the permittee's or successor's cost and expense.

FORTY-THREE: At the request of either the permittee or Central Valley Flood Protection Board the permittee and Board shall conduct joint inspections of the project and floodway after significant flood events or flood seasons to assess the integrity and operation of the project, and to assess and respond to any adverse impacts on the floodway or adjacent properties.

FORTY-FOUR: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board. A professional engineer registered in the State of California shall certify that all work was inspected and performed in accordance with submitted drawings, specifications, and permit conditions.

FORTY-FIVE: Upon completion of the project, the permittee shall submit a final completion letter to: Central Valley Flood Protection Board, 3310 El Camino Avenue, Suite 162, Sacramento, California 95821 and the Department of Water Resources, Flood Project Inspection Section, 3310 El Camino Avenue, Suite 256, Sacramento, California 95821.

FORTY-SIX: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Inspection Section, located at 3310 El Camino Ave, Room 256, Sacramento, California, 95821, upon completion of the project.

FORTY-SEVEN: Within 120 days of completion of the project, the permittee shall submit to the Central Valley Flood Protection Board a certification report, stamped and signed by a professional engineer registered in the State of California, certifying the work was performed and inspected in accordance with the Central Valley Flood Protection Board permit conditions and submitted drawings and specifications.

FORTY-EIGHT: The permittee shall be responsible for securing any necessary permits incidental to habitat manipulation and restoration work completed in the flood control project, and will provide any biological surveying, monitoring, and reporting needed to satisfy those permits.

FORTY-NINE: The permittee should contact the U.S. Army Corps of Engineers, Sacramento District, Regulatory Branch, 1325 J Street, Sacramento, California 95814, telephone (916) 557-5250, as compliance with Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act may be required.

FIFTY: The permittee shall comply with all conditions set forth in the comment letter from the Department of the Army (U.S. Army Corps of Engineers, Sacramento District) dated October 17, 2012, which is attached to this permit as Exhibit C and is incorporated by reference.

**Onsite Mitigation and Monitoring Proposal for the
California Department of Transportation's**

**Butte Creek Bridge Replacement Project
on State Route 99 in Butte County**

03-BUT-99

PM 28.1/29.6

EA: 03-3E6201/EFIS: 03-0000-0509-1

Prepared by:

Kelley Nelson

Associate Environmental Planner/Natural Sciences

(530) 741-4583

Monica Finn

Mitigation/Revegetation Specialist

(530) 740-4850

Caltrans District 3 Stewardship Branch

May 2012



Approved By:

Suzanne Melim

Date: *5/8/12*

Suzanne Melim

Environmental Branch Chief

Office of Environmental Management

Caltrans District 3 North Region

Sharon Stacey

Date: *5/8/12*

Sharon Stacey

U.S. Army Corps of Engineers Liaison

Office of Environmental Management

Caltrans District 3 North Region

INTRODUCTION

The California Department of Transportation (Caltrans), in conjunction with the Federal Highway Administration (FHWA), is proposing a northbound bridge replacement project on State Route (SR) 99 in Butte County from highway post miles (PM) 28.4 to 29.4 (Figures 1 and 2). The project area can be located on the Chico USGS 7.5-minute quadrangle (Section 8 of Township 21N Range 2E). The Environmental Study Limit (ESL) encompasses an area of approximately 11 acres.

This Mitigation Monitoring Proposal (MMP) serves to satisfy the revegetation and water quality requirements of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Game (CDFG), the National Marine Fisheries Service (NMFS), and the Central Valley Regional Water Quality Board (CVRWQB). The MMP is also being prepared to satisfy General Condition 13 of the USACE's Nationwide Permit 23 (Approved Categorical Exclusions), which states that a pre-construction notification (PCN) must include a compensatory mitigation proposal with reasonable measures to avoid and minimize adverse effects to aquatic resources.

This plan proposes measures to replace woody riparian trees, removed by construction activities, on a 3:1 ratio. Planting is proposed at three locations upstream of the bridge (Exhibit A) on property owned by the California Department of Fish and Game. The three locations were identified during an interagency field meeting on April 24, 2012, between representatives from California Department of Transportation, California Dept. of Fish and Game and California Department of Water Resources. Previously proposed planting locations caused flooding and increased maintenance concerns for the California Department of Water Resources who is responsible for maintaining the floodplain. Maintenance activities currently include clearing, or reducing vegetation and limbing of trees, except within the 15 feet adjacent to the water's edge, which in agreement with the California Department of Fish and Game, the Department of Waters Resources leaves as a vegetated buffer and does not do any maintenance in. The Department of Water Resources requested Caltrans identify planting locations at least 50 feet upstream or downstream of the bridge and within this 15 foot buffer zone.

PROJECT DESCRIPTION

The existing northbound (NB) bridge structure over Butte Creek is experiencing substructure scour and continued deck deterioration and is in need of a replacement. This bridge has a history of severe deck issues as a result of being constructed with poor materials and is experiencing continual spalling, or chipping away of material. The purpose of the project is to maintain the integrity of the transportation facility by replacing the existing bridge structure.

Within the limits of the project, SR 99 is a 4-lane expressway with two lanes traveling southbound (SB) and two lanes traveling NB. The NB roadway consists of two 12-foot lanes and 8-foot shoulders, while the southbound roadway consists of two 12-foot lanes and 5 to 10-foot shoulders.

The existing bridge structure is a 5 span continuous reinforced concrete structure with 4 pier walls that is approximately 323 feet long and 43.5 feet wide. The new bridge would be a 324 feet long reinforced concrete box girder bridge with two 12-foot-wide lanes and a 5-foot wide shoulder on the west side and 10-foot wide shoulder on the east side. Two abutments on piles and 1 pier wall on spread footings would support the 2 span structure. Temporary false work,

cofferdams, and a creek diversion/gravel pad crossing will be required for the demolition and construction of the new bridge.

Roadwork will involve removing and replacing failed pavement areas, reconstructing existing shoulders, placing new Asphalt Concrete (AC) pavement, grinding Portland Cement Concrete (PCC), constructing a temporary crossover median detour, temporary culverts, extending existing culverts, replacing drains, placing Rock Slope Protection (RSP), removing and replacing flashing beacons and traffic sensors, installing temporary highway lighting, and constructing new bridge approach metal beam guard railing (MBGR). The southbound roadway will be utilized for detouring traffic and will require some reconstruction to strengthen the shoulders. The roadways (NB and SB) within the project limits will be paved with an Open Graded Friction Course-OGFC, formally known as Open Graded Asphalt Concrete overlay.

Both the NB and SB lanes will remain open through the construction zone. The SB bridge (#12-0126L) will accommodate three lanes of traffic separated by a temporary concrete barrier (two SB lanes and one NB lane), requiring a one-lane crossover median detour. While the bridge is under construction, it will accommodate one lane of traffic at a time while the other half is in being constructed. Once one half of the bridge is built, traffic will switch to the newly constructed half, and the other half of the bridge will be built.

Vegetation in Butte Creek, adjacent to the bridge varies by channel landform and current maintenance activities. On the upstream side of the bridge there is a 20-foot wide strip of riparian vegetation that borders Butte Creek on the south bank. This vegetation is dominated by large alders (*Alnus rhombifolia*), along with some sycamore (*Platanus racemosa*) and Oregon ash (*Fraxinus latifolia*), all of which are adjacent to the bridge area and form a dense vegetation band along the bank. The northeast side of the creek is dominated by willows including sandbar willow (*Salix exigua*), arroyo willow (*S. lasiolepis*), and red willow (*S. laevigata*). This is more of an ephemeral side channel area. The willows here are young and are likely either regularly removed by high flows, or with flood maintenance activities. There are also Fremont cottonwoods (*Populus fremontii*) present immediately north of the willow area, further from the water channel. Sycamore and ash are interspersed here as well, along with an understory of annual grasses and forbs. The riparian vegetation here consists of groupings of trees or individuals scattered over the floodplain, with most of these appearing to be limbed by flood control activities. The southwest and northwest banks of the creek on the downstream side of the bridge, do not currently have riparian trees present near the creek, likely due to vegetation clearing.

The understory in the floodplain adjacent to the bridge consists mainly of yellow star thistle (*Centaurea solstitialis*), tree-of-heaven (*Ailanthus altissima*), scotch broom (*Cytisus scoparius*), wild grape (*Vitis californica*), Himalayan blackberry (*Rubus discolor*), mugwort (*Artemisia douglasiana*), sedge (*Cyperus* sp), mint (*Mentha* sp.), plantain (*Plantago major*), and poison oak (*Toxicodendron diversilobum*).

No wetlands will be impacted by the project as there are none within project limits, however; there will be approximately 0.11 acres of permanent impacts, and 0.48 acres of temporary impacts to other waters of the U.S. in Army Corps of Engineers and California Department of Fish and Game jurisdictional areas.

Work windows will be utilized, and construction activities will be conducted during the dry season. Where possible, equipment will be used outside of the active stream channel. Staging areas will be on existing disturbed areas; vegetation will be trimmed rather than removed where feasible; environmentally sensitive areas (ESA's) will be established around elderberry shrubs that will not be impacted by project activities; riparian and stream habitat disturbed by the project will be restored; and Caltrans Best Management Practices (BMPs) for containment measures and erosion control will be utilized as well. Elderberry shrubs permanently lost by project activities will be mitigated for at an approved conservation bank.

NMFS has requested that Caltrans mitigate at a 3:1 ratio for loss of riparian species adjacent to the creek that provide shading. Restoration of the habitat will potentially benefit overall water quality as well as provide shaded riverine habitat for aquatic species, including salmon and trout that utilize Butte Creek as a migration corridor. Having only one pier in the creek along with RSP on the southeast bank, partially in the water, will potentially benefit overall water quality and improve the existing functions and values of surface water systems within and downstream from the ESL.

PROJECT IMPACTS

There are no wetlands within project limits, therefore no compensation for these waters of the U.S. will be necessary.

A total of 0.082 acre of USACE jurisdictional (below the ordinary high water mark) other waters of the U.S., including Butte Creek and the one culvert drainage exhibiting a defined channel, will be permanently impacted by the placement of 461.27 yds³ of fill. Approximately 460 yds³ of this fill will come from the construction of a new concrete pier and footing for the new northbound bridge, and placement of Rock Slope Protection (RSP) in the creek.

A total of 0.47 acre of soil and vegetation will be temporarily impacted above the ordinary high water mark in the bridge area. This includes the approximately 16 riparian trees that will be removed due to the construction of temporary access roads, and other project construction related activities. The trees consist mainly of cottonwoods, alders, and sycamores.

There are also five culverts within project limits that will be extended during construction activities. None of these are jurisdictional due to having no connectivity to other waters. These culverts serve only to convey stormwater or roadside runoff after rain events. They are not included under biological impacts or mitigation measures, and will be revegetated as part of Caltrans permanent erosion control measures.

GOAL

A 3:1 replacement ratio of riparian trees removed by construction activities.

OBJECTIVE

The proposed mitigation intends to successfully establish 50 riparian trees at the end of the five year responsibility period.

IMPLEMENTATION AND SCHEDULE

Project construction activities are scheduled to begin in the year 2012 and will most likely extend over three construction seasons. Temporary on-site erosion control will be in place at the end of

each work season, and permanent erosion control will be provided by the close of the final work season. Planting will begin in the fall following completion of construction (approximately fall of 2015). Planting is proposed over the period between October 15 and November 15. This window will allow for plants to establish before the onset of cold temperatures and high flows. If supplemental planting is needed, it will be implemented the following winter/spring, between February 15 and March 15. Caltrans will contract with the California Conservation Corps to implement planting, watering and maintenance. Planning and oversight of all work will be done by the Caltrans Revegetation Specialist.

PLANTING PLAN

Three locations were selected for planting as part of an interagency field review on Tuesday April 24, 2012. These locations were chosen because of their distance from the bridge structure to reduce flood concerns (greater than 50 feet), but also by their current lack of woody vegetation and appropriate conditions for planting (close enough to water). In general, the 15 foot buffer zone along Butte Creek water channel is densely vegetated, but there are areas along the water channel that lack woody riparian vegetation (Exhibit A). There was not one area large enough to ensure adequate room for Caltrans planting needs, so three areas were selected, each with varying site characteristics, and believed acceptable for planting and achieving our mitigation goal (Exhibit A). The limits of these planting areas are provided in Exhibit A. Due to variability in soil and habitat conditions, the specific placement of plants will be determined in the field prior to planting, not on project plans. In general, the lower limit of the 15 foot planting zone will be identified in the field based on the typical water line or lower limit of vegetation establishment.

PLANTING STRATEGY

This plan proposes to plant many small container plants and cuttings, many more than is needed to allow for natural mortality, site conditions and plant variability. Past mitigation results has shown Caltrans that better overall long term plant survival and establishment is achieved when:

- Plant using many small plants, planted over a larger area,
- Use of plants with a natural root to shoot ratios, that have not been in the nursery for long periods of time,
- planted in fall (Oct-Nov) when temperatures are still warm enough for root growth
- planted in fall to take advantage of the full precipitation season
- and require less summer watering or maintenance

This strategy increases our chances of putting the right plant, in the right place, under the right conditions for long term success, rather than using a strategy based on planting just the number needed to be successful and then watering and performing maintenance for several years to ensure success of those specific individual plants.

Site A - Cut Slope: This location is on the south side of the creek, approximately 700-900 feet upstream of the bridge (Exhibit A). This is a cut bank that currently has little vegetation and appears unstable (actively eroding). On close inspection, some areas are stabilizing and vegetation is establishing. Caltrans is proposing to plant a narrow band of alder, mulefat and sandbar willow along the edge of the water channel. Alder will be from container materials and will be planted approximately 20 feet apart. Sandbar willow and mulefat will be from cuttings, both of which are shrub sized plants rather than trees. Cuttings will be 24 inches in length, and

will be planted 18 inches into the soil, approximately 3-5 feet apart. Cuttings have variable success, so many more than is needed will be planted. All planting at this location will be within 1-2 feet of the water line. Planting will only occur at the base of the slope, the upper portions of the slope are too steep for planting.

Site B – Terrace: The second location is a grassy terrace just upstream of Site A, on the south side of the creek, approximately 900-1100 feet upstream of the bridge (Exhibit A). The terrace is a few feet above the water's edge, with just a few widely spaced trees present. Caltrans is proposing to plant on the terrace, over the 15 foot buffer zone from the water's edge. Plantings here will focus on cottonwood, Oregon ash and sycamore, with a few willow and mulefat. Cottonwood and sycamore from containers, will be planted approximately 15 feet apart, with mulefat and willow planted from cuttings, between them approximately 5 feet apart.

Site C – Bedrock Area: The third location is on the north side of the creek approximately 1100-1250 feet upstream of the bridge. This location has a large bare area that extends out into the water channel that corresponds to hardpan or bedrock exposed at the surface (Exhibit 1). Planting areas appear to be present on the west and north sides of the bedrock outcrop. Caltrans is proposing to plant a mix of sycamore, Oregon ash and cottonwood approximately 15 feet apart, with willow and mulefat planted between them approximately 5 feet apart. Planting will only occur within the buffer zone, within the 15 feet of the water's edge, outside of the bedrock.

SPECIES TO BE PLANTED

white alder (*Alnus rhombifolia*)
 Oregon ash (*Fraxinus latifolia*)
 arroyo willow (*Salix lasiolepis*)
 red willow (*Sali. laevigata*)

California sycamore (*Platanus racemosa*)
 sandbar willow (*Salix exigua*)
 Fremont cottonwoods (*Populus fremontii*)

PLANT MATERIALS

All cuttings and container plants will be from sources generated from the vicinity of the project. Cuttings will be taken from sources upstream and downstream of the work area, with no more than 50% of willows in the area affected and no more than 30% of individual plants removed. Container plants will be purchased from a commercial nursery and will be from source material from the vicinity of the project and similar elevation and habitat characteristics.

MULCH

No mulching will occur because all planting will be performed in the active channel and any mulch placed will be carried away by water flows.

IRRIGATION

Container plants and cuttings will be watered at planting and will receive supplemental watering by hand, using water from Butte Creek. Watering will be done by the CCC at the direction of the Revegetation Specialist. The watering schedule will be based on natural precipitation, temperature, and site monitoring to determine actual needs. The goal will be to provide water necessary to successfully establish deep-rooted plants that are quickly able to survive on their own, rather than shallow surface-rooted plants that rely on regular watering. To accomplish this goal, the proposed schedule will be to water plants after planting once a week for four weeks, and then once every other week until the onset of rains in fall. Watering will be performed over the first summer, if determined necessary, based on site reviews. Watering will be performed over

the fall and summer of the second year only if additional planting is implemented and watering is determined needed. Irrigation does not need to be long term because planted material will be within reach of water table within the first season.

MAINTENANCE PLAN

Caltrans will maintain the plantings for five years. The plantings are expected to successfully establish within the first season. However, maintenance will be available over the 5 year responsibility period. Maintenance funding will be built into the five year CCC contract to address needed remedial measures. Potential maintenance will include such activities as replacement plantings, removing dead plants or weeding plant basins. All maintenance actions will be under the direction of the Caltrans Revegetation Specialist.

Site inspections are proposed after planting, and then over the following five growing seasons. These site inspections will help identify the need for specific maintenance actions. The mitigation areas will be inspected at least twice the first fall after planting and four times over the first summer to verify plant establishment, growth, watering and maintenance needs, and to check whether any problems have occurred. If no problems have occurred, two inspections per year will be performed during years two through five. If problems are identified, additional inspections may be necessary to verify that adequate remedial action has taken place.

PROTECTIVE SIGNS

Caltrans will mark plantings and work with Water Resources and California Department of Fish and Game to place signs to identify mitigation.

WEEDS

Weeds will be hand removed from planting basins and planting areas to reduce competition. The only weeds we will address will be ones that threaten the survival of the plantings, example giant reed grass, broom, tamarisk, or yellow star thistle that occur immediately adjacent to plantings. Caltrans does not propose to remove invasive weeds from larger areas around the bridge or mitigation planting areas.

LONG TERM MAINTENANCE

No long term maintenance actions are proposed after successfully achieving our mitigation goals and the five year responsibility period is complete. Planting will be completely within the 15 foot buffer along the water channel where routine maintenance is not implemented.

MONITORING

Monitoring will be performed once each year, for 5 years, between April 1 and June 1 of each year. Riparian sites with primarily deciduous plants should be monitored before dry conditions occur and plants loose leaves, leading to possible incorrect conclusions regarding survival. Monitoring for this project will involve a census of plants to determine survival rate of planting and cuttings. Results will be documented on aerials or project plans. Permanent photo points will be set up to document the revegetation effort and show yearly increases in cover

MONITORING REPORT

Results from monitoring will be documented and forwarded to regulatory agencies annually for 5 years. The report would be submitted no later than December 31st of each year. The first monitoring report would be submitted by December 31st of the second year post-construction. If

the mitigation activities have met the criteria described below, then the mitigation will be considered successful, a final annual report will be submitted, and no further monitoring or maintenance activities will be conducted beyond the 5 year monitoring period

SUCCESS CRITERIA

First –Second year success criteria will be met if:

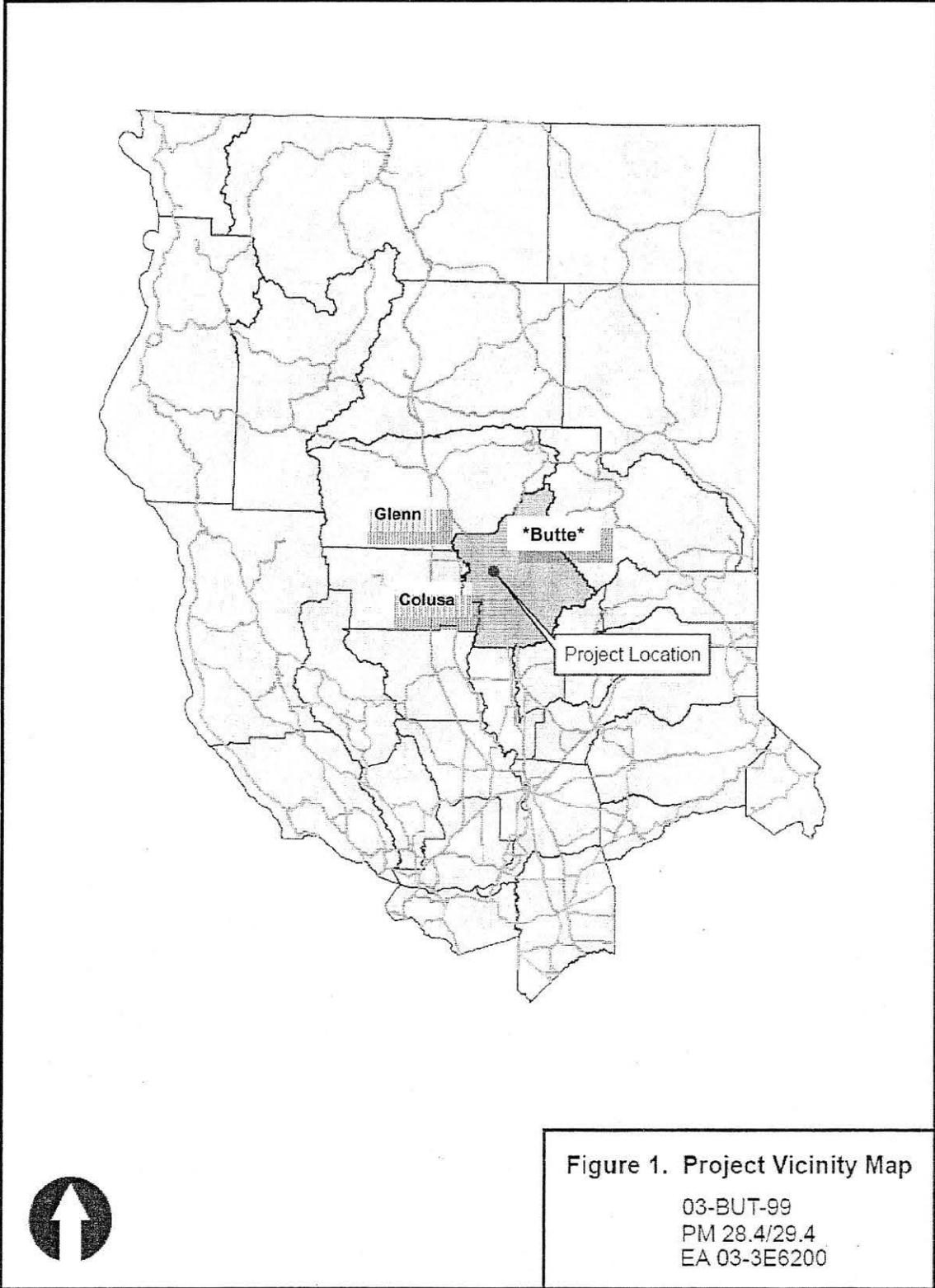
- A minimum of 75 riparian trees have survived from the initial planting.

Third-Fifth year success criteria will be met if:

- A minimum of 50 riparian trees have survived from the initial planting
- Continual increases in plant cover are documented through photos.

ADAPTIVE MANAGEMENT/REMEDIAL MEASURES

If success criteria are not met for all or any portion of the mitigation project in any year, additional effort will be made to meet the requirements. The reason for not meeting the success criteria will be evaluated and corrected. If significant measures are needed, the planting strategy will be re-evaluated, including looking at soil conditions, hydrology, site preparation, planting techniques, and plant materials. Caltrans will coordinate with the regulating agencies to determine appropriate remedial actions, which could include in lieu fees or other off-site measures. If significant remediation measures are needed, the maintenance, monitoring, and reporting obligations will continue for 5 years after implementation of such measures or until the success criteria have been met, whichever occurs first.



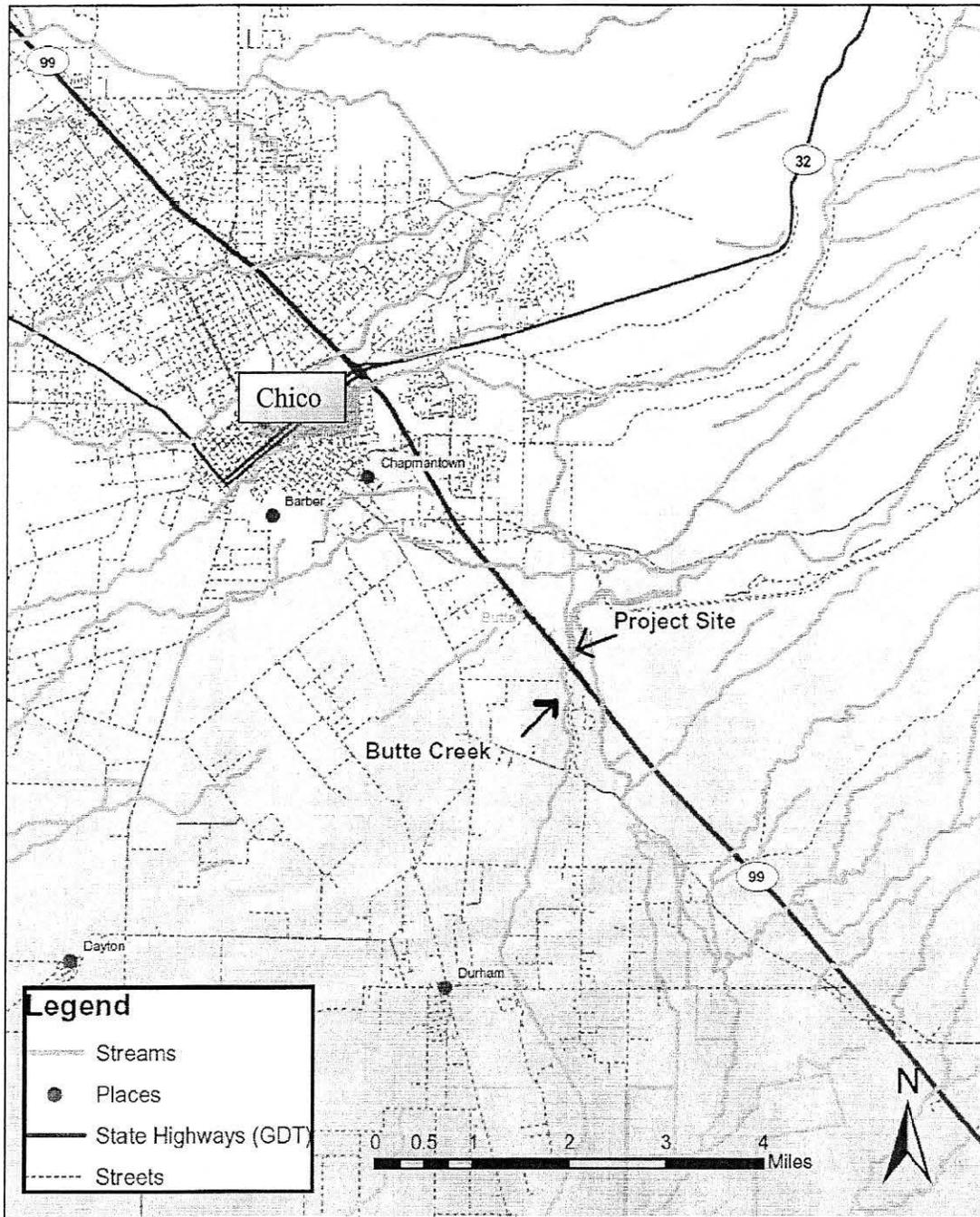


Figure 2. Project Location Map



DEPARTMENT OF WATER RESOURCES

SUTTER MAINTENANCE YARD
8908 STATE HIGHWAY 20
P.O. BOX 40
SUTTER, CA 95982



October 30, 2012

Nancy Moricz, Project Section Engineer
Central Valley Flood Board
Flood System Improvements Section
3310 El Camino Avenue
Sacramento, California 95821-6308

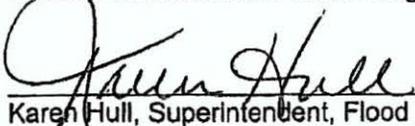
Dear Ms. Moricz:

Subject: Request for Concurrence – Long Term Maintenance Plan – for the Three Planting Areas
Ref: Pending Central Valley Flood Protection Board (CVFPB) Encroachment Permit Application 18767.

You have requested a letter with my concurrence regarding long term maintenance for the three environmental mitigation planting areas Caltrans is required to complete as part of this bridge replacement project. According to the permit application attachment, "Onsite Mitigation and Monitoring, the Maintenance Plan", the first 5-years will be performed by Caltrans, which includes removing dead plantings from the floodway. Beyond 5-years, we understand that our maintenance staff will not conduct regular maintenance in this area because it is a non-maintenance area, however we will remove debris, dead or fallen trees that were planted within the three areas, so as not to create a hydraulic/floodway concern. This would meet the requirements of Permit No. 18767 regarding debris and maintenance.

I have reviewed the attached Onsite Mitigation Proposal again and am providing my concurrence for the above stated long term maintenance concerning the trees and scrubs planted within the three planting areas upstream of the Butte Creek Bridge.

I concur with the above stated long term maintenance plan.



Karen Hull, Superintendent, Flood Mgmt, Sutter Yard

10/30/2012
Date



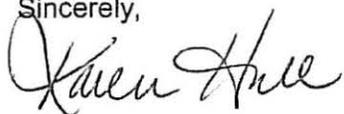
Signature Project Engineer
Caltrans

10/30/2012
Date

Ms. Nancy Moricz
October 30, 2012
Page 2

If you have questions or need additional information, please contact me at the number above.

Sincerely,

A handwritten signature in cursive script that reads "Karen Hull".

Karen Hull, Superintendent
Sutter Maintenance Yard

Attachments

cc: Nancy Moricz, Project Section Engineer for CVFPB
David R. Williams, Chief Projects Section for CVFPB
Dennis Jagoda, Caltrans, District CVFPB Coordinator
John Holder, Caltrans, Project Manager
Steve Jaques, Caltrans, DES CVFPB Liaison

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
 Transportation Laboratory
 5900 Folsom Boulevard
 Sacramento, California 95819-4612



METHOD OF TEST FOR RELATIVE COMPACTION OF UNTREATED AND TREATED SOILS AND AGGREGATES

CAUTION: Prior to handling test materials, performing equipment setups, and/or conducting this method, testers are required to read "**SAFETY AND HEALTH**" in Section K of this method. It is the responsibility of the user of this method to consult and use departmental safety and health practices and determine the applicability of regulatory limitations before any testing is performed.

A. GENERAL SCOPE

This method of test shall be used to determine the relative compaction of untreated and treated soils and aggregates.

Relative compaction in this method is defined as the ratio of the in-place wet density of a soil or aggregate to the test maximum wet density of the same soil or aggregate when compacted by a specific test method.

The in-place, wet density shall be determined in accordance with Part 1 of this method of test.

The laboratory test maximum wet density and percent relative compaction shall be determined in accordance with Part 2 of this method of test.

PART 1. IN-PLACE WET DENSITY

A. SCOPE

The principal use of the in-place wet density value is in the relative compaction control of earthwork construction; however, the identical procedure and apparatus are also employed to obtain data for volume-to-weight conversion factors and shrinkage or swell factors. The determination of the in-place wet density requires excavating and weighing

a sample of soil from the area under investigation, measuring the volume of the sample excavation by back-filling with a calibrated test sand, and calculating the unit wet weight of the excavated sample.

B. TEST PROCEDURE

This test shall be done in accordance with AASHTO T 191, "Density of Soil In-Place by the Sand-Cone Method."

NOTE: Typically, the test hole excavation alone will not provide a sufficient volume of material required for completion of Part 2 of this test method. Therefore, it is necessary to obtain a bulk sample of soil immediately adjacent to the excavated test hole following the completion of the sand volume measurement.

C. RECORDING DATA

The block headed "Sand Volume Data" on the Relative Compaction Test Worksheet provides for the data accumulated at the in-place test hole site.

PART 2. LABORATORY COMPACTED TEST MAXIMUM WET DENSITY AND PERCENT RELATIVE COMPACTION

A. SCOPE

A bulk sample of soil is divided into smaller portions. These portions are prepared with varying moisture contents

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to form test specimens, which are individually compacted by a uniform compactive effort, to determine the test maximum density for the particular soil under consideration.

NOTE: The test maximum density determination and percent relative compaction for Class A CTB is determined according to California Test 312.

B. APPARATUS

1. The standard California impact compaction test apparatus consisting of a split cylindrical mold, a 10.0 lb tamper, a metal piston, and a piston-handling rod, as illustrated in Attachment 1. (Note: see CTM 110 for calibration.)
2. A concrete base block, or an equally rigid body, approximately 1 cubic foot in size.
3. A balance or scale of at least 3 kg capacity and sensitive to 1 g.
4. Miscellaneous mixing bowls, spoons and spatulas, five moisture-sealed containers (approximately 1 gallon capacity) to be used to store each specimen and five moisture-sealed containers (approximately $\frac{1}{4}$ gallon capacity) to be used to store each portion of a specimen.

C. BULK SAMPLE

Obtain a bulk sample of soil, 35 lbs minimum in weight, at the site of the in-place density test hole. It is essential that the bulk sample be preserved at the same moisture as prevailed at the time of excavation for the duration of the test. Use only moisture-proof containers and protect from high temperatures.

D. PREPARATION OF TEST SPECIMENS

1. Separate the bulk sample on the $\frac{3}{4}$ -inch sieve, and weigh both the retained and passing fractions and compute the percentage retained in

terms of wet weight of the total bulk sample. If 10 % or more of the total weight is retained on $\frac{3}{4}$ -inch sieve, follow the test procedure set forth in Section I of this Part 2. If the retained $\frac{3}{4}$ -inch fraction comprises less than 10 % by weight of the total bulk sample, discard it and divide the passing $\frac{3}{4}$ -inch fraction into representative test specimens of exactly equal weight, each sufficient in amount to form a compacted test specimen of 10 to 12 inches in height when compacted as specified in the following section E.

2. It is of the utmost importance that all of the bulk sample material be thoroughly mixed. Each test specimen must be representative of the mass, be of equal weight, be weighed in immediate succession, and be placed at once in the one-gallon moisture-sealed individual containers.
3. The correct weight for each test specimen will depend on the soil type and the moisture content; 2200 to 2700 grams wet weight is the usual range of weight.
4. Record the initial weight of the individual test specimens on line "I" of the Relative Compaction Test Worksheet.

E. COMPACTION OF TEST SPECIMENS

1. Divide one of the test specimens prepared as outlined in the foregoing Section D into five approximately equal portions by either weight or volume measurement, and store in separate $\frac{1}{4}$ -gallon moisture-sealed containers. Place one portion in the test mold and compact it with 20 blows of the tamper dropping free from a height of 18 inches above the surface of the material in the mold. Repeat this operation for each of the remaining four portions. After the compaction of the fifth portion, place the piston in the mold and level the top of the compacted specimen with five blows of the tamper dropping free

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- from a height of 18 inches above the surface of the piston.
2. With the tamper foot resting on the piston atop the compacted test specimen, read the graduated tamper shaft to the nearest graduation at a point level with the top of the mold. Enter this value on line "J."
 3. Obtain the adjusted wet density in grams per cubic centimeter from Table 1 corresponding to the tamper shaft graduation reading using the column corresponding to the initial wet weight of test specimen (line "I") and record it on line "K."
 4. Save the specimen temporarily for possible later use. (See the first paragraph of Section G of this Part 2).
 5. Adjust the moisture contents of the remaining test specimens to satisfy the following conditions:
 - a. The object is to have at least one test specimen with a moisture content below test optimum, one close to optimum and one above optimum, at about 2 % moisture content increments, with a minimum of three test specimens. While the actual moisture contents will not be known, the moisture content of the test specimen with the highest adjusted wet density is the test optimum moisture content even though the moisture content is unknown. Therefore, the primary objective is to have a number of test specimens and a range of moisture contents such that at least one specimen will be compacted at a moisture content less than, and one at a moisture content greater than, the moisture content of the specimen having the highest adjusted wet density. If this condition cannot be satisfied with the minimum three test specimens it will be necessary to fabricate additional specimens.
 - b. The first test specimen is generally compacted at the moisture content present in the bulk sample. If this specimen appears to be considerably drier than the optimum, mix additional water into each of the remaining specimens. If it appears to be definitely wetter than the optimum, reduce the moisture content of the other specimens by aeration. Partial oven drying may be used, but do not completely oven-dry the specimens and then remix with water. If it appears to be close to the optimum, increase the moisture content of one of the remaining test specimens and reduce it in the other one to bracket the initial specimen thought to be at optimum.
 - c. The test optimum moisture content will usually be the minimum moisture content which will ball the soil readily when compressed into a roll by the grip of the hand, but still permit the roll to be broken without crumbling or pulverizing appreciably at the breaking point.
 - d. The base plate of the test mold normally shows indications of dampness when a soil is compacted at the test optimum moisture content. Free water on the base plate definitely denotes excessive moisture content. A dry, dusty base plate signifies a deficiency of water.
 6. After adjustment of the moisture content, compact each of the remaining test specimens in the mold, then record the water adjustment, tamper reading and the corresponding adjusted wet density from the chart on Table 1 using the column corresponding to the initial wet weight (line "I").
 7. Regardless of the soil type or particle sizes involved, fresh soil (not soil

from previously compacted specimens) must be used in the compaction of each test specimen. The compactive effort being equal for each layer, it is also important that the thickness of layers be equal to assure uniformity of compaction between test specimens.

8. Throughout the compacting operation the test mold must stand either on the standard concrete base block or on an equally rigid body.
9. In reassembling the test mold after removing a core, the wing nut should be drawn up only finger tight. The purpose of the wrench is to release the wing nuts when locked by expansive soils in the mold. Excessive tightening of the nuts distorts the circular cross-section of the mold. In gauging the 18-inch height of fall for the tamper, the hook and rod arrangement, shown in Attachment 1, should be used.

F. COMPUTATION OF RELATIVE COMPACTION

Compute the percent relative compaction to the nearest 0.1 % by the formula:

$$\% \text{ Relative Compaction} = (D_1/D_2) \times 100$$

Where:

D_1 = In-place wet density as shown on line "H."

D_2 = Highest adjusted wet density as determined by this method.

For reporting and specification compliance purposes, show the percent relative compaction as a whole number. If the computed value ends in a number with a fractional portion of 0.5 % or greater, report the relative compaction as the next higher whole number. If the computed value ends in a number with a fractional portion of less than 0.5 %, report it without changing the whole number.

Attachment 3 presents an example of a properly completed Relative Compaction Test Worksheet.

G. MOISTURE CONTENTS

The moisture content of the specimen with the highest adjusted wet density is the optimum moisture. The moisture content of the specimen compacted without addition or reduction of water will represent the in-place moisture content of the soil at the test site. If either moisture content is desired, the determination is made in accordance with California Test 226. Once the moisture contents are determined, percent relative compaction can also be determined by relating dry in-place density to dry test maximum density.

Provision is made at the bottom of the Relative Compaction Test Worksheet for determination of the Moisture Adjustment for Aggregate Base Pay Quantities, if desired.

H. MOISTURE-DENSITY CURVE

A moisture-density curve may be formed by plotting the adjusted wet density versus change in grams of water added or subtracted in adjusting the moisture contents of the test specimens. The sample curve appearing on Attachment 3 was plotted from the data presented on line "K" and the "Water Adjustment" line.

The highest point on the curve represents the maximum density, in this instance 2.14 at 0 grams of water ("0 grams" thus means in-place moisture content at test site is optimum moisture).

I. CORRECTION FOR OVERSIZE MATERIAL

1. The diameter of the test mold limits the size of particles that may be included in the test to that passing $\frac{3}{4}$ -inch sieve. In those instances where the original material from which the test specimens are obtained contains 10 % or more by weight of particles retained on the $\frac{3}{4}$ -inch sieve,

a correction must be applied to the test.

The density correction is calculated by the following:

$$\text{Corrected Density} = \frac{100}{\frac{\% -3/4 \text{ inch}}{G_1} + \frac{\% +3/4 \text{ inch}}{YG_2}}$$

G_1 = Specific gravity of - 3/4 inch material

G_2 = Specific gravity of +3/4 inch material

Y = Coefficient for +3/4 inch aggregate

| <u>% +3/4 inch</u> | <u>Y</u> |
|--------------------|----------|
| 20 or less | 1.00 |
| 21-25 | 0.99 |
| 26-30 | 0.98 |
| 31-35 | 0.97 |
| 36-40 | 0.96 |
| 41-45 | 0.95 |
| 46-50 | 0.94 |

2. Record the total weight of bulk sample on line "L."
3. Separate the bulk sample on the 3/4-inch sieve, wash the retained 3/4-inch material, remove excess surface water by rolling sample in a large, absorbent cloth. Weigh in air and record on line "M."
1. Weigh the retained 3/4-inch fraction in water and record on line "N."
5. The impact test is performed on the passing 3/4-inch fraction as outlined in Sections C through E of this Part 2.
6. The remainder of the calculations necessary to compensate for the retained 3/4-inch material and to determine percent relative compaction is shown on lines "O" through "V."
7. When a number of tests on soil containing essentially the same nature of retained 3/4-inch material are anticipated, a constant may be developed to minimize the weighing in air and water operations.

J. SIMPLIFICATIONS FOR CONSTRUCTION CONTROL

Construction control by wet density tests may be expedited. If the relative compaction based on any test specimen density is below the specified minimum it may be immediately reported that the area under test has failed to meet the specifications. It is not necessary to fabricate additional test cores for the reason that if a higher wet density was reached with subsequent test cores the relative compaction based on this higher density would be still lower than that indicated by the single core. When the relative compaction indicated by a single test core is more than the minimum specified, additional cores are necessary to be certain that any increase in wet test maximum density attained with the subsequent cores does not lower the relative compaction value to below the specification minimum.

K. SAFETY AND HEALTH

Prior to handling, testing or disposing of any waste material, testers are required to read Part A, (Section 5.0), Part B, (Section 5.0, 6.0, 10), and Part C, (Section 1.0) of Caltrans Laboratory Safety Manual.

REFERENCES

California Tests 231, 312, 226 and 110
ASTM D 1556

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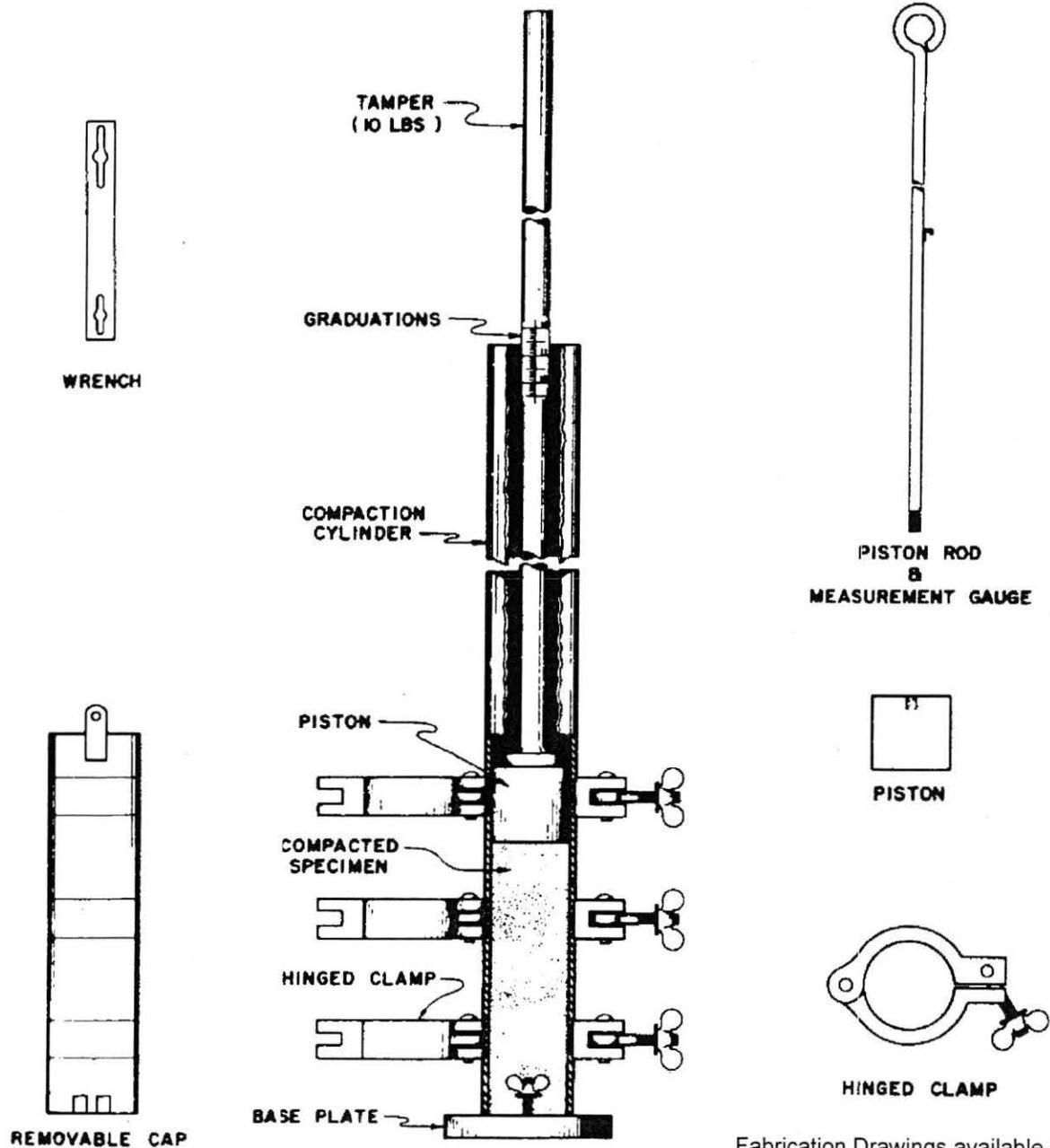
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TABLE 1
CALIFORNIA IMPACT TEST APPARATUS CONVERSION TABLE

Tamper Reading to Grams per Cubic Centimeter for Impact Test Core Weights

| Tamper Reading | Weight of Test Core (g) | | | | | | | | | | |
|----------------|-------------------------|------|------|------|------|------|------|------|------|------|------|
| | 2200 | 2250 | 2300 | 2350 | 2400 | 2450 | 2500 | 2550 | 2600 | 2650 | 2700 |
| 10 | 2.09 | 2.13 | 2.18 | 2.23 | 2.27 | 2.32 | 2.37 | 2.42 | 2.46 | 2.51 | 2.56 |
| 10.1 | 2.06 | 2.11 | 2.16 | 2.21 | 2.25 | 2.30 | 2.35 | 2.39 | 2.44 | 2.49 | 2.53 |
| 10.2 | 2.04 | 2.09 | 2.14 | 2.18 | 2.23 | 2.28 | 2.32 | 2.37 | 2.42 | 2.46 | 2.51 |
| 10.3 | 2.02 | 2.07 | 2.12 | 2.16 | 2.21 | 2.25 | 2.30 | 2.35 | 2.39 | 2.44 | 2.48 |
| 10.4 | 2.01 | 2.05 | 2.10 | 2.14 | 2.19 | 2.23 | 2.28 | 2.32 | 2.37 | 2.42 | 2.46 |
| 10.5 | 1.99 | 2.03 | 2.08 | 2.12 | 2.17 | 2.21 | 2.26 | 2.30 | 2.35 | 2.39 | 2.44 |
| 10.6 | 1.97 | 2.01 | 2.06 | 2.10 | 2.15 | 2.19 | 2.24 | 2.28 | 2.33 | 2.37 | 2.41 |
| 10.7 | 1.95 | 1.99 | 2.04 | 2.08 | 2.13 | 2.17 | 2.21 | 2.26 | 2.30 | 2.35 | 2.39 |
| 10.8 | 1.93 | 1.97 | 2.02 | 2.06 | 2.11 | 2.15 | 2.19 | 2.24 | 2.28 | 2.33 | 2.37 |
| 10.9 | 1.91 | 1.96 | 2.00 | 2.04 | 2.09 | 2.13 | 2.17 | 2.22 | 2.26 | 2.30 | 2.35 |
| 11 | 1.90 | 1.94 | 1.98 | 2.03 | 2.07 | 2.11 | 2.15 | 2.20 | 2.24 | 2.28 | 2.33 |
| 11.1 | 1.88 | 1.92 | 1.96 | 2.01 | 2.05 | 2.09 | 2.13 | 2.18 | 2.22 | 2.26 | 2.31 |
| 11.2 | 1.86 | 1.90 | 1.95 | 1.99 | 2.03 | 2.07 | 2.12 | 2.16 | 2.20 | 2.24 | 2.29 |
| 11.3 | 1.85 | 1.89 | 1.93 | 1.97 | 2.01 | 2.06 | 2.10 | 2.14 | 2.18 | 2.22 | 2.26 |
| 11.4 | 1.83 | 1.87 | 1.91 | 1.95 | 2.00 | 2.04 | 2.08 | 2.12 | 2.16 | 2.20 | 2.25 |
| 11.5 | 1.81 | 1.85 | 1.90 | 1.94 | 1.98 | 2.02 | 2.06 | 2.10 | 2.14 | 2.18 | 2.23 |
| 11.6 | 1.80 | 1.84 | 1.88 | 1.92 | 1.96 | 2.00 | 2.04 | 2.08 | 2.12 | 2.17 | 2.21 |
| 11.7 | 1.78 | 1.82 | 1.86 | 1.90 | 1.94 | 1.98 | 2.03 | 2.07 | 2.11 | 2.15 | 2.19 |
| 11.8 | 1.77 | 1.81 | 1.85 | 1.89 | 1.93 | 1.97 | 2.01 | 2.05 | 2.09 | 2.13 | 2.17 |
| 11.9 | 1.75 | 1.79 | 1.83 | 1.87 | 1.91 | 1.95 | 1.99 | 2.03 | 2.07 | 2.11 | 2.15 |
| 12 | 1.74 | 1.78 | 1.82 | 1.86 | 1.90 | 1.94 | 1.97 | 2.01 | 2.05 | 2.09 | 2.13 |

CALIFORNIA IMPACT COMPACTION APPARATUS



Fabrication Drawings available at:

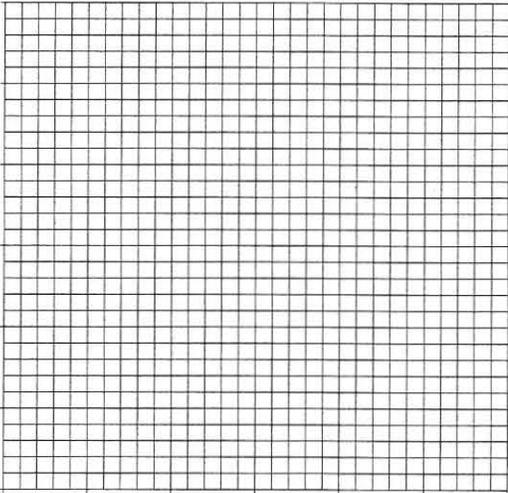
Transportation Laboratory
5900 Folsom Blvd
Sacramento, CA 95819
916-227-7000

ATTACHMENT 1

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

RELATIVE COMPACTION TEST

TL-297 (REV 10/2005)

| Job Stamp | | Location | | Test No. | | | | | | | | | | | | | | | | | | | | | |
|---|--|----------------|---|---|--|---|----------|----------|----------|----------------------|------------|-----------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|
| | | Material | | From | | | | | | | | | | | | | | | | | | | | | |
| | | Impact by | | Sand Vol. By | | | | | | | | | | | | | | | | | | | | | |
| | | Date | | Date | | | | | | | | | | | | | | | | | | | | | |
| SAND VOLUME DATA | | | Remarks: | | | | | | | | | | | | | | | | | | | | | | |
| A | Initial Wt. of Sand (g) | | | | | | | | | | | | | | | | | | | | | | | | |
| B | Wt. of Residue (g) | | | | | | | | | | | | | | | | | | | | | | | | |
| C | Wt. of Sand Used (A-B) | | | | | | | | | | | | | | | | | | | | | | | | |
| D | Cone Correction (g) | | IMPACT TEST DATA | | | | | | | | | | | | | | | | | | | | | | |
| E | Wt. of Sand in Hole (C-D) | | I | Initial Wet Weight of Test Specimen (g) | | | | | | | | | | | | | | | | | | | | | |
| F | Sand Density (g/cc) | | | Increment | | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | |
| G | Volume of Hole (E/F) | | | Water Adjustment (g) | | | | | | | | | | | | | | | | | | | | | |
| H | Wet Density (g/cc) (L/G) | | J | Tamper Reading | | | | | | | | | | | | | | | | | | | | | |
| | | | K | Adjusted Wet Density (g/cc) | | | | | | | | | | | | | | | | | | | | | |
| ROCK CORRECTION | | | <div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">Adjusted Wet Density (g/cc)</div>  </div> | | | | | | | | | | | | | | | | | | | | | | |
| L | Total Sample Weight (g) | | | | | | | | | | | | | | | | | | | | | | | | |
| M | + 3/4-inch Weight in Air (g) | | | | | | | | | | | | | | | | | | | | | | | | |
| N | +3/4-inch Weight in Water (g) | | | | | | | | | | | | | | | | | | | | | | | | |
| O | +3/4-inch Volume (M - N) | | | | | | | | | | | | | | | | | | | | | | | | |
| P | % +3/4-inch 100 * (M / L) | | | | | | | | | | | | | | | | | | | | | | | | |
| Q | % -3/4-inch 100 - P | | | | | | | | | | | | | | | | | | | | | | | | |
| R | Density of +3/4-inch (M / O) | | | | | | | | | | | | | | | | | | | | | | | | |
| S | (%+3/4-inch) / Density of +3/4-inch (P / RY) | | | | | | | | | | | | | | | | | | | | | | | | |
| T | (%-3/4-inch) / Density of -3/4-inch (Q / K) | | | | | | | | | | | | | | | | | | | | | | | | |
| U | Sum of S and T (S + T) | | | | | | | | | | | | | | | | | | | | | | | | |
| V | Average Adjusted Wet Density (100 / U) | | | | | | | | | | | | | | | | | | | | | | | | |
| Percent Relative Compaction* | Spec | Failed or less | | | | | | | | | | | | | | | | | | | | | | | |
| | | Passed | | | | | | | | | | | | | | | | | | | | | | | |
| *(H / K) for 10% or less +3/4-inch; (H / V) for > 10% +3/4-inch | | | | | | | | | | Water Adjustment (g) | | | | | | | | | | | | | | | |
| MOISTURE ADJUSTMENT FOR AGGREGATE BASE PAY QUANTITY | | | | | + 3/4-inch Aggregate Adjustment (Y) | | | | | | | | | | | | | | | | | | | | |
| a | In-place Wet wt. | | e | Test Spec. Wet Wt. (opt.) | | <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">% + 3/4-inch (P)</th> <th style="text-align: left;">Adjustment</th> </tr> </thead> <tbody> <tr><td>20 or less.....</td><td>1.00</td></tr> <tr><td>21-25.....</td><td>0.99</td></tr> <tr><td>26-30.....</td><td>0.98</td></tr> <tr><td>31-35.....</td><td>0.97</td></tr> <tr><td>36-40.....</td><td>0.96</td></tr> <tr><td>41-45.....</td><td>0.95</td></tr> <tr><td>46-50.....</td><td>0.94</td></tr> </tbody> </table> | | | | % + 3/4-inch (P) | Adjustment | 20 or less..... | 1.00 | 21-25..... | 0.99 | 26-30..... | 0.98 | 31-35..... | 0.97 | 36-40..... | 0.96 | 41-45..... | 0.95 | 46-50..... | 0.94 |
| % + 3/4-inch (P) | Adjustment | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 or less..... | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | |
| 21-25..... | 0.99 | | | | | | | | | | | | | | | | | | | | | | | | |
| 26-30..... | 0.98 | | | | | | | | | | | | | | | | | | | | | | | | |
| 31-35..... | 0.97 | | | | | | | | | | | | | | | | | | | | | | | | |
| 36-40..... | 0.96 | | | | | | | | | | | | | | | | | | | | | | | | |
| 41-45..... | 0.95 | | | | | | | | | | | | | | | | | | | | | | | | |
| 46-50..... | 0.94 | | | | | | | | | | | | | | | | | | | | | | | | |
| b | In-place Dry wt. | | f | Test Spec. Dry Wt. | | | | | | | | | | | | | | | | | | | | | |
| c | In-place Water (a - b) | | g | Test Spec. Water (e - f) | | | | | | | | | | | | | | | | | | | | | |
| d | In-place % Water (c / b) | | h | Test Spec. % Water (g / f) | | | | | | | | | | | | | | | | | | | | | |
| Moisture Corr. (h + 1%) - d = | | | | | | | | | | | | | | | | | | | | | | | | | |
| Moisture Corr. in excess of Opt. + 1% | | | % Moisture by CTM 226 | | | | | | | | | | | | | | | | | | | | | | |

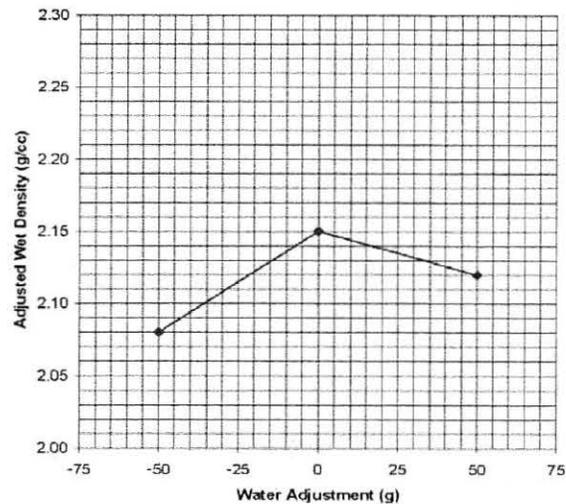
ATTACHMENT 2

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
RELATIVE COMPACTION TEST
TL-297 (REV 10/2005)

| | | |
|-----------|-----------|--------------|
| Job Stamp | Location | Test No. |
| | Material | From |
| | Impact by | Sand Vol. By |
| | Date | Date |

| | | | | | | | | |
|-------------------------|---------------------------|-------|-------------------------|---|------|------|------|---|
| SAND VOLUME DATA | | | Remarks: | | | | | |
| A | Initial Wt. of Sand (g) | 11250 | | | | | | |
| B | Wt. of Residue (g) | 1429 | | | | | | |
| C | Wt. of Sand Used (A-B) | 9821 | | | | | | |
| D | Cone Correction (g) | 1641 | IMPACT TEST DATA | | | | | |
| E | Wt. of Sand in Hole (C-D) | 8180 | I | Initial Wet Weight of Test Specimen (g) | 2500 | | | |
| F | Sand Density (g/cc) | 1.55 | | Increment | 1 | 2 | 3 | 4 |
| G | Volume of Hole (cc) (E/F) | 5277 | | Water Adjustment (g) | -50 | 0 | 50 | |
| H | Wet Density (g/cc) (L/G) | 2.06 | J | Tamper Reading | 11.4 | 11.0 | 11.2 | |
| | | | K | Adjusted Wet Density (g/cc) | 2.08 | 2.15 | 2.12 | |

| | | | |
|---|-------------------------------------|---------------|------------|
| ROCK CORRECTION | | | |
| L | Total Sample Weight | (g) | 10865 |
| M | +3/4-inch Weight in Air | (g) | 3568 |
| N | +3/4-inch Weight in Water | (g) | 2322 |
| O | +3/4-inch Volume | (M - N) | 1246 |
| P | % +3/4-inch | 100 * (M / L) | 32.8 |
| Q | % -3/4-inch | 100 - P | 67.2 |
| R | Density of +3/4-inch | (M / O) | 2.86 |
| S | (%+3/4-inch) / Density of +3/4-inch | (P / R) | 11.8 |
| T | (%-3/4-inch) / Density of -3/4-inch | (Q / K) | 31.3 |
| U | Sum of S and T | (S + T) | 43.1 |
| V | Average Adjusted Wet Density | (100 / U) | 2.32 |
| Percent Relative Compaction* | Spec | Failed | 89 or less |
| | | Passed | |
| *(H / K) for 10% or less +3/4-inch; (H / V) for > 10% +3/4-inch | | | |



| | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|---|----------------------------|--|------------------|------------|-----------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|------------|------|
| MOISTURE ADJUSTMENT FOR AGGREGATE BASE PAY QUANTITY | | | | + 3/4-inch Aggregate Adjustment (Y) | | | | | | | | | | | | | | | | |
| a | In-place Wet wt. | e | Test Spec. Wet Wt. (opt) | <table border="0"> <tr> <td>% + 3/4-inch (P)</td> <td>Adjustment</td> </tr> <tr> <td>20 or less.....</td> <td>1.00</td> </tr> <tr> <td>21-25.....</td> <td>0.99</td> </tr> <tr> <td>26-30.....</td> <td>0.98</td> </tr> <tr> <td>31-35.....</td> <td>0.97</td> </tr> <tr> <td>36-40.....</td> <td>0.96</td> </tr> <tr> <td>41-45.....</td> <td>0.95</td> </tr> <tr> <td>46-50.....</td> <td>0.94</td> </tr> </table> | % + 3/4-inch (P) | Adjustment | 20 or less..... | 1.00 | 21-25..... | 0.99 | 26-30..... | 0.98 | 31-35..... | 0.97 | 36-40..... | 0.96 | 41-45..... | 0.95 | 46-50..... | 0.94 |
| % + 3/4-inch (P) | Adjustment | | | | | | | | | | | | | | | | | | | |
| 20 or less..... | 1.00 | | | | | | | | | | | | | | | | | | | |
| 21-25..... | 0.99 | | | | | | | | | | | | | | | | | | | |
| 26-30..... | 0.98 | | | | | | | | | | | | | | | | | | | |
| 31-35..... | 0.97 | | | | | | | | | | | | | | | | | | | |
| 36-40..... | 0.96 | | | | | | | | | | | | | | | | | | | |
| 41-45..... | 0.95 | | | | | | | | | | | | | | | | | | | |
| 46-50..... | 0.94 | | | | | | | | | | | | | | | | | | | |
| b | In-place Dry wt. | f | Test Spec. Dry Wt. | | | | | | | | | | | | | | | | | |
| c | In-place Water (a - b) | g | Test Spec. Water (e - f) | | | | | | | | | | | | | | | | | |
| d | In-place % Water (c / b) | h | Test Spec. % Water (g / f) | | | | | | | | | | | | | | | | | |
| Moisture Corr. (h + 1%) - d = | | | | | | | | | | | | | | | | | | | | |
| Moisture Corr. in excess of Opt. + 1% | | | % Moisture by CTM 226 | | | | | | | | | | | | | | | | | |

ATTACHMENT 3

DEPARTMENT OF TRANSPORTATION
ENGINEERING SERVICE CENTER
 Office of Materials Engineering and Testing Services
 5900 Folsom Blvd.
 Sacramento, California 95819-4612



METHOD OF TEST FOR RELATIVE COMPACTION OF UNTREATED AND TREATED SOILS AND AGGREGATES BY THE AREA CONCEPT UTILIZING NUCLEAR GAGES

CAUTION: Prior to handling test materials, performing equipment setups, and/or conducting this method, testers are required to read "**SAFETY AND HEALTH**" in Part III of this method. It is the responsibility of whoever uses this method to consult and use departmental safety and health practices and determine the applicability of regulatory limitations before any testing is performed.

OVERVIEW

This test method provides a procedure for selecting a test area, for determining the in-place wet density and moisture of untreated and treated soils and aggregates by the use of a nuclear gage, and for determining relative compaction. Wet density measurements are made in the direct transmission position where the rod is placed into the ground.

Select a direct transmission depth as close as possible to, but not equal to or greater than, the thickness of material being tested, i.e., use a 75 mm direct transmission depth and corresponding calibration to test a layer of material 100 mm thick, and use a 125 mm direct transmission depth and corresponding calibration to test a layer of material 150 mm thick.

The laboratory wet test maximum density shall be determined as specified in California Test 312 for Class A Cement Treated Base; and as specified in California Test 216 for untreated materials, Class B cement treated base and lime treated soils and aggregates. On the basis of specified acceptance criteria, the relative compaction values are then used to determine the compliance or noncompliance of compaction specifications within the designated area. All calculations are based on wet relationships and are made in the metric system.

NOTE: See California Test 121 of the Manual of Test, Administrative Instructions, regarding use of nuclear gages.

This test method (231) is divided into the following parts:

- I. Method of field determination of in-place wet density and moisture.
- II. Method of applying the area concept and determining percent relative compaction.
- III. Safety and Health

PART I. METHOD OF FIELD DETERMINATION OF IN-PLACE WET DENSITY AND MOISTURE

A. APPARATUS

1. Nuclear gage and standardizing block.
2. Miscellaneous tools such as trowels, scrapers, sieve, etc. for site preparation.
3. Guide plate, approximately 300 x 460 x 6 mm.
4. Pin, approximately 20 mm diameter x 600 mm long.

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B. STANDARDIZATION OF NUCLEAR GAGE FOR WET DENSITY AND MOISTURE

1. Set the standardizing block 1.5 m from any object and 8 m from any other nuclear gage. Place the gage on the standardizing block in the closed (safe) position and take four (4) 1-min density counts. Repeat the four 1-min counts for moisture in the safe position. Record on Form TL 2148 (Figure 1) and in the gage logbook. When the nuclear gage is equipped with electronic circuitry capable of automatically averaging four one-minute density and moisture standard counts simultaneously, place the gage on the standardizing block in the closed (safe) position and take the average of the four one-minute counts. Record the density and moisture standard count averages on Form TL 2148 and in the gage logbook. For additional gage operation information not covered in this paragraph, follow instructions given in the manufacturer's manual.
2. The average of the four one-minute counts determined in C.1 is to be within \pm ADL (see note) of the value used to establish the calibration table.

If it is not, contact the Radiation Safety Officer who will establish a new standard count or have the gage sent in to be checked and/or repaired. Perform the standard count *at least* once during every 8 h of operation.

NOTE: The acceptable deviation limit (ADL) is defined in this test method as $ADL = \sqrt{n}$ where n = number of counts indicated on the gage. This relationship is valid when the number of counts is over 10,000. Table 1 shows values of ADL for various counts.

C. SITE PREPARATION

1. Remove all loose surface material and prepare a plane surface large enough to seat the gage. Where sheepfoot and similar type tamping rollers have been used, remove the loose surface material to a depth of not less than 50 mm below the deepest penetration by the roller. After the surface has been prepared to a flatness and smoothness within 3 mm, use a No. 4 (4.7 mm) or smaller sieve to obtain native fines to fill minor depressions, protrusions or to correct slight

lack of plane. Tamp fines and any loosened material with the guide plate.

2. Make a hole using the pin and guide plate. Extract the pin with a pin puller. A drill may be used in lieu of the pin. The depth of hole shall be 50 mm greater than the transmission depth being used. This hole must be as close as possible to 90 degrees from the plane surface. If the plate is rotated slightly around the pin and the plate does not make contact with the ground, or if it appears that the hole is crooked, make a new hole.

D. FIELD TEST FOR DENSITY DETERMINATION

1. Place the nuclear gage on the prepared surface so that the bottom of the gage is firmly seated in contact with the soil. Insert the rod into the hole to the predetermined depth. Adjust the gage so that the rod is firmly against the side of the hole that is nearest to the gage.

Obtain a 1-min reading. Record the data as shown on Figure 1.

2. Average counts from all test sites and determine count ratio by dividing the average field count by the average standard count.
3. Find the average count ratio and corresponding direct transmission average wet density (kg/m³) on the table supplied with the gage (Example Table 2). Record the data on Figure 1.

NOTE: No obstruction or foreign element should be within a distance of 200 mm on both sides of the *source-detector axis*. Density calibration tables for the various depths are determined in accordance with California Test 111.

E. FIELD TEST FOR MOISTURE

This test is used for cases where moistures are desired or when common composite test maximum densities are used (Part II, F).

1. Obtain a standard count for moisture as specified in Section C of this Part I.
2. For site preparation, use procedure in Section D.1 of this Part I.

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3. Place the gage on the prepared surface and take a 1-min moisture count. Record the data on Figure 1.
4. Determine a count ratio by dividing the field count by the moisture standard count.
5. Find the count ratio and corresponding moisture (kg/m³) from the table supplied with the gage (Example Table 3)

NOTE: No obstruction or foreign element should be within a distance of 250 mm *from the side of the gage*. Moisture calibration tables are determined in accordance with California Test 111.

PART II. METHOD OF APPLYING THE AREA CONCEPT AND DETERMINING PERCENT RELATIVE COMPACTION

A. SCOPE

This is a statistical procedure where a number of test measurements are taken to evaluate the state of compaction of a selected area.

B. NUMBER AND LOCATION OF NUCLEAR TESTS

1. The area concept will be used with this test. The engineer will determine from a series of density tests whether to accept or reject a designated area. The engineer shall determine the area by inspection, based on uniformity of factors affecting compaction. Insofar as possible, the area designated shall be generally homogeneous for both character of material and conditions of production and compaction. Portions of the area, which may be observed or suspected to be different from the area as a whole, will be excluded from the test. If a relative compaction test is desired for these different portions, they shall be designated as a separate test area or areas and tested separately. Do not designate test areas which include: (1) materials from separate sources, unless such materials were intermixed during placing of the compacted area; (2) materials which were placed and compacted by different types of operations or processes; or (3) material placed during different periods of production or in nonadjacent areas.

2. Select a *minimum* of 5 test sites for areas 800 m² or more by using a set of 10 random sample plans (Figure 3). Follow instructions given in Figure 3.

Obtain nuclear counts at all test sites and average all counts for the area (Figure 1). If the designated test area, described in B.1, is of limited size (e.g., structure backfill, short length of shoulders, or other areas less than 800 m²) then a *minimum* of three test sites are required.

C. DETERMINATION OF WET TEST MAXIMUM DENSITY

1. For all treated and untreated soils and aggregates, except Class A Cement Treated Bases, obtain equal representative portions of material from each nuclear test site within the area and thoroughly mix together to form a composite sample. Determine the laboratory wet test maximum density (kg/m³) on the composite sample in accordance with California Test 216. Record the data on Form TL 2148 in the section identified as "IMPACT TEST DATA" (Figure 1). *The moisture content of the composite sample must be maintained in the same state as when the in-place tests were performed.* If the impact test result is to be used in a "common" composite control density, a nuclear moisture, as well as a nuclear density must be taken for each test site in an area and be averaged.

D. CORRECTION FOR OVERSIZE MATERIAL

1. A correction is applied to the composite wet test maximum density in those instances where the composite sample contains more than 10% by weight of aggregate retained on the 19 mm sieve. The data is recorded on Figure 2 in the section titled "SAMPLE FOR ROCK CORRECTION". California Test 216 shows details for handling rock corrections.

E. PERCENT RELATIVE COMPACTION

1. Calculate percent relative compaction as follows:

$$\text{Percent relative compaction} = \left[\frac{\text{(Average In-Place Wet Density)}}{\text{(Composite Wet Test Maximum Density)}} \right] \times 100$$

2. The calculations for cases where there is 10% or less of +19 mm aggregate is shown on

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Figure 1. Note that gage readings for the individual sites are averaged and a mean percent relative compaction calculated for the area.

3. The calculations for cases where there is more than 10% of + 19 mm aggregate is shown in Figure 1.
4. The average relative compaction of the test sites in an area must be at or above the specified minimum compaction density for acceptance of the compaction in the area. The percent relative compaction value is calculated to the nearest 0.1% and then reported as a whole number. For rounding the average percent relative compaction value (Test Result), if the computed value ends in a number with a fractional portion 0.5 or greater, report as the next higher whole number. If the computed value ends in a number with fractional portion less than 0.5, report without changing the whole number.

Example:

| Computed Value | Reporting Value |
|----------------|-----------------|
| 94.5 to 95.0% | 95% |
| 95.0 to 95.4% | |

F. WET COMMON-COMPOSITE TEST MAXIMUM VALUE

1. In many cases where the material is the "same", it is permissible to use a "common" wet composite test maximum density for use in different areas in lieu of that specified in Section C.1 of this Part II. For a material to be the same, it must comply with the following general criteria:
 - a. It must be from the same general source (excavation area, balance point, plant, etc.).
 - b. It must generally have the same visual characteristics of color, gradation, and type of soil.
 - c. The average in-place moistures must be the "same". Adjustments in moisture are to be made to meet this criteria when "common" wet composite test maximum values are used.

2. A "common" wet composite test maximum density is initially established by averaging two consecutive wet composite test maximum densities which are within 50 kg/m³ density and performed within three days. The average moistures between the areas represented by the two consecutive wet composite test maximum values must also be within 50 kg/m³.
3. Anytime that a wet composite test maximum density is determined for an area, it shall be used to calculate the percent relative compaction for that area.
4. A "check" wet composite test maximum must be performed at *least* every 7th calendar day or after the "common" wet composite test maximum density has been used for 14 areas, whichever comes first.
 - a. If the "check" test is within 50 kg/m³ moisture and density of the "common" density, the two values are averaged to establish a new "common" density and average moisture. If it is not, wet composite test maximum densities must be performed for each compaction test area until the criteria for F-2 of this PART II are met.
5. If average relative moistures between areas differ and a common composite test maximum is to be established, a correction is applied. The following example illustrates use of a common composite test maximum with moisture corrections. Anytime the engineer judges conditions have changed, a new common composite test maximum should be established. An example where a common composite test maximum is used is shown in Figure 2.

PART III. SAFETY AND HEALTH

Personnel are required to be trained by a qualified instructor approved by the California Department of Health and the Divisions of Industrial Safety.

Caltrans personnel are required to read and be familiar with California Test 121, Administrative Instructions for Use of Nuclear Gages. Caltrans personnel are required to wear a film badge.

This method does not purport to address all the safety problems associated with its use.

REFERENCES:

California Tests 121, 216, 312, and 911

End of Text (14 Pages) on California Test 231

**California Test 231
March 2000**

| Example: | Area I | Area II | Area III | Area IV | Area V | Area VI |
|---|---------|---------|----------|---------|---------|---------|
| Date..... | 4-18-96 | 4-19-96 | 4-20-96 | 4-21-96 | 4-25-96 | 4-26-96 |
| Average In-Place Wet Density, kg/m ³ | 2040 | 2150 | 2060 | 2080 | 2120 | 2110 |
| Average In-Place Moisture, kg/m ³ | 90 | 110 | 140 | 80 | 130 | 100 |
| Wet Composite Test Maximum Density, kg/m ³ | 2150 | 2200 | - | - | 2160 | - |
| Common Composite Wet Test Maximum Density, kg/m ³ | - | - | 2175 | 2175 | - | 2168 |
| (Average Moisture, kg/m ³) | - | - | (100) | (100) | - | (115) |
| Moisture Correction, kg/m ³ | - | - | -40 | +20 | - | +15 |

a. Area I

$$\% \text{ Relative Compaction} = \frac{2040}{2150} \times 100 = 95\%$$

b. Area II

$$\% \text{ Relative Compaction} = \frac{2150}{2200} \times 100 = 98\%$$

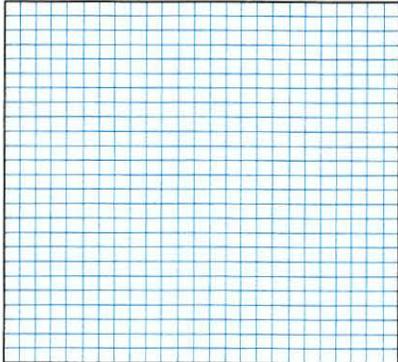
c. Area III

$$\text{Moisture Correction} = \left(\frac{90 + 110}{2} \right) - 140 = -40$$

$$\text{Common Composite Test Max} = \frac{2150 + 2200}{2} = 2175$$

$$\% \text{ Relative Compaction} = \frac{2060 - 40}{2175} \times 100 = 93\%$$

See sample forms figures 1 and 2.

| | | | | | | | | | | |
|---|---|---|-------------|--------------------|-------------------------|---|----------------------------|-----|---|---|
| State of California | | Relative Compaction Test-Nuclear | | | | Dept of Transportation | | | | |
| Job Stamp | | Contract | | | | Test No. | | | | |
| | | Type of Material | | | | | | | | |
| | | Material From | | | | | | | | |
| | | Impact By | | | | Nuclear By | | | | |
| | | Date | | | | Date | | | | |
| Show Test Location and Area Limits | | Nonbiased Plan No. | | | | Gage No. | | | | |
| | | | | | | | | | | |
| In-Place Test by Nuclear | | | | | Impact Test Data | | | | | |
| A | Site | Den. Ct. | mm | Std. Ct. Density | J | Initial Wet Weight of Test Specimen (g) | | | | |
| | 1 | | | | | Specimen | 1 | 2 | 3 | 4 |
| | | | | | | Water Adjustment | | | | |
| | 2 | | | | | Tamper Reading | | | | |
| | | | | | | K Wet Density | | | | |
| | 3 | | | | | K From Table 1 Test Method 216. Highest Density is Test Max. | | | | |
| | | | | | | L (+) 19mm Agg. Adj. | Sample for Rock Correction | | | |
| | 4 | | | F \bar{x} | | % + 19mm (Q) Adj. | M Total Sample Wt. | (g) | | |
| | | | | Moist Count | | 20 or less_ 1.00 | N + 19mm Wt. in Air | (g) | | |
| | 5 | | | 1 | | 21-25_ 0.99 | O + 19mm Wt. In Water | (g) | | |
| | | | 2 | | 26-30_ 0.98 | P + 19mm Vol | (N-O) | | | |
| 6 | | | 3 | | 31-35_ 0.97 | Q % + 19mm | 100(N/M) | | | |
| | | | 4 | | 36-40_ 0.96 | R % - 19mm | (100-Q) | | | |
| 7 | | | 5 | | 41-45_ 0.95 | S Density of + 19mm | (N/P) | | | |
| | | | 6 | | 46-50_ 0.94 | T % + 19mm /Den. Of + 19mm | (Q/SL) | | | |
| 8 | | | 7 | | Std. Count Moist | U % -19mm /Den. Of - 19mm | (R/K) | | | |
| | | | 8 | | | V Sum of T and U | (T+U) | | | |
| B | Σ | | | | | W Adjusted Density | (100/V) | | | |
| C | \bar{x} | | | G \bar{x} | | <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: small; margin-right: 5px;">Density (g/ml)</div>  </div> | | | | |
| CR(C/F) | | CR(G/I) | | | | | | | | |
| D | \bar{x} Den. g/ml | | H | \bar{x} H2O g/ml | Σ | | | | | |
| E | \bar{x} Den. Corr. For Moist.** \pm | | I | \bar{x} | | | | | | |
| **E = D + Diff. Bet. \bar{x} Moist.Fr. Common TM & H | | | | | | | | | | |
| Percent Relative Compaction | | Spec. | Individual | | | | | | | |
| | | | Moving Ave. | | | | | | | |
| *E/K for 10% \leq + 19mm | | E/W for > 10% + 19mm | | | | | | | | |
| If Common Test Maximum is used (\bar{x}) K or W = \bar{x} H2O = | | | | | | | | | | |
| From Tests: | | Dated: | | | | | | | | |
| Remarks: | | | | | | | | | | |

TL 2148 (Rev 03/00)

Figure 1

California Test 231
March 2000

| | | | | | |
|---|----------------------------------|---|-------------------------|--|-----------------------|
| State of California | | Relative Compaction Test-Nuclear | | Dept of Transportation | |
| Job Stamp | | Contract | | Test No. <u>25</u> | |
| | | Type of Material <u>EMB</u> | | | |
| | | Material From | | | |
| | | Impact By <u>FC</u> | | Nuclear By <u>BL</u> | |
| | | Date <u>03/30/00</u> | | Date <u>03/30/00</u> | |
| Show Test Location and Area Limits | | Nonbiased Plan No. <u>8</u> | | Gage No. <u>NE 59</u> | |
| | | | | | |
| In-Place Test by Nuclear | | | Impact Test Data | | |
| Site | Den. Ct. <u>200mm</u> | Std. Ct. Density | J | Initial Wet Weight of Test Specimen (g) <u>2700</u> | |
| 1 | <u>46658</u> | <u>51547</u> | | Specimen | 1 2 3 4 |
| | | <u>51522</u> | | Water Adjustment | <u>0 +50 +100</u> |
| 2 | <u>44598</u> | <u>51904</u> | | Tamper Reading | <u>10.5 10.3 10.4</u> |
| | | <u>51267</u> | K | Wet Density | <u>2.44 2.48 2.46</u> |
| 3 | <u>49747</u> | | | K From Table 1 Test Method 216. Highest Density is Test Max. | |
| | | <u>Σ 206240</u> | L | Sample for Rock Correction | |
| 4 | <u>46453</u> | <u>51560</u> | | M Total Sample Wt. | (g) <u>14000</u> |
| | | Moist Count | | N + 19mm Wt. in Air | (g) <u>2380</u> |
| | | | | O + 19mm Wt. In Water | (g) <u>1465</u> |
| 5 | <u>47741</u> | 1 | | P + 19mm Vol | (N-O) <u>915</u> |
| | | 2 | | Q % + 19mm | 100(N/M) <u>17.0</u> |
| 6 | <u>46380</u> | 3 | | R % - 19mm | (100-Q) <u>83.0</u> |
| | | 4 | | S Density of + 19mm | (N/P) <u>2.60</u> |
| 7 | | 5 | | T % + 19mm / Den. Of + 19mm | (Q/SL) <u>6.5</u> |
| | | 6 | | U % - 19mm / Den. Of - 19mm | (R/K) <u>33.5</u> |
| 8 | | 7 | | V Sum of T and U | (T+U) <u>40.0</u> |
| | | 8 | | W Adjusted Density | (100/V) <u>2.50</u> |
| B | <u>Σ 281577</u> | | | | |
| C | <u>Σ 46930</u> | G | | | |
| CR(C/F) | <u>910</u> | CR(G/I) | | | |
| D | <u>Σ Den. g/ml 2.23</u> | H | <u>Σ H2O g/ml</u> | | |
| E | <u>Σ Den. Corr. For Moist. ±</u> | I | <u>Σ</u> | | |
| **E = D ± Diff. Bet. <u>Σ</u> Moist. Fr. Common TM & H | | | | | |
| Percent Relative Compaction | <u>89</u> | Spec. | Individual | <u>90</u> | |
| | | | Moving Ave. | | |
| *E/K for 10% ≤ + 19mm EW for > 10% + 19mm | | | | | |
| If Common Test Maximum is used (<u>Σ</u>) K or W = <u>Σ</u> H2O = | | | | | |
| From Tests: | | Dated: | | | |
| Remarks: | | | | | |

| | | | | | | | | | | | |
|--|----------------|------|------|--|---|-----|------|--|----------------|--|--|
| <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Density (g/ml)</td> <td style="width: 50%; text-align: center;">2.50</td> </tr> <tr> <td style="text-align: center;">2.40</td> <td></td> </tr> <tr> <td style="text-align: center;">0</td> <td style="text-align: center;">+50</td> </tr> <tr> <td style="text-align: center;">+100</td> <td></td> </tr> <tr> <td style="text-align: center;">Water Adj. (g)</td> <td></td> </tr> </table> | Density (g/ml) | 2.50 | 2.40 | | 0 | +50 | +100 | | Water Adj. (g) | | |
| Density (g/ml) | 2.50 | | | | | | | | | | |
| 2.40 | | | | | | | | | | | |
| 0 | +50 | | | | | | | | | | |
| +100 | | | | | | | | | | | |
| Water Adj. (g) | | | | | | | | | | | |

Figure 2

California Test 231
March 2000

NONBIASED SAMPLE PLANS

Once an area is selected on the basis of uniformity of factors, nonbiased location of measurement sites is required for applying statistical control procedures. The nonbiased sample location plans will randomly locate the approximate measurement sites.

NOTE: The number of measurement sites must be determined after the area has been determined and *before* any tests performed.

PROCEDURE FOR USE OF NONBIASED SAMPLE PLANS

- 1 a. Use the last digit from the first reading taken for the daily standard count to select the plan for the first area. For subsequent areas, use the last digit from the second, third, and fourth readings. If five through nine areas are tested, use the second to the last digit from the first through the fourth readings taken for the daily standard count.
- b. For nuclear gages that electronically

average the standard counts — Take a $\frac{1}{4}$ minute count in the safe position at any convenient location, i.e., ground, truck bed, carry case, etc., prior to selecting the plan for an area. Use the last digit of the density reading for selecting the plan. A new count should be taken for each area.

2. Visualize the plan as a map of the area to be sampled.
3. Each dot represents a measurement site. There are ten dots numbered from one (1) through ten (10). If you are to take a five- (5) site test, then use the dots numbered from one (1) through five (5). If a three-site test is going to be used, then use the locations of the first three dots. This procedure will be used for all tests, with Number 1 dot the first site, Number 2 dot the second site and so on until the desired number of sites have been used.
4. Test at the approximate locations on the grade represented by the dots on the plan. Some adjustments are necessary for irregular areas. (See Figure 3)

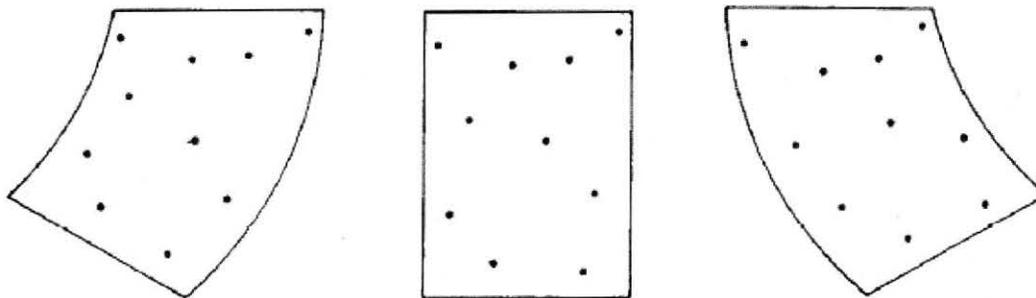
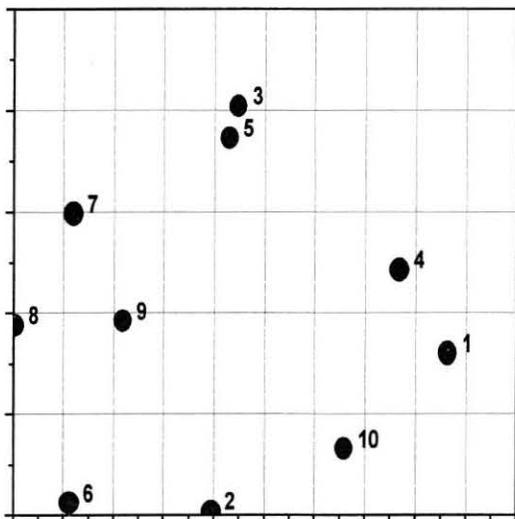


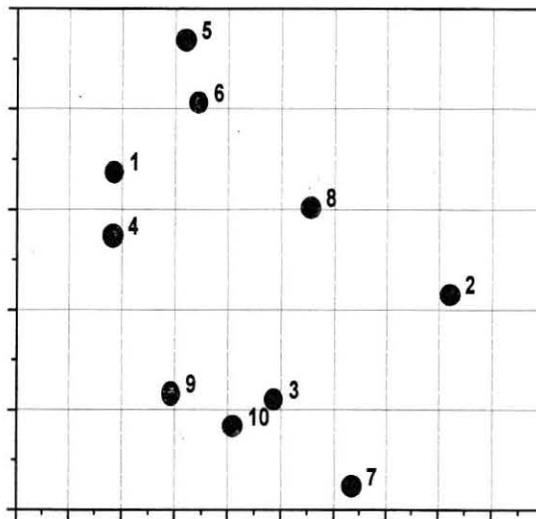
Figure 3

Figure 3 Cont.

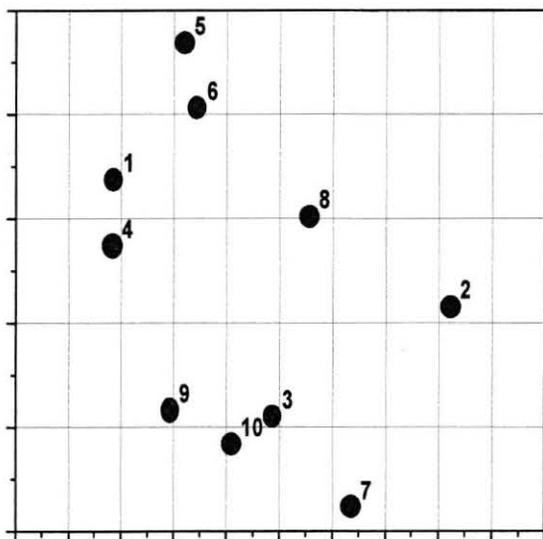
NONBIASED PLAN 1



NONBIASED PLAN 2



NONBIASED PLAN #3



NONBIASED PLAN #4

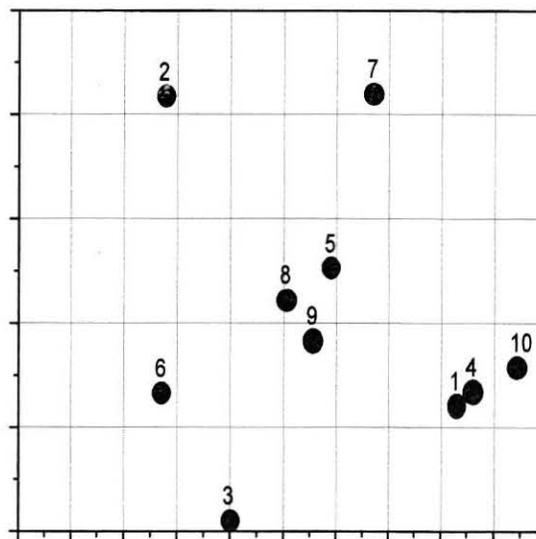
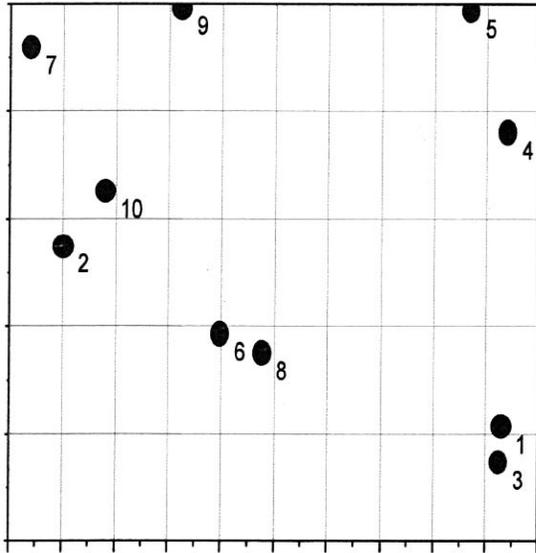
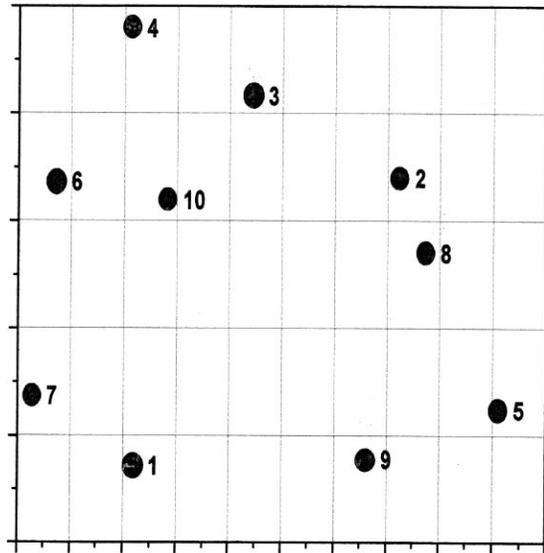


Figure 3 Cont.

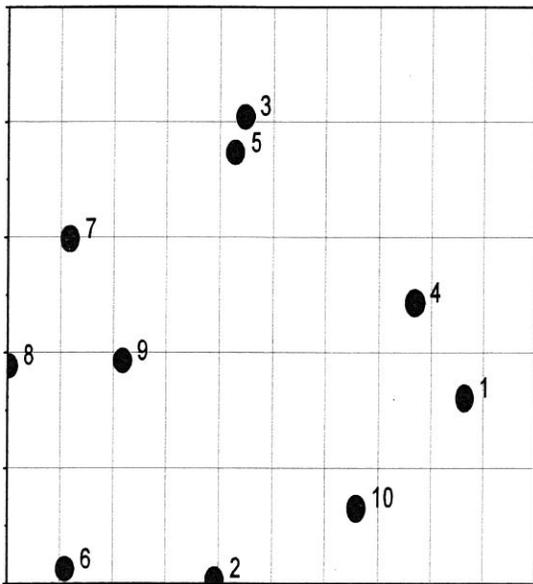
NONBIASED PLAN 5



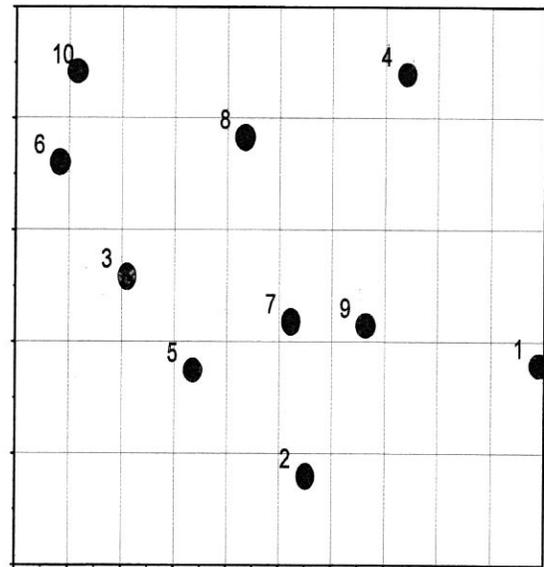
NONBIASED PLAN 6



NONBIASED PLAN #7



NONBIASED PLAN #8



NONBIASED PLAN 9

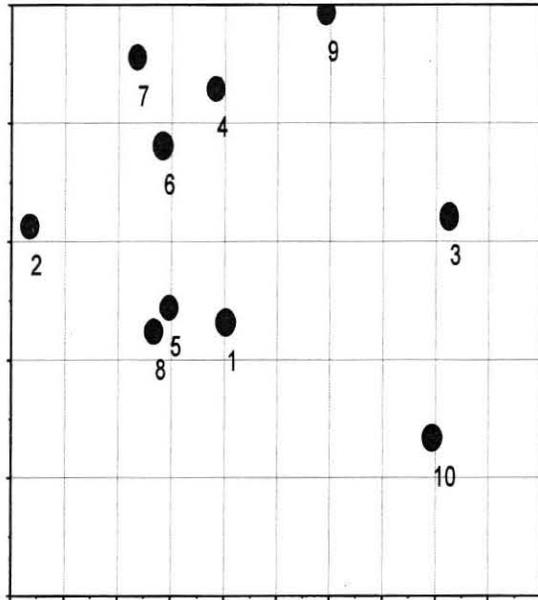
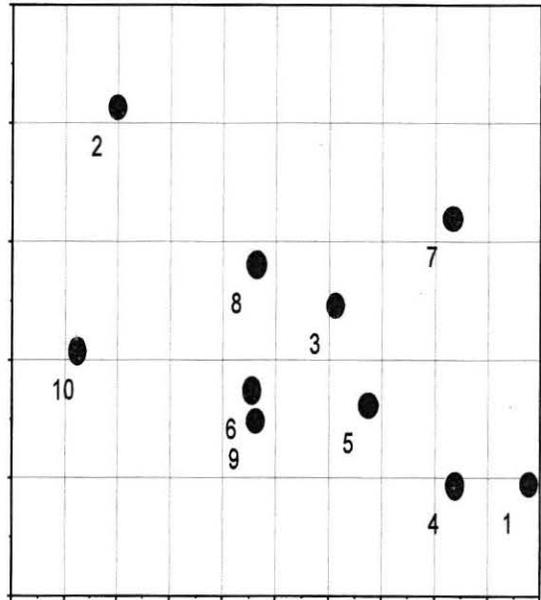


Figure 3 Cont.

NONBIASED PLAN 10



California Test 231
March 2000

TABLE 2
COUNT RATIO VS. DENSITY FOR NUCLEAR GAGE NO. NE 59

District 19 January 3, 1978 Std. Ct 51500 200 mm D/T By B. Lister
BASED ON: DENSITY (kg/m3) 1532 1636 2018 2153 2680 2771

COUNT RATIO 1.791 1.553 1.192 .933 .597 .542

| CR TO CR | kg/m3 | CR TO CR | kg/m3 | CR TO CR | kg/m3 |
|-------------|-------|-------------|-------|------------|-------|
| 2.000-2.018 | 1400 | 1.364-1.376 | 1800 | .931- .939 | 2200 |
| 1.981-1.999 | 1410 | 1.351-1.363 | 1810 | .922- .930 | 2210 |
| 1.962-1.980 | 1420 | 1.338-1.350 | 1820 | .913- .921 | 2220 |
| 1.943-1.961 | 1430 | 1.326-1.337 | 1830 | .905- .912 | 2230 |
| 1.925-1.942 | 1440 | 1.313-1.325 | 1840 | .896- .904 | 2240 |
| 1.907-1.924 | 1450 | 1.300-1.312 | 1850 | .887- .895 | 2250 |
| 1.888-1.906 | 1460 | 1.288-1.299 | 1860 | .879- .886 | 2260 |
| 1.870-1.887 | 1470 | 1.276-1.287 | 1870 | .874- .878 | 2270 |
| 1.853-1.869 | 1480 | 1.264-1.275 | 1880 | .862- .870 | 2280 |
| 1.835-1.852 | 1490 | 1.252-1.263 | 1890 | .854- .861 | 2290 |
| 1.817-1.834 | 1500 | 1.240-1.251 | 1900 | .846- .853 | 2300 |
| 1.800-1.816 | 1510 | 1.228-1.239 | 1910 | .838- .845 | 2310 |
| 1.783-1.799 | 1520 | 1.216-1.227 | 1920 | .830- .837 | 2320 |
| 1.766-1.782 | 1530 | 1.205-1.215 | 1930 | .822- .829 | 2330 |
| 1.749-1.765 | 1540 | 1.193-1.204 | 1940 | .814- .821 | 2340 |
| 1.733-1.748 | 1550 | 1.182-1.192 | 1950 | .807- .813 | 2350 |
| 1.716-1.732 | 1560 | 1.171-1.181 | 1960 | .799- .806 | 2360 |
| 1.700-1.715 | 1570 | 1.160-1.170 | 1970 | .791- .798 | 2370 |
| 1.684-1.699 | 1580 | 1.148-1.159 | 1980 | .784- .790 | 2380 |
| 1.667-1.683 | 1590 | 1.138-1.147 | 1990 | .776- .783 | 2390 |
| 1.652-1.666 | 1600 | 1.127-1.137 | 2000 | .769- .775 | 2400 |
| 1.636-1.651 | 1610 | 1.116-1.126 | 2010 | .762- .768 | 2410 |
| 1.620-1.635 | 1620 | 1.105-1.115 | 2020 | .755- .761 | 2420 |
| 1.605-1.619 | 1630 | 1.095-1.104 | 2030 | .747- .754 | 2430 |
| 1.590-1.604 | 1640 | 1.085-1.094 | 2040 | .740- .746 | 2440 |
| 1.574-1.589 | 1650 | 1.074-1.084 | 2050 | .733- .739 | 2450 |
| 1.560-1.573 | 1660 | 1.064-1.073 | 2060 | .726- .732 | 2460 |
| 1.545-1.559 | 1670 | 1.054-1.063 | 2070 | .719- .725 | 2470 |
| 1.530-1.544 | 1680 | 1.044-1.053 | 2080 | .713- .718 | 2480 |
| 1.515-1.529 | 1690 | 1.034-1.043 | 2090 | .706- .712 | 2490 |
| 1.501-1.514 | 1700 | 1.024-1.033 | 2100 | .699- .705 | 2500 |
| 1.487-1.500 | 1710 | 1.014-1.023 | 2110 | .692- .698 | 2510 |
| 1.473-1.486 | 1720 | 1.005-1.013 | 2120 | .686- .691 | 2520 |
| 1.458-1.472 | 1730 | .995-1.004 | 2130 | .679- .685 | 2530 |
| 1.445-1.457 | 1740 | .986- .994 | 2140 | .673- .678 | 2540 |
| 1.431-1.444 | 1750 | .976- .985 | 2150 | .667- .672 | 2550 |
| 1.417-1.430 | 1760 | .967- .975 | 2160 | .660- .666 | 2560 |
| 1.404-1.416 | 1770 | .958- .966 | 2170 | .654- .659 | 2570 |
| 1.390-1.403 | 1780 | .949- .957 | 2180 | .648- .653 | 2580 |
| 1.377-1.389 | 1790 | .940- .948 | 2190 | .642- .647 | 2590 |

California Test 231
March 2000

TABLE 3

COUNT RATIO VS DENSITY FOR NUCLEAR GAUGE NO. NE 59

District 19, January 3, 1978, Std. Ct 11400 By B. Lister

| BASED ON kg/m3 | | 0 | 303 | | |
|----------------|-------|------------|-------|-------------|-------|
| COUNT RATIO | | .168 | .686 | | |
| CR TO CR | kg/m3 | CR TO CR | kg/m3 | CR TO CR | kg/m3 |
| .155- .171 | 00 | .501- .517 | 200 | .847- .863 | 400 |
| .172- .188 | 10 | .518- .534 | 210 | .864- .880 | 410 |
| .189- .206 | 20 | .535- .552 | 220 | .881- .897 | 420 |
| .207- .223 | 30 | .553- .569 | 230 | .898- .915 | 430 |
| .224- .240 | 40 | .570- .586 | 240 | .916- .932 | 440 |
| .241- .258 | 50 | .587- .603 | 250 | .933- .949 | 450 |
| .259- .275 | 60 | .604- .621 | 260 | .950- .967 | 460 |
| .276- .292 | 70 | .622- .638 | 270 | .968- .984 | 470 |
| .293- .309 | 80 | .639- .655 | 280 | .985-1.001 | 480 |
| .310- .327 | 90 | .656- .673 | 290 | 1.002-1.018 | 490 |
| .328- .344 | 100 | .674- .690 | 300 | 1.019-1.036 | 500 |
| .345- .361 | 110 | .691- .707 | 310 | 1.037-1.053 | 510 |
| .362- .379 | 120 | .708- .724 | 320 | 1.054-1.070 | 520 |
| .380- .396 | 130 | .725- .742 | 330 | 1.071-1.088 | 530 |
| .397- .413 | 140 | .743- .759 | 340 | 1.089-1.105 | 540 |
| .414- .431 | 150 | .760- .776 | 350 | 1.106-1.122 | 550 |
| .432- .448 | 160 | .777- .794 | 360 | 1.123-1.140 | 560 |
| .449- .465 | 170 | .795- .811 | 370 | 1.141-1.157 | 570 |
| .466- .482 | 180 | .812- .828 | 380 | 1.158-1.174 | 580 |
| .483- .500 | 190 | .829- .846 | 390 | 1.175-1.191 | 590 |



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Flood Protection and Navigation Section (18767)

OCT 17 2012

Mr. Jay Punia, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Mr. Punia:

We have reviewed a permit application by Caltrans (application number 18767). This project includes replacing the Butte Creek Bridge (No. 12-0126R) on State Route 99 in Butte County with a new bridge constructed on the existing northbound alignment. The new, reinforced concrete box girder bridge would replace the existing bridge. The two-span structure would be supported by two abutments and one pier all on pile. The proposed work also includes mitigating measures for fish consisting of placing gravel augmentation upstream and downstream of the bridge and planting riparian vegetation (trees and shrubs) between River Mile 22 and River Mile 26. The project is located between Estates Drive and Southgate Avenue, about 1 mile south of the City of Chico, at 39.7386°N 121.8223°W NAD83, Butte County, California.

The District Engineer has no objection to approval of this application by your Board from a flood control standpoint, subject to the following conditions:

- a. That no work shall be performed and no stockpiles of material or equipment shall remain in the channel during the flood season of November 1 to April 15, unless otherwise approved in writing by your Board.
- b. That in the event trees and brush are cleared, they shall be properly disposed of outside the limits of the project right-of-way.
- c. That in the event erosion occurs at the site, the eroded areas shall be repaired and bank protection shall be placed to prevent future erosion.
- d. That the proposed work shall not change the channel flow in such a way that may cause damage to the existing embankment.
- e. That the proposed work shall not interfere with the integrity or hydraulic capacity of the flood risk reduction project; easement access; or maintenance, inspection, and flood fighting procedures.

-2-

f. That the drainage from the proposed bridge shall not be directed to flow water on the banks without adequate protection from erosion.

g. That the existing bridge shall be completely removed from the project right-of-way.

h. That the proposed rock slope protection shall be properly transitioned into the existing bank.

i. That the proposed plantings shall be maintained so that the project channel capacity is not impacted.

j. That the proposed placing of streambed enhancement gravel in the channel shall be done in a uniform manner which is free of depressions.

A Section 10 and/or Section 404 permit (SPK-2011-389) has been issued for this work.

A copy of this letter is being furnished to Mr. Don Rasmussen, Chief Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite LL30, Sacramento, CA, 95821.

Sincerely,



Rick L. Poeppelman, P.E.
Chief, Engineering Division

AERIALLY DEPOSITED LEAD AND TRAFFIC STRIPE PAINT SITE INVESTIGATION REPORT



**State Route 99 (03-BUT-99)
Post Mile 28.4 to 29.4
Butte County, California**

PREPARED FOR:

**CALIFORNIA DEPARTMENT OF TRANSPORTATION – DISTRICT 3
ENVIRONMENTAL ENGINEERING OFFICE
P.O. BOX 911
MARYSVILLE, CALIFORNIA 95901**



PREPARED BY:

**GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742**



**GEOCON PROJECT NO. S9300-06-63
CONTRACT NO. 03A1368
TASK ORDER NO. 63, EA 03-3E6200**

DECEMBER 2008



Project No. S9300-06-63
December 31, 2008

Mr. Jason Lee
California Department of Transportation – District 3
Environmental Engineering Office
P.O. Box 911
Marysville, California 95901

Subject: STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
BUTTE COUNTY, CALIFORNIA
CONTRACT NO. 03A1368, TASK ORDER NO. 63, EA 03-3E6200
AERIALY DEPOSITED LEAD AND TRAFFIC STRIPE PAINT
SITE INVESTIGATION REPORT

Dear Mr. Lee:

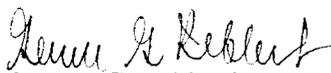
In accordance with California Department of Transportation (Caltrans) Contract No. 03A1368, Task Order Number 63, and Expense Authorization 03-3E6200, Geocon Consultants, Inc. has performed environmental engineering services for the subject project. The Site consists of Caltrans right-of-way along State Route 99 from Post Mile 28.4 to 29.4 in Butte County, California. The accompanying report summarizes the services performed, including the advancement of 47 direct-push borings for shallow soil sampling, traffic stripe paint sampling and laboratory testing.

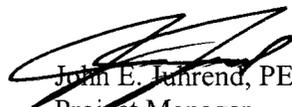
The contents of this report reflect the views of the author, who is responsible for the facts and accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the State of California or the Federal Highway Administration. This report does not constitute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

Please contact us if there are any questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.


Gemma G. Reblando
Project Geologist


John E. Juhrend, PE, CEG
Project Manager



GGR:JEJ:jaj

(5 + 2 CDs) Addressee

Project No. S9300-06-63
December 31, 2008

Mr. Jason Lee
California Department of Transportation – District 3
Environmental Engineering Office
P.O. Box 911
Marysville, California 95901

Subject: STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
BUTTE COUNTY, CALIFORNIA
CONTRACT NO. 03A1368, TASK ORDER NO. 63, EA 03-3E6200
AERIALY DEPOSITED LEAD AND TRAFFIC STRIPE PAINT
SITE INVESTIGATION REPORT

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2. Summary of Traffic Stripe Paint Sample Analytical Results

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- A. Laboratory Reports and Chain-of-custody Documentation
- B. Lead Statistics and Regression Analysis Results

AERIALLY DEPOSITED LEAD AND TRAFFIC STRIPE PAINT SITE INVESTIGATION REPORT

1.0 INTRODUCTION

This Aerially Deposited Lead (ADL) Site Investigation Report for State Route 99 (SR-99) Post Mile (PM) 28.4 to 29.4 project was prepared by Geocon Consultants, Inc. under California Department of Transportation (Caltrans) Contract No. 03A1368, Task Order (TO) Number 63, and Expense Authorization (EA) 03-3E6200.

1.1 Project Description and Proposed Improvements

The project area consists of Caltrans right-of-way along the shoulder and median areas of northbound and southbound SR-99 between Estates Drive and Southgate Avenue (the Site) in Butte County, California. Caltrans proposes to replace the northbound Butte Creek Bridge, which will include highway widening, bridge work, road cut/fill, grinding, restriping, drainage and culvert work, vegetation removal, stream channel work and rock slope protection. The approximate project location is depicted on the Vicinity Map, Figure 1, and Site Plans, Figures 2-1 and 2-2.

1.2 General Objectives

The purpose of the scope of work outlined in TO No. 63 was to evaluate whether impacts due to aerial lead deposition from motor vehicle exhaust exist in the surface and near surface soils within the project boundaries and to determine whether the yellow and white traffic stripe paint on the roadway at the Site contains lead and/or chromium. The investigative results will be used by Caltrans to inform the construction contractor(s) if lead-impacted soil and lead- and/or chromium-containing yellow and white traffic stripe paint are present within the project boundaries for health, safety and soil management/disposal purposes.

2.0 BACKGROUND

2.1 Potential Lead Soil Impacts

Ongoing testing by Caltrans throughout California has indicated that ADL exists along major freeway routes due to emissions from vehicles powered by leaded gasoline.

2.2 Hazardous Waste Determination Criteria

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

For waste containing metals, the waste is classified as California hazardous when: 1) the total metal content exceeds the respective Total Threshold Limit Concentration (TTLC); or 2) the soluble metal content exceeds the respective Soluble Threshold Limit Concentration (STLC) based on the standard Waste Extraction Test (WET). A waste may have the potential of exceeding the STLC when the waste's total metal content is greater than or equal to ten times the respective STLC value, since the WET uses a 1:10 dilution ratio. Hence, when a total metal is detected at a concentration greater than or equal to ten times the respective STLC, and assuming that 100 percent of the total metals are soluble, soluble metal analysis is required. A material is classified as RCRA hazardous, or Federal hazardous, when the soluble metal content exceeds the Federal regulatory level based on the Toxicity Characteristic Leaching Procedure (TCLP). The TTLC value for lead is 1,000 milligrams per kilogram (mg/kg). The STLC and TCLP values for lead are both 5.0 milligrams per liter (mg/l). The TTLC value for chromium is 2,500 mg/kg. The STLC and TCLP values for chromium are both 5.0 mg/l.

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

The Department of Toxic Substances Control (DTSC) regulates and interprets hazardous waste laws in California. DTSC generally considers excavated or transported materials that exhibit "hazardous waste" characteristics to be a "waste" requiring proper management, treatment and disposal. Soil that contains lead above hazardous waste thresholds and is left in-place would not be necessarily classified by DTSC as a "waste." The DTSC has provided site-specific determinations that "movement of wastes within an area of contamination does not constitute "land disposal" and, thus, does not trigger hazardous waste disposal requirements." Therefore, lead-impacted soil that is scarified in-place, moisture-conditioned, and recompacted during roadway improvement activities might not be considered a "waste." DTSC should be consulted to confirm waste classification. It is noted that in addition to DTSC regulations, health and safety requirements and other local agency requirements may also apply to the handling and disposal of lead-impacted soil.

3.0 SCOPE OF SERVICES

We performed the following scope of services as requested by Caltrans in TO No. 63:

3.1 Pre-field Activities

- Conducted a pre-work site visit on November 18, 2008, to discuss the TO scope of services. Caltrans representative Jason Lee and Geocon representative Gemma Reblando attended the

meeting. The purpose of the pre-work site visit was to identify and observe the project boundaries and conditions. The project limits were further outlined in white paint for subsequent utility clearance.

- Prepared a *Health and Safety Plan* dated November 8, 2008, to provide guidelines on the use of personal protective equipment and the health and safety procedures implemented during the field activities.
- Provided 48-hour notification to Underground Service Alert prior to job site mobilization.
- Retained the services of Advanced Technology Laboratories (ATL) to perform the chemical analysis of soil and traffic stripe paint samples.

3.2 Field Activities

The field activities consisted of collecting soil samples along the northbound and southbound shoulder and median areas of SR-99. On December 2, 2008, 137 soil samples were collected from 47 direct-push borings at the Caltrans designated soil sampling locations. The soil borings were excavated to an approximate maximum sampling depth of 3.0 feet. The soil samples were collected at general depths of 0 to 1.0 foot, 1.0 to 2.0 feet and 2.0 to 3.0 feet.

We also collected four white traffic stripe paint samples (PC1 through PC4) and four yellow traffic stripe paint samples (PC5 through PC8) at the Caltrans designated sampling locations.

4.0 INVESTIGATIVE METHODS

4.1 Boring and Traffic Stripe Paint Sample Location Rationale

The soil boring locations were designated by Caltrans in the vicinity of proposed improvements. Borings B1 through B10 were advanced along the southbound shoulder of SR-99, and borings B11 through B26 were advanced along the northbound shoulder of SR-99. Borings B27 through B34 were advanced along the median of southbound SR-99, and borings B35 through B47 were advanced along the median of northbound SR-99. The approximate soil boring locations are depicted on Figures 2-1 and 2-2.

White traffic stripe paint samples (PC1 through PC4) and yellow traffic stripe paint samples (PC5 through PC8) were collected at locations designated by Caltrans within the proposed construction area. Paint samples PC1 and PC2 were obtained from the shoulder of southbound SR-99, and paint samples PC3 and PC4 were obtained from the shoulder of northbound SR-99. Paint samples PC5 through PC8 were obtained from the median of SR-99. The approximate traffic paint sample locations are depicted on Figures 2-1 and 2-2.

The coordinates of each boring and paint sample location were determined using a differential global positioning system (GPS). The GPS was utilized during the field activities to locate the horizontal

position of each location with an error of no more than 3.0 feet. The latitude and longitude of the boring locations are summarized in Tables 1 and 2 .

4.2 Soil Sampling Procedures

A total of 137 soil samples were collected from 47 direct-push borings excavated at the Site. Soil samples were collected in cellulose thermoplastic (acetate) liners driven by the direct-push rig. The acetate liners were cut to separate the sample by depth, then the sample from a particular interval was opened and the soil sample was transferred to a Ziploc[®] re-sealable plastic bag. The soil samples were field homogenized within the sample bags and subsequently labeled, placed in an ice chest, and delivered to ATL for analytical testing under chain-of-custody (COC) documentation.

Quality Assurance/Quality Control (QA/QC) procedures were performed during the field exploration activities. These procedures included decontamination of sampling equipment before each boring was advanced and providing COC documentation for each sample submitted to the laboratory. The soil sampling equipment was cleansed between each boring by washing the equipment with an Alconox[™] solution followed by a double rinse with deionized water. The field sampling activities were performed under the supervision of Geocon's field manager.

The direct-push borings were backfilled with the excess soil cuttings generated at each boring. The decontamination water was discharged to the ground surface away from surface water bodies or storm drain inlets.

4.3 Traffic Stripe Paint Sampling Procedures

The traffic stripe paint samples were collected using a hammer to break a chip off the traffic stripe paint. The paint samples were placed in Ziploc[®] re-sealable plastic bags, subsequently labeled, and delivered to ATL under standard COC documentation.

4.4 Traffic Control

Traffic control, including the use of an attenuator truck, was provided by Caltrans based on the proximity of the work zone with respect to the active traffic lanes. We also provided "SHOULDER WORK AHEAD" advanced warning signs and orange traffic cones during the field work.

4.5 Laboratory Analyses

The soil and traffic stripe paint samples collected within the project boundaries were submitted to ATL for the following analyses under standard turn-around-time (TAT). The laboratory was instructed to homogenize the soil samples prior to analysis in accordance with Contract 03A1368 requirements.

- One hundred thirty-seven soil samples were analyzed for total lead following United States Environmental Protection Agency (EPA) Test Method 6010B.
- Fourteen randomly selected soil samples were analyzed for soil pH following EPA Test Method 9045.
- Eighteen soil samples were further analyzed for WET soluble lead following EPA Test Method 7420.
- One soil sample was analyzed for TCLP soluble lead following EPA Test Methods 1311 and 7420.
- Eight traffic stripe paint samples were analyzed for total lead and total chromium following EPA Test Method 6010B.
- Four traffic stripe paint samples were further analyzed for WET soluble lead following EPA Test Method 7420.
- Three traffic stripe paint samples were analyzed for TCLP soluble lead following EPA Test Methods 1311 and 7420.

4.6 Quality Assurance/Quality Control

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

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

Prior to submitting the soil and paint samples to the laboratory, the COC documentation was reviewed for accuracy and completeness. Reproductions of the laboratory reports and COC documentation are presented in Appendix A.

5.0 FIELD OBSERVATIONS AND INVESTIGATIVE RESULTS

5.1 Site Conditions

Soil encountered during the excavation of borings was generally comprised of gravelly sand to the maximum sampling depth of approximately 3.0 feet. Cobbles were encountered in borings located in the highway median to the maximum sampling depth of 3.0 feet. Groundwater was not encountered during the excavation of the soil borings.

5.2 Soil Analytical Results

Total lead was detected in 53 of the 137 soil samples collected at concentrations ranging from 5.6 to 240 mg/kg. Eighteen of the 137 soil samples had reported total lead concentrations greater than 50 mg/kg (ten times the STLC value for lead of 5.0 mg/l).

WET soluble lead was reported for each of the 18 soil samples analyzed at concentrations ranging from 2.2 to 18 mg/l. Twelve of the 18 soil samples had soluble (WET) lead concentrations greater than the STLC value for lead of 5.0 mg/l.

TCLP soluble lead was not reported for soil sample B15-0 at a concentration exceeding the laboratory method reporting limit (MRL) of 0.25 mg/l.

Soil pH values ranged from 6.7 to 8.2.

A summary of the soil analytical results are presented in Table 1. The laboratory reports and COC documentation are presented in Appendix A.

5.3 Traffic Stripe Paint Sample Analytical Results

Total lead was reported for three of the four white traffic stripe paint samples (PC1, PC3 and PC4) at concentrations ranging from 13 mg/kg (PC3) to 300 mg/kg (PC1), less than the California hazardous waste threshold (TTLC) for lead of 1,000 mg/kg. Total chromium was reported for two of the four white traffic stripe paint samples (PC1 and PC4) at concentrations of 66 mg/kg (PC1) and 24 mg/kg (PC4), less than the California hazardous waste threshold (TTLC) for chromium of 2,500 mg/kg.

Total lead was reported for three of the four yellow traffic stripe paint samples (PC5, PC6 and PC8) at concentrations ranging from 1,200 mg/kg (PC8) to 3,700 mg/kg (PC5), greater than the California hazardous waste threshold (TTLC) for lead of 1,000 mg/kg. Total chromium was reported for three of the four yellow traffic stripe paint samples (PC5, PC6 and PC8) at concentrations ranging from 290 mg/kg (PC8) to 810 mg/kg (PC5), less than the California hazardous waste threshold (TTLC) for chromium of 2,500 mg/kg.

WET soluble lead was reported for three of the four traffic stripe paint samples analyzed at concentrations ranging from 3.3 to 9.0 mg/l (PC6). Two of the four paint samples had soluble (WET) lead concentrations greater than the STLC value for lead of 5.0 mg/l.

TCLP soluble lead was reported for paint samples PC5, PC6 and PC8 at concentrations of 0.72, 0.69 and 1.1 mg/l, respectively, less than the federal RCRA hazardous waste threshold of 5.0 mg/l.

The analytical results of the traffic stripe paint samples will be used by Caltrans to provide contractors with preliminary analytical data of the traffic stripe paint.

The analytical results of the traffic stripe paint samples are summarized on Table 2. Laboratory reports and COC documentation are presented in Appendix A.

5.4 Laboratory QA/QC

We reviewed the laboratory QA/QC provided with the laboratory reports. The data show acceptable surrogate recoveries and non-detect results for the method blanks. However, the relative percent differences (RPDs) for EPA Method 6010 were outside the RPD limit. The Case Narrative in the laboratory report states “RPD for Duplicate (DUP) is outside criteria for samples 102311-012ADUP, 102512-060ADUP and 102512-090ADUP; however, the Laboratory Control Sample (LCS) validated the analytical batch.” The data showed acceptable recoveries and RPDs for the remainder of the matrix spikes and duplicates. Based on this limited data review, no additional qualifications of the soil data are necessary, and the data are of sufficient quality for the purposes of this report.

5.5 Statistical Evaluation for Lead Detected in Soil Samples

Statistical methods were applied to the total lead data to evaluate: 1) the upper confidence limits (UCLs) of the arithmetic means of the total lead concentrations for each sampling depth; and 2) if an acceptable correlation between total and soluble lead concentrations exists that would allow the prediction of soluble lead concentrations based on calculated UCLs. The statistical methods used are discussed in a book entitled *Statistical Methods for Environmental Pollution Monitoring*, by Richard Gilbert; in an EPA *Technology Support Center Issue* document entitled, *The Lognormal Distribution in Environmental Applications*, by Ashok Singh et. al., dated December 1997; and in a book entitled *An Introduction to the Bootstrap*, by Bradley Efron and Robert J. Tibshirani.

5.5.1 Calculating the UCLs for the Arithmetic Mean

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

Non-parametric bootstrap techniques used to calculate the UCLs are discussed in the previously referenced EPA document and in *An Introduction to the Bootstrap*. For those samples in which total

lead was not detected at concentrations exceeding the laboratory MRL, a value equal to one-half of the detection limit was used in the UCL calculation. The bootstrap results are included in Appendix B. The calculated UCLs and statistical results are summarized in the table below:

| SAMPLE INTERVAL (feet) | 90% TOTAL LEAD UCL (mg/kg) | 95% TOTAL LEAD UCL (mg/kg) | TOTAL LEAD MEAN (mg/kg) | MINIMUM VALUE (mg/kg) | MAXIMUM VALUE (mg/kg) |
|---------------------------|----------------------------------|----------------------------------|-------------------------------|-----------------------------|-----------------------------|
| 0 to 1.0 | 60.1 | 62.7 | 49.1 | 2.5 | 240 |
| 1.0 to 2.0 | 9.4 | 9.9 | 6.9 | 2.5 | 80 |
| 2.0 to 3.0 | 7.9 | 8.6 | 5.6 | 2.5 | 77 |

5.5.2 Correlation of Total and Soluble Lead

Total and corresponding soluble (WET) lead concentrations are bivariate data with a linear structure. This linear structure should allow for the prediction of soluble lead (WET) concentrations based on the UCLs calculated above in Section 5.5.1.

To estimate the degree of interrelation between total and corresponding soluble (WET) lead values (x and y , respectively), the *correlation coefficient* [r] is used. The correlation coefficient is a ratio that ranges from +1 to -1. A *correlation coefficient* of +1 indicates a perfect direct relationship between two variables; a *correlation coefficient* of -1 indicates that one variable changes inversely with relation to the other. Between the two extremes is a spectrum of less-than-perfect relationships, including zero, which indicates the lack of any sort of linear relationship at all. The *correlation coefficient* was calculated for the 18 (x , y) data points (i.e., soil samples analyzed for both total lead [x] and soluble [WET] lead [y]) and equaled 0.8387. A *correlation coefficient* greater than or equal to 0.8 is an acceptable indicator that a correlation exists.

For the *correlation coefficient* that indicates a linear relationship between total and soluble (WET) lead concentrations, it is possible to compute the line of dependence or a best-fit line between the two variables. A least squares method was used to find the equation of a best-fit line (regression line) by forcing the y-intercept equal to zero since that is a known point. The equation of the regression line was determined to be $y = 0.0606(x)$, where x represents total lead concentrations and y represents predicted soluble lead (WET) concentrations.

This equation was used to estimate the expected WET soluble lead concentrations for the UCLs calculated in Section 5.5.1. Regression analysis results and a scatter plot depicting the (x , y) data points along with the regression line are included in Appendix B. The 90% and 95 % UCL-predicted WET soluble lead concentrations are summarized in Section 6.0.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 ADL Soil Waste Disposal/Reuse Classification

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

Based on the TCLP soluble lead results of less than 5.0 mg/l, soil generated at the Site will not require disposal as a RCRA hazardous waste. If soil within the project limits is scarified in-place, moisture-conditioned, and recompacted during roadway improvement activities, it may not be considered a “waste.”

The table below summarizes the predicted soluble (WET) lead concentrations and the waste classification for excavated soil within this area based on the calculated total lead UCLs and the relationship between total and soluble (WET) lead. Excavation scenarios and the UCL-predicted soluble (WET) lead calculations are summarized in the table below.

| Excavation Depth | 90% UCL Total Lead (mg/kg) | 90% UCL Predicted WET Lead (mg/l) | 95% UCL Total Lead (mg/kg) | 95% UCL Predicted WET Lead (mg/l) | Waste Classification |
|--|----------------------------|-----------------------------------|----------------------------|-----------------------------------|----------------------|
| 0 to 1.0 foot | 60.1 | 3.6 | 62.7 | 3.8 | <i>Non-hazardous</i> |
| <i>Underlying soil (1.0 to 3.0 feet)</i> | 8.7 | 0.5 | 9.3 | 0.6 | <i>Non-hazardous</i> |
| 0 to 2.0 feet | 34.8 | 2.1 | 36.3 | 2.2 | <i>Non-hazardous</i> |
| <i>Underlying soil (2.0 to 3.0 feet)</i> | 7.9 | 0.5 | 8.6 | 0.5 | <i>Non-hazardous</i> |
| 0 to 3.0 feet | 25.8 | 1.6 | 27.1 | 1.6 | Non-hazardous |

90% UCL applicable for waste classification; 95% UCL applicable for risk assessment
 Predicted WET lead concentrations were calculated using the equation of the regression line: $y = 0.0606x$

Based on the above table, soil generated from the top 3.0 feet would not be classified as a California hazardous waste since the 90% and 95% UCL-predicted soluble (WET) lead concentrations are less than the STLC value for lead of 5.0 mg/l. Consequently, the top 3.0 feet of excavated soil could be reused or disposed as non-hazardous soil with respect to lead content.

6.2 Traffic Stripe Paint Waste Classification/Disposal

The yellow and white traffic stripe paint was sampled per Caltrans’ request since it may be removed from the underlying asphalt concrete by grinding or sand blasting, which would create a paint waste stream. The analytical results of the traffic stripe paint will be used by Caltrans to provide contractors with preliminary analytical data of the traffic stripe paint.

The highest reported concentrations of total lead and total chromium for the yellow traffic stripe paint samples collected at the Site were 3,700 and 810 mg/kg, respectively. Two of the three yellow traffic paint samples (PC5 and PC6) analyzed had WET soluble lead concentrations greater than the lead STLC of 5.0 mg/l. TCLP soluble lead was reported for the three yellow traffic stripe paint samples (PC5, PC6 and PC8) at concentrations less than the federal RCRA hazardous waste threshold of 5.0 mg/l. Since two of the four yellow traffic stripe paint samples had WET soluble lead concentration greater than 5.0 mg/l, waste streams containing yellow traffic stripe paints may require disposal as a California hazardous waste. Additional analytical testing of the yellow traffic stripe paint waste stream at the Site would be required to determine appropriate disposal options.

The highest reported concentrations of total lead and total chromium for the white traffic stripe paint samples were 300 and 66 mg/kg, respectively, less than the lead TTLC of 1,000 mg/kg and chromium TTLC of 2,500 mg/kg. WET soluble lead was reported at less than the MRL for one white traffic paint sample with total lead concentration greater than 50 mg/kg. Thus, the white traffic stripe paint will not require disposal as a California hazardous waste based on lead content.

6.3 Worker Protection

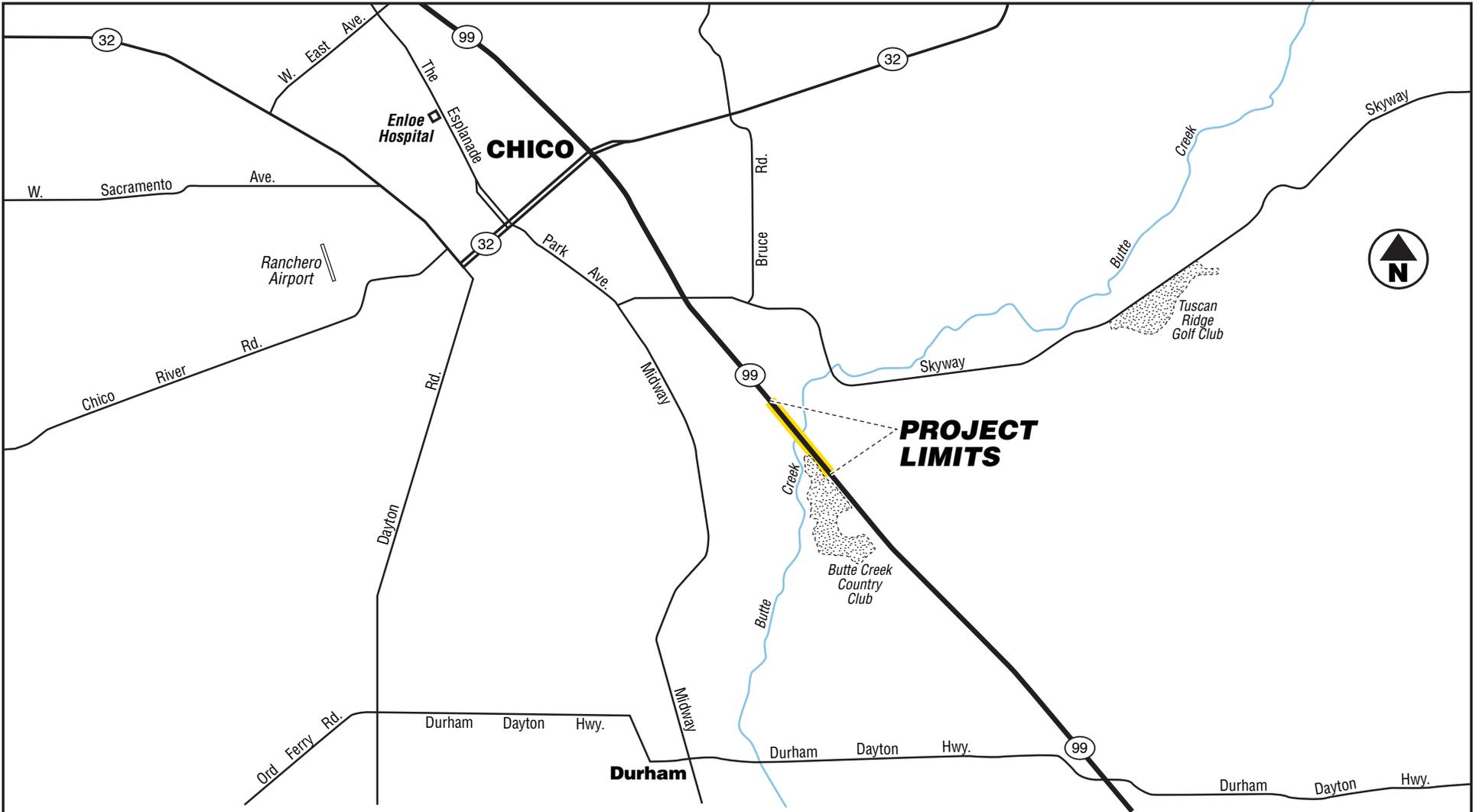
Per Caltrans requirements, the contractor(s) should prepare a project-specific Lead Compliance Plan (CCR Title 8, Section 1532.1, the “Lead in Construction” standard) to minimize worker exposure to lead-impacted soil. The plan should include protocols for environmental and personnel monitoring, requirements for personal protective equipment, and other health and safety protocols and procedures for the handling of lead-impacted soil.

Since material at the Site contains lead and/or chromium, and according to Caltrans removal of the traffic stripe paint may produce toxic waste materials, we recommend that a health and safety plan be prepared to minimize worker exposure. The health and safety plan should include a discussion of the constituents of concern, routes of exposure, permissible exposure limits, and personal protective measures. The health and safety plan should be reviewed and signed by the onsite construction workers prior to any field activities. We also recommend that contractors on the Site grinding asphalt which has been coated with yellow and/or white paint prepare a dust control plan. The dust control plan should include dust mitigation and monitoring procedures.

7.0 REPORT LIMITATIONS

This report has been prepared exclusively for Caltrans. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

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



| | | |
|---|---------------|---|
|  CONSULTANTS, INC. <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742 PHONE 916 852-9118 - FAX 916 852-9132</small> | |  |
| State Route 99 (03-BUT-99) Post Mile 28.4 to 29.4 | | |
| Butte County, California | | VICINITY MAP |
| GEOCON Proj. No. S9300-06-63 | | |
| Task Order No. 63 | December 2008 | |



LAYOUT 1 OF 2
 REPLACE BR NO. 12-0126R
 BUTTE CREEK BRIDGE
 03-3E620K REVISED 5-18-07

LEGEND:

- B1** Approximate Direct-Push Boring Location
- PC1** Approximate Traffic Stripe Paint Sample Location



| | |
|--|-------------------|
| | |
| <small>3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742 PHONE 916 852-9118 - FAX 916 852-9132</small> | |
| State Route 99 (03-BUT-99) Post Mile 28.4 to 29.4 | |
| Butte County, California | SITE PLAN |
| GEOCON Proj. No. S9300-06-63 | Task Order No. 63 |
| December 2008 | Figure 2-1 |



LAYOUT 2 OF 2
 REPLACE BR NO. 12-0126R
 BUTTE CREEK BRIDGE
 03-3E620K REVISED 5-18-07

LEGEND:

- B1** Approximate Direct-Push Boring Location
- PC1** Approximate Traffic Stripe Paint Sample Location



GEOCON

CONSULTANTS, INC.

3160 GOLD VALLEY DR. - SUITE 800 - RANCHO CORDOVA, CA. 95742
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State Route 99 (03-BUT-99) Post Mile 28.4 to 29.4

Butte County,
 California

SITE PLAN

GEOCON Proj. No. S9300-06-63

Task Order No. 63

December 2008

Figure 2-2

TABLE 1
 SUMMARY OF SOIL BORING COORDINATES, LEAD AND SOIL pH ANALYTICAL RESULTS
 STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
 BUTTE COUNTY, CALIFORNIA

| BORING ID | SAMPLE DATE | LATITUDE | LONGITUDE | TOTAL LEAD (mg/kg) | WET LEAD (mg/l) | SOIL pH |
|-----------|-------------|------------|--------------|-----------------------|--------------------|---------|
| B1-0 | 12/2/2008 | 39.6989790 | -121.7836540 | <5.0 | --- | --- |
| B1-1 | | | | <5.0 | --- | --- |
| B1-2 | | | | <5.0 | --- | --- |
| B2-0 | 12/2/2008 | 39.6975125 | -121.7819638 | <5.0 | --- | 7.0 |
| B2-1 | | | | <5.0 | --- | --- |
| B2-2 | | | | 15 | --- | --- |
| B3-0 | 12/2/2008 | 39.6969520 | -121.7813935 | <5.0 | --- | --- |
| B3-1 | | | | 8.5 | --- | --- |
| B3-2 | | | | <5.0 | --- | --- |
| B4-0 | 12/2/2008 | 39.6961448 | -121.7804598 | <5.0 | --- | --- |
| B4-1 | | | | <5.0 | --- | --- |
| B4-2 | | | | <5.0 | --- | --- |
| B5-0 | 12/2/2008 | 39.6938404 | -121.7778607 | 6.9 | --- | --- |
| B5-1 | | | | <5.0 | --- | --- |
| B5-2 | | | | <5.0 | --- | --- |
| B6-0 | 12/2/2008 | 39.6931990 | -121.7771694 | <5.0 | --- | --- |
| B6-1 | | | | <5.0 | --- | 8.0 |
| B6-2 | | | | <5.0 | --- | --- |
| B7-0 | 12/2/2008 | 39.6925819 | -121.7764839 | 7.5 | --- | --- |
| B7-1 | | | | <5.0 | --- | --- |
| B8-0 | 12/2/2008 | 39.6919590 | -121.7758010 | 9.1 | --- | --- |
| B8-1 | | | | <5.0 | --- | --- |
| B8-2 | | | | <5.0 | --- | 7.8 |
| B9-0 | 12/2/2008 | 39.6913396 | -121.7750905 | 7.4 | --- | --- |
| B9-1 | | | | <5.0 | --- | --- |
| B9-2 | | | | <5.0 | --- | --- |
| B10-0 | 12/2/2008 | 39.6952995 | -121.7795103 | <5.0 | --- | --- |
| B10-1 | | | | <5.0 | --- | --- |
| B10-2 | | | | <5.0 | --- | --- |
| B11-0 | 12/2/2008 | 39.6906041 | -121.7736587 | 110 | 6.4 | --- |
| B11-1 | | | | <5.0 | --- | --- |
| B11-2 | | | | <5.0 | --- | --- |
| B12-0 | 12/2/2008 | 39.6912063 | -121.7743461 | 86 | 5.9 | --- |
| B12-1 | | | | <5.0 | --- | --- |
| B12-2 | | | | <5.0 | --- | --- |
| B13-0 | 12/2/2008 | 39.6918343 | -121.7750493 | 62 | 5.0 | --- |
| B13-1 | | | | <5.0 | --- | 8.1 |
| B13-2 | | | | <5.0 | --- | --- |

TABLE 1
 SUMMARY OF SOIL BORING COORDINATES, LEAD AND SOIL pH ANALYTICAL RESULTS
 STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
 BUTTE COUNTY, CALIFORNIA

| BORING ID | SAMPLE DATE | LATITUDE | LONGITUDE | TOTAL LEAD (mg/kg) | WET LEAD (mg/l) | SOIL pH |
|-----------|-------------|------------|--------------|-----------------------|----------------------|---------|
| B14-0 | 12/2/2008 | 39.6924576 | -121.7757475 | 130 | 13 | --- |
| B14-1 | | | | <5.0 | --- | 8.2 |
| B14-2 | | | | <5.0 | --- | --- |
| B15-0 | 12/2/2008 | 39.6930741 | -121.7764377 | 240 | 18 (<0.25) | --- |
| B15-1 | | | | <5.0 | --- | --- |
| B15-2 | | | | <5.0 | --- | --- |
| B16-0 | 12/2/2008 | 39.6936928 | -121.7771349 | 93 | 3.9 | --- |
| B16-1 | | | | <5.0 | --- | --- |
| B16-2 | | | | <5.0 | --- | --- |
| B17-0 | 12/2/2008 | 39.6950124 | -121.7786166 | 180 | 8.7 | --- |
| B17-1 | | | | 25 | --- | --- |
| B17-2 | | | | <5.0 | --- | --- |
| B18-0 | 12/2/2008 | 39.6955899 | -121.7792541 | 14 | --- | --- |
| B18-1 | | | | <5.0 | --- | --- |
| B18-2 | | | | <5.0 | --- | --- |
| B19-0 | 12/2/2008 | 39.6962099 | -121.7799528 | 49 | --- | --- |
| B19-1 | | | | <5.0 | --- | --- |
| B19-2 | | | | <5.0 | --- | --- |
| B20-0 | 12/2/2008 | 39.6968236 | -121.7806401 | 52 | 2.5 | 6.7 |
| B20-1 | | | | <5.0 | --- | --- |
| B20-2 | | | | <5.0 | --- | --- |
| B21-0 | 12/2/2008 | 39.6974503 | -121.7813451 | 110 | 3.4 | --- |
| B21-1 | | | | <5.0 | --- | --- |
| B21-2 | | | | <5.0 | --- | --- |
| B22-0 | 12/2/2008 | 39.6980763 | -121.7820375 | 130 | 7.4 | 6.9 |
| B22-1 | | | | 9.9 | --- | --- |
| B22-2 | | | | <5.0 | --- | --- |
| B23-0 | 12/2/2008 | 39.6986923 | -121.7827383 | 48 | --- | --- |
| B23-1 | | | | 6.9 | --- | --- |
| B23-2 | | | | <5.0 | --- | --- |
| B24-0 | 12/2/2008 | 39.6993049 | -121.7834327 | 140 | 7.7 | --- |
| B24-1 | | | | <5.0 | --- | --- |
| B24-2 | | | | <5.0 | --- | --- |
| B25-0 | 12/2/2008 | 39.6999362 | -121.7840980 | 49 | --- | --- |
| B25-1 | | | | 80 | 3.8 | --- |
| B25-2 | | | | 77 | 3.7 | --- |
| B26-0 | 12/2/2008 | 39.7005720 | -121.7847825 | 71 | 2.2 | --- |
| B26-1 | | | | 45 | --- | --- |
| B26-2 | | | | <5.0 | --- | 7.1 |

TABLE 1
 SUMMARY OF SOIL BORING COORDINATES, LEAD AND SOIL pH ANALYTICAL RESULTS
 STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
 BUTTE COUNTY, CALIFORNIA

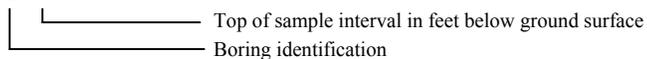
| BORING ID | SAMPLE DATE | LATITUDE | LONGITUDE | TOTAL LEAD (mg/kg) | WET LEAD (mg/l) | SOIL pH |
|-----------|-------------|------------|--------------|-----------------------|--------------------|---------|
| B27-0 | 12/2/2008 | 39.6968552 | -121.7810564 | <5.0 | --- | --- |
| B27-1 | | | | <5.0 | --- | --- |
| B27-2 | | | | 20 | --- | --- |
| B28-0 | 12/2/2008 | 39.6960193 | -121.7801150 | 9.4 | --- | --- |
| B28-1 | | | | <5.0 | --- | 7.4 |
| B28-2 | | | | 6.4 | --- | --- |
| B29-0 | 12/2/2008 | 39.6951831 | -121.7791813 | <5.0 | --- | --- |
| B29-1 | | | | 6.2 | --- | --- |
| B29-2 | | | | <5.0 | --- | --- |
| B30-0 | 12/2/2008 | 39.6939635 | -121.7777698 | 5.8 | --- | --- |
| B30-1 | | | | <5.0 | --- | --- |
| B30-2 | | | | <5.0 | --- | --- |
| B31-0 | 12/2/2008 | 39.6932755 | -121.7770247 | <5.0 | --- | --- |
| B31-1 | | | | <5.0 | --- | --- |
| B31-2 | | | | <5.0 | --- | --- |
| B32-0 | 12/2/2008 | 39.6926509 | -121.7763325 | 5.8 | --- | --- |
| B32-1 | | | | <5.0 | --- | --- |
| B32-2 | | | | <5.0 | --- | --- |
| B33-0 | 12/2/2008 | 39.6926573 | -121.7763291 | 8.8 | --- | --- |
| B33-1 | | | | <5.0 | --- | --- |
| B33-2 | | | | <5.0 | --- | 7.4 |
| B34-0 | 12/2/2008 | 39.6920243 | -121.7756235 | <5.0 | --- | --- |
| B34-1 | | | | <5.0 | --- | --- |
| B34-2 | | | | 7.2 | --- | --- |
| B35-0 | 12/2/2008 | 39.6907760 | -121.7741982 | 8.7 | --- | --- |
| B35-1 | | | | <5.0 | --- | --- |
| B35-2 | | | | <5.0 | --- | 7.6 |
| B36-0 | 12/2/2008 | 39.6905350 | -121.7738232 | 19 | --- | --- |
| B36-1 | | | | 6.0 | --- | --- |
| B36-2 | | | | <5.0 | --- | --- |
| B37-0 | 12/2/2008 | 39.6911618 | -121.7745136 | 12 | --- | --- |
| B37-1 | | | | 17 | --- | --- |
| B37-2 | | | | <5.0 | --- | --- |
| B38-0 | 12/2/2008 | 39.6917882 | -121.7752233 | 160 | 8.1 | --- |
| B38-1 | | | | <5.0 | --- | 7.4 |
| B38-2 | | | | <5.0 | --- | --- |
| B39-0 | 12/2/2008 | 39.6924200 | -121.7759242 | 120 | 8.8 | --- |
| B39-1 | | | | <5.0 | --- | --- |
| B39-2 | | | | <5.0 | --- | --- |

TABLE 1
 SUMMARY OF SOIL BORING COORDINATES, LEAD AND SOIL pH ANALYTICAL RESULTS
 STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
 BUTTE COUNTY, CALIFORNIA

| BORING ID | SAMPLE DATE | LATITUDE | LONGITUDE | TOTAL LEAD (mg/kg) | WET LEAD (mg/l) | SOIL pH |
|-----------|-------------|------------|--------------|-----------------------|--------------------|---------|
| B40-0 | 12/2/2008 | 39.6930461 | -121.7766249 | 75 | 6.1 | --- |
| B40-1 | | | | <5.0 | --- | --- |
| B40-2 | | | | <5.0 | --- | --- |
| B41-0 | 12/2/2008 | 39.6936788 | -121.7773342 | 11 | --- | --- |
| B41-1 | | | | 5.6 | --- | --- |
| B41-2 | | | | 22 | --- | --- |
| B42-0 | 12/2/2008 | 39.6948145 | -121.7786500 | 130 | 6.3 | --- |
| B42-1 | | | | <5.0 | --- | --- |
| B42-2 | | | | <5.0 | --- | --- |
| B43-0 | 12/2/2008 | 39.6956703 | -121.7795769 | 37 | --- | --- |
| B43-1 | | | | <5.0 | --- | --- |
| B43-2 | | | | <5.0 | --- | 7.4 |
| B44-0 | 12/2/2008 | 39.6965075 | -121.7805291 | 12 | --- | --- |
| B44-1 | | | | <5.0 | --- | --- |
| B44-2 | | | | <5.0 | --- | --- |
| B45-0 | 12/2/2008 | 39.6973440 | -121.7814660 | <5.0 | --- | --- |
| B45-1 | | | | <5.0 | --- | --- |
| B46-0 | 12/2/2008 | 39.6981851 | -121.7823955 | 39 | --- | --- |
| B46-1 | | | | <5.0 | --- | 7.0 |
| B47-0 | 12/2/2008 | 39.6990165 | -121.7833223 | 34 | --- | --- |
| B47-1 | | | | 25 | --- | --- |

Notes:

B1-0



mg/kg = Milligrams per kilogram

mg/l = Milligrams per liter

< = Less than the laboratory test method reporting limits

--- = Not analyzed

WET = Waste Extraction Test analyzed by EPA Method 7420

TCLP = Toxicity Characteristic Leaching Procedure

(<0.25) = Concentration in parenthesis indicates TCLP soluble lead

Concentrations in **bold type** are equal to or greater than the Soluble Threshold Limit Concentration for lead of 5.0 mg/l.

TABLE 2
 SUMMARY OF TRAFFIC STRIPE PAINT SAMPLE ANALYTICAL RESULTS
 STATE ROUTE 99 (03-BUT-99) POST MILE 28.4 TO 29.4
 BUTTE COUNTY, CALIFORNIA

| SAMPLE ID | TRAFFIC PAINT COLOR | SAMPLE DATE | LATITUDE | LONGITUDE | TOTAL LEAD (mg/kg) | WET LEAD (mg/l) | TCLP LEAD (mg/l) | TOTAL CHROMIUM (mg/kg) |
|------------------------------------|---------------------|-------------|------------|--------------|--------------------|-----------------|------------------|------------------------|
| WHITE TRAFFICE STRIP PAINT | | | | | | | | |
| PC1 | WHITE | 12/2/2008 | 39.6937560 | -121.7777500 | 300 | <0.25 | --- | 66 |
| PC2 | WHITE | 12/2/2008 | 39.6913396 | -121.7750905 | <4.0 | --- | --- | <4.0 |
| PC3 | WHITE | 12/2/2008 | 39.6918343 | -121.7750493 | 13 | --- | --- | <4.0 |
| PC4 | WHITE | | 39.6962099 | -121.7799528 | 27 | --- | --- | 24 |
| YELLOW TRAFFIC STRIPE PAINT | | | | | | | | |
| PC5 | YELLOW | 12/2/2008 | 39.6968552 | -121.7810564 | 3,700 | 6.5 | 0.72 | 810 |
| PC6 | YELLOW | 12/2/2008 | 39.6926509 | -121.7763325 | 2,600 | 9.0 | 0.69 | 570 |
| PC7 | YELLOW | 12/2/2008 | 39.6905350 | -121.7738232 | <4.0 | --- | --- | <4.0 |
| PC8 | YELLOW | 12/2/2008 | 39.6973440 | -121.7814660 | 1,200 | 3.3 | 1.1 | 290 |

Notes: mg/kg = Milligrams per kilogram
 mg/l = Milligrams per liter
 < = Less than the laboratory test method reporting limits
 --- = Not analyzed
 WET = Waste Extraction Test analyzed by EPA Method 7420
 TCLP = Toxicity Characteristic Leaching Procedure
 Concentrations in **bold type** are equal to or greater than the Soluble Threshold Limit Concentration for lead of 5.0 mg/l.

ASBESTOS AND LEAD-CONTAINING PAINT SURVEY



**Butte Creek Bridges
03-BUT-99 PM 28.721 to PM 28.782
Butte County, California**

PREPARED FOR:

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
DISTRICT 3
703 B STREET, P.O. BOX 911
MARYSVILLE, CALIFORNIA 95901**



PREPARED BY:

**GEOCON CONSULTANTS, INC.
3160 GOLD VALLEY DRIVE, SUITE 800
RANCHO CORDOVA, CALIFORNIA 95742**



**GEOCON PROJECT NO. S9300-06-187
TASK ORDER NO. 187,
E-FIS 03 0000 0509 1 (EA 03-3E6201)
CONTRACT NO 03A1368**

APRIL 2012



Project No. S9300-06-187

April 2, 2012

Alicia Beyer, Task Order Manager
Caltrans District 3
703 B Street
Marysville, California 95901

Subject: ASBESTOS AND LEAD-CONTAINING PAINT SURVEY REPORT
HIGHWAY 99 - BUTTE CREEK BRIDGES
BUTTE COUNTY, CALIFORNIA
CONTRACT NO. 03A1368, E-FIS 03 0000 0509 1 (EA 03-3E6201)
TASK ORDER NO. 187, 03-BUT-99

Dear Ms. Beyer:

In accordance with California Department of Transportation Contract No. 03A1368 and Task Order No. 187, we have performed an asbestos and lead-containing paint survey of the subject bridges in Butte County, California. The scope of services included surveying the structures for suspect asbestos-containing materials and lead-containing paint, collecting bulk samples, and submitting the samples to laboratories for analyses.

The accompanying report summarizes the services performed and laboratory analysis.

The contents of this report reflect the views of Geocon Consultants, Inc., 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.

Please contact us if you have questions concerning the contents of this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.


David A. Watts, CAC
Senior Project Scientist


John F. Juhrend, PE, CEG
Project Manager

(4 + 2 CDs) Addressee

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FIGURES

1. Vicinity Map
2. Site Plan

PHOTOGRAPHS (1 through 6)

TABLES

1. Summary of Asbestos Analytical Results
2. Summary of Paint Analytical Results – Total and Soluble Lead

APPENDIX

- A. Analytical Laboratory Reports and Chain-of-custody Documentation

ASBESTOS AND LEAD-CONTAINING PAINT SURVEY REPORT

1.0 INTRODUCTION

This asbestos and lead-containing paint (LCP) survey report was prepared by Geocon Consultants, Inc. under Caltrans Contract No. 03A1368, Task Order No. 187 (TO-187).

1.1 Project Description

The project consists of the Butte Creek Bridges (12-0126L and 12-0126R) at Post Mile (PM) 28.721 on Highway 99 in Butte County, California. We performed asbestos and LCP survey activities at the structures. The approximate project location is depicted on the Vicinity Map, Figure 1. The approximate sample locations are depicted on the Site Plan, Figure 2.

1.2 General Objectives

The purpose of the scope of services outlined in TO-187 was to determine the presence and quantity of asbestos and LCP at the project location prior to planned improvements. The information obtained from this investigation will be used by Caltrans for waste profiling, determining California Occupational Safety and Health Administration (Cal/OSHA) applicability, and coordinating asbestos and LCP disturbance activities.

It was not Geocon's intent during this inspection to conduct an evaluation of lead-based paint hazards in accordance with U.S. Department of Housing and Urban Development (HUD) guidelines.

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 nonfriable 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 hazardous waste when friable, is classified as any manufactured material that contains *greater than 1%* asbestos by dry weight *and* is:

- Friable (can be crumbled, pulverized, or reduced to powder by hand pressure); 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 nonfriable 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 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 addressed. 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 substrate. Demolition of a deteriorated LCP component would require waste characterization and appropriate disposal. Intact LCP on a component is currently accepted by most landfills and recycling facilities; 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 total lead content equals or exceeds the respective Total Threshold Limit Concentration (TTLC) of 1,000 milligrams per kilogram (mg/kg); or 2) the 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 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., lead concentration) 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 lead-containing paint. 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 Title 8, CCR, Section 1532.1.

2.3 Architectural Drawings and Previous Survey Activities

We reviewed structure architectural plans provided by Caltrans prior to field activities. No indication of asbestos or lead paint used at the bridge structure was identified in the documentation provided. Previous asbestos survey reports were not available for our review.

3.0 SCOPE OF SERVICES

Mr. David Watts, a California-Certified Asbestos Consultant (CAC), certification No. 98-2404 (expiration September 16, 2012), and Certified Lead Paint Inspector/Assessor and Project Monitor with the California Department of Public Health Services (DPH), certification numbers I-1734 and M-1734 (expiration December 4, 2012), performed the asbestos and LCP survey at the project location on March 5, 2012.

3.1 Asbestos

Suspect ACM were grouped into homogeneous areas with representative samples randomly collected from each. In addition, each potential ACM was evaluated for friability. A total of four bulk asbestos samples representing two suspect components were collected.

Our procedures for inspection and sampling in accordance with TO-187 are discussed below:

- Collected bulk asbestos samples after first wetting friable material with a light mist of water. The samples were then cut from the substrate and transferred to a labeled container. Note that when multiple samples were collected, the sampling locations were distributed throughout the homogeneous area (spaces where the material was observed).
- Relinquished bulk asbestos samples to EMSL Analytical, Inc., a California-licensed and Caltrans-approved subcontractor, for asbestos analysis in accordance with United States Environmental Protection Agency (EPA) Test Method 600/R-93/116 using polarized light microscopy (PLM) under chain-of-custody protocol. EMSL Analytical, Inc. is a laboratory accredited by the National Institute of Standards and Technology National Voluntary Laboratory Accreditation Program (NIST-NVLAP) for bulk asbestos fiber analysis. The laboratory analyses were requested on a 48-hour turnaround time.

Sample identification numbers, material descriptions, approximate quantities, friability assessments, and photo references are summarized on Table 1. Approximate sample locations are presented on Figure 2. Materials represented by the samples collected are shown in the attached photographs.

3.2 Lead Paint

Six bulk paint samples were collected from suspect LCP observed at the project location. Our sampling procedures in accordance with TO-187 are discussed below:

- Collected bulk samples of suspect LCP using techniques presented in HUD guidelines. In addition, the painted areas were evaluated for evidence of deterioration such as flaking or cracking.
- Relinquished bulk LCP samples under chain-of-custody protocol to Advanced Technology Laboratories, a California-licensed and Caltrans-approved subcontractor, for lead analysis in accordance with EPA Test Method 6010B. Advanced Technology Laboratories is accredited by the DPH for lead analysis. The laboratory analyses were requested on a 48-hour turnaround time.

Paint sample identification numbers, descriptions, peeling and flaking quantities, and photo references are summarized on Table 2. Approximate sample locations are presented on Figure 2. Materials represented by the samples collected are shown in the attached photographs.

4.0 INVESTIGATIVE RESULTS

4.1 Asbestos Analytical Results

No asbestos was detected in samples of the suspect materials collected during our survey. A summary of the analytical laboratory test results for asbestos is presented on Table 1. Reproductions of the laboratory reports and chain-of-custody documentation are presented in Appendix A.

4.2 Paint Analytical Results

Samples representing intact yellow traffic striping exhibited total lead concentrations of 2,300 and 92 mg/kg, and a composite TCLP lead concentration of 0.80 mg/l.

Samples representing intact white traffic striping exhibited total lead concentrations of 3.6 and 36 mg/kg.

Samples representing intact graffiti exhibited total lead concentrations of 8.0 and 6.0 mg/kg.

A summary of the analytical laboratory test results for paint is presented on Table 2. Reproductions of the laboratory reports and chain-of-custody documentation are presented in Appendix A.

5.0 RECOMMENDATIONS

Based on our findings, we recommend the following:

5.1 Asbestos

Since no asbestos was detected in samples collected during our survey, the Cal/OSHA asbestos standard does not apply for planned activities. In addition, demolition debris would not be considered a California hazardous waste based on asbestos content. However, written notification to U.S. EPA Region IX and the California Air Resources Board is required ten working days prior to commencement of *any* demolition activity (whether asbestos is present or not).

5.2 Lead Paint

Yellow traffic striping represented by samples collected during our survey would be classified as California hazardous based on lead content if it is stripped, blasted, or otherwise separated from the substrate.

White traffic striping and graffiti represented by samples collected during our survey would not be classified as California or Federal hazardous based on lead content.

We recommend that all paints at the project location be treated as lead-containing for purposes of determining the applicability of the Cal/OSHA lead standard during any future maintenance, renovation, and demolition activities. This recommendation is based on 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.

6.0 REPORT LIMITATIONS

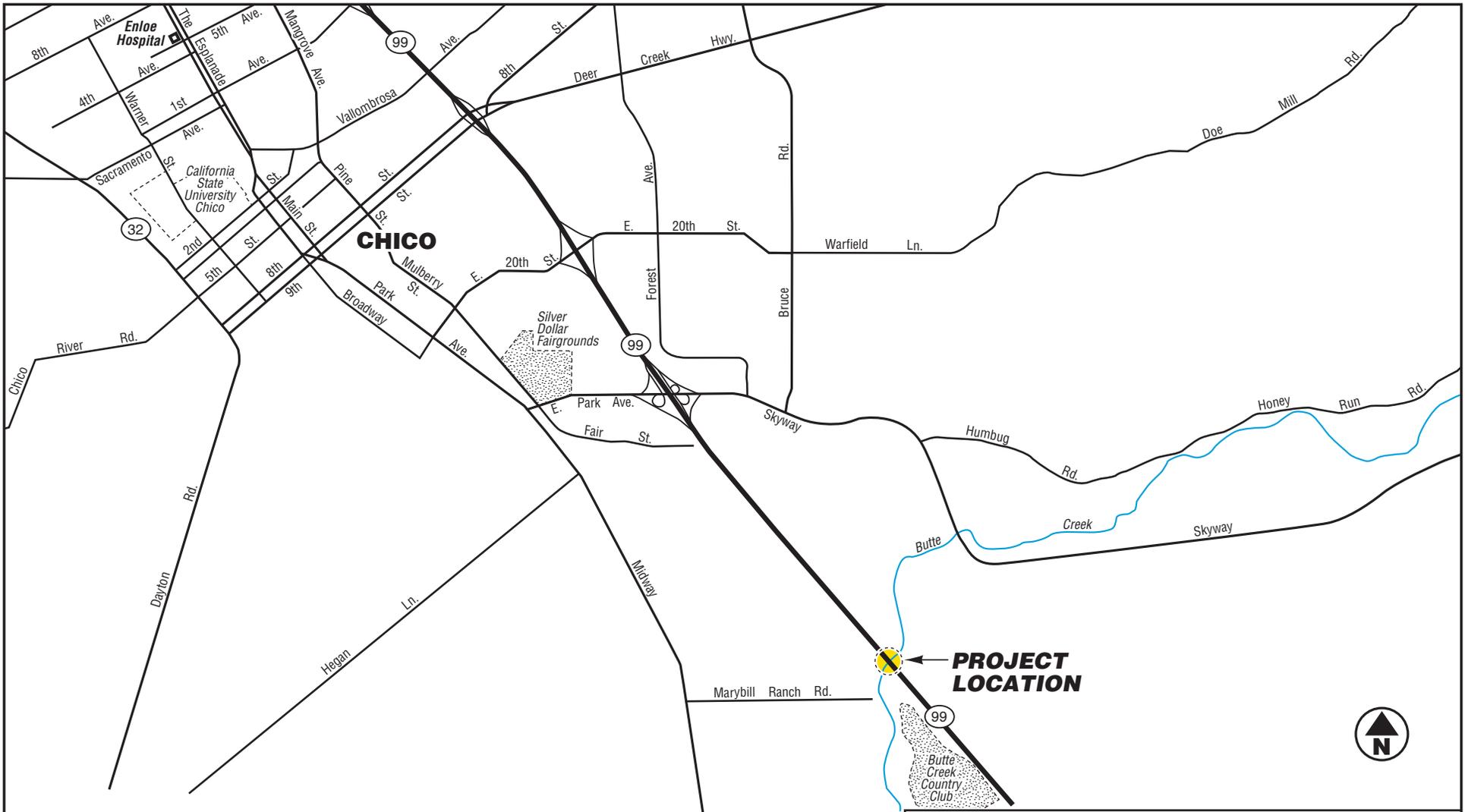
The asbestos and LCP survey was conducted in conformance with generally accepted standards of practice for identifying and evaluating asbestos and LCP in structures. The survey addressed only the structures identified in Section 1.1. Due to the nature of structure surveys, asbestos and LCP use, and laboratory analytical limitations, some ACM or LCP at the project location may not have been identified. Spaces such as cavities, voids, crawlspaces, and pipe chases may have been concealed to our investigator. Previous 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 ACM with indistinguishable non-ACM. Asbestos and/or LCP may exist in areas of the structures that were not accessible or sampled in conjunction with this TO.

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 ACM and/or LCP 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 Caltrans. The information contained herein is only valid as of the date of the report and will require an update to reflect additional information obtained.

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

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



| | |
|--|----------|
|  GEOCON CONSULTANTS, INC. <small>3160 GOLD VALLEY DR - SUITE 800 - RANCHO CORDOVA, CA 95742 PHONE 916.852.9118 - FAX 916.852.9132</small> | |
| Butte Creek Bridges | |
| 03-BUT-99 PM PM 28.721 to PM 28.782 Butte County, California | |
| GEOCON Proj. No. S9300-06-187 Task Order No. 187, E-FIS 03 0000 0509 1 (EA 03-3E6201) Caltrans Contract 03A1368 | |
| VICINITY MAP | |
| April 2012 | Figure 1 |



LEGEND:

- Approximate Asbestos Sample Location
- ▲ Approximate Paint Sample Location



GEOCON
CONSULTANTS, INC.

3160 GOLD VALLEY DR - SUITE 800 - RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 - FAX 916.852.9132

Butte Creek Bridges

03-BUT-99 PM PM 28.721 to PM 28.782
Butte County, California

GEOCON Proj. No. S9300-06-187
Task Order No. 187,
E-FIS 03 0000 0509 1 (EA 03-3E6201)
Caltrans Contract 03A1368

SITE PLAN

April 2012

Figure 2



Photo 1 – Butte Creek Bridges (12-0126L/R) in Butte County, California



Photo 2 – Abutment expansion joint (Bridge 12-0126L)



Photo 3 – Abutment expansion joint (Bridge 12-0126R)



Photo 4 – Bridge deck and non-suspect joint seals



Photo 5 – Bridge piers



Photo 6 – Bridge pier and box girder system (Bridge 12-0126L)



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CONSULTANTS, INC.

3160 GOLD VALLEY DR – SUITE 800 – RANCHO CORDOVA, CA 95742
PHONE 916.852.9118 – FAX 916.852.9132

PHOTOGRAPHS 4, 5, & 6

Caltrans, Contract 03A1638, Task Order No.187

E-FIS 03 0000 0509 1, 03-BUT-99

S9300-06-187

(EA 03-3E6201)

April 2012

TABLE 1
SUMMARY OF ASBESTOS ANALYTICAL RESULTS
BUTTE CREEK BRIDGES
CALTRANS CONTRACT 03A1368, TASK ORDER NO.187, E-FIS 03 0000 0509 1 (EA 03-3E6201), 03-BUT-99
BUTTE COUNTY, CALIFORNIA

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

| Sample No. | Description of Material | Approximate Quantity | Friable | Site Photo | Asbestos Content |
|------------|---|----------------------|---------|------------|------------------|
| 1A 1B | Expansion joint fill material (Bridge 12-0126L) | NA | NA | 2 | ND ND |
| 2A 2B | Expansion joint fill material (Bridge 12-0126R) | NA | NA | 3 | ND ND |

Notes:

NA = Not applicable (no asbestos detected)

ND = Not detected

TABLE 2
SUMMARY OF PAINT ANALYTICAL RESULTS - TOTAL AND SOLUBLE LEAD
BUTTE CREEK BRIDGES
CALTRANS CONTRACT 03A1368, TASK ORDER NO.187, E-FIS 03 0000 0509 1 (EA 03-3E6201), 03-BUT-99
BUTTE COUNTY, CALIFORNIA

| Paint Sample No. | Paint Description | Approximate Quantity Peeling/Flaking | Site Photos | Total Lead (mg/kg) | TCLP Lead (mg/l) |
|------------------|-------------------------|--------------------------------------|------------------|--------------------|------------------|
| P1A | Yellow traffic striping | Intact | 4 | 2,300 | 0.80 |
| P1B | | | | 92 | |
| P2A | White traffic striping | Intact | 4 | 3.6 | --- |
| P2B | | | | 36 | |
| P3A | Graffiti | Intact | 1, 2, 3, 5 and 6 | 8.0 | --- |
| P3B | | | | 6.0 | |

Notes:

mg/kg = milligrams per kilogram (EPA Test Method 6010)N

TCLP = Toxicity Characteristic Leaching Procedure (EPA Test Method 1311/7420)

mg/l = milligrams per liter

--- = Not analyzed

APPENDIX

A



EMSL Analytical, Inc

2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577

Phone/Fax: (510) 895-3675 / (510) 895-3680

<http://www.emsl.com>

sanleandrolab@emsl.com

| | |
|-------------|--------------|
| EMSL Order: | 091202829 |
| CustomerID: | GECN21 |
| CustomerPO: | S9300-06-187 |
| ProjectID: | S9300-06-** |

Attn: **Dave Watts**
Geocon Consultants, Inc.
6671 Brisa Street

Livermore, CA 94550

Project: **S9300-06-187 / BUTTE CREEK BRIDGES**

Phone: (925) 371-5900
 Fax: (925) 371-5915
 Received: 03/06/12 10:00 AM
 Analysis Date: 3/6/2012
 Collected: 3/5/2012

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

| Sample | Description | Appearance | Non-Asbestos | | Asbestos |
|---|-----------------|---|---------------|-------------------------|---------------|
| | | | % Fibrous | % Non-Fibrous | % Type |
| 1A-Joint Fill Material <i>091202829-0001</i> | EXPANSION JOINT | Brown/Black Fibrous Heterogeneous | 60% Cellulose | 40% Non-fibrous (other) | None Detected |
| 1B-Joint Fill Material <i>091202829-0002</i> | EXPANSION JOINT | Brown/Black Fibrous Homogeneous | 60% Cellulose | 40% Non-fibrous (other) | None Detected |
| 2A-Joint Fill Material <i>091202829-0003</i> | EXPANSION JOINT | Gray Fibrous Heterogeneous | 60% Cellulose | 40% Non-fibrous (other) | None Detected |
| 2B-Joint Fill Material <i>091202829-0004</i> | EXPANSION JOINT | Gray Fibrous Heterogeneous | 60% Cellulose | 40% Non-fibrous (other) | None Detected |

Analyst(s)

Jorge Leon (4)

Baojia Ke, 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. None Detected = <1%
 Samples analyzed by EMSL Analytical, Inc San Leandro, CA NVLAP Lab Code 101048-3, MA AA000201, WA C2007

Initial report from 03/06/2012 11:57:53



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING

Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

091202829

EMSL ANALYTICAL, INC.
2235 POLVOROSA DR., STE. 230
SAN LEANDRO, CA 94577
PHONE: (510) 895-3675
FAX: (510) 895-3680

| | | | |
|---|---------------------------|---|---------------------------|
| Company: GEOCON | | EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different <small>If Bill to is Different note instructions in Comments**</small> | |
| Street: 6671 BRISA ST. | | <small>Third Party Billing requires written authorization from third party</small> | |
| City: LIVERMORE | State/Province: CA | Zip/Postal Code: 94550 | Country: USA |
| Report To (Name): D. WATTS | | Fax #: 925-371-5915 | |
| Telephone #: 925-371-5900 | | Email Address: WATTS@GEOCONINC.COM | |
| Project Name/Number: BUTTE CRK BRIDGES / 59300-06-187 | | | |
| Please Provide Results: <input type="checkbox"/> Fax <input type="checkbox"/> Email | | Purchase Order: / | U.S. State Samples Taken: |

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 hours/6 hours, 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 <input type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA PLM - Bulk (reporting limit) <input checked="" type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NIOSH 9002 (<1%) | TEM - Air <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 TEM - Bulk <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 TEM - Water: EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking | TEM- Dust <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167) Soil/Rock/Vermiculite <input type="checkbox"/> PLM CARB 435 - A (0.25% sensitivity) <input type="checkbox"/> PLM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - B (0.1% sensitivity) <input type="checkbox"/> TEM CARB 435 - C (0.01% sensitivity) <input type="checkbox"/> EPA Protocol (Semi-Quantitative) <input type="checkbox"/> EPA Protocol (Quantitative) Other: <input type="checkbox"/> |
|---|--|--|

Check For Positive Stop - Clearly Identify Homogenous Group

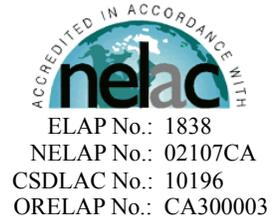
| | |
|--------------------------------|--|
| Samplers Name: D. WATTS | Samplers Signature: <i>[Signature]</i> |
|--------------------------------|--|

| Sample # | Sample Description | Volume/Area (Air) HA # (Bulk) | Date/Time Sampled |
|----------|-------------------------------|----------------------------------|----------------------|
| 1A | EXPANSION JOINT FILL MATERIAL | N/A | 5 MAR 2012 |
| 1B | ↓ | ↓ | ↓ |
| 2A | ↓ | ↓ | ↓ |
| 2B | ↓ | ↓ | ↓ |
| | | | |
| | | | |
| | | | |
| | | | |

| | |
|---|---|
| Client Sample # (s): 1A - 2B | Total # of Samples: (4) |
| Relinquished (Client): <i>[Signature]</i> | Date: 6 MAR 2012 Time: 0958 |
| Received (Lab): <i>[Signature]</i> | Date: 6 MAR 2012 Time: 0954 |
| Comments/Special Instructions: | |

March 09, 2012

Dave Watts
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax: (925) 371-5915



Re: ATL Work Order Number : 1200820
Client Reference : BUTTE CRK BRIDGES, S9300-06-187

Enclosed are the results for sample(s) received on March 07, 2012 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. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Geocon Consultants, Inc.
6671 Brisa Street
Livermore , CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187
Report To : Dave Watts
Reported : 03/09/2012

SUMMARY OF SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|------------|---------------|---------------|
| P1A | 1200820-01 | Paint Chip | 3/05/12 12:19 | 3/07/12 9:00 |
| P1B | 1200820-02 | Paint Chip | 3/05/12 12:44 | 3/07/12 9:00 |
| P2A | 1200820-03 | Paint Chip | 3/05/12 12:51 | 3/07/12 9:00 |
| P2B | 1200820-04 | Paint Chip | 3/05/12 13:18 | 3/07/12 9:00 |
| P3A | 1200820-05 | Paint Chip | 3/05/12 13:21 | 3/07/12 9:00 |
| P3B | 1200820-06 | Paint Chip | 3/05/12 13:27 | 3/07/12 9:00 |



Geocon Consultants, Inc.
6671 Brisa Street
Livermore , CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187
Report To : Dave Watts
Reported : 03/09/2012

Total Metals by ICP-AES EPA 6010B

Analyte: Lead

Analyst: KK/HF

| Laboratory ID | Client Sample ID | Result | Units | PQL | MDL | Dilution | Batch | Prepared | Date/Time | Notes |
|---------------|------------------|-------------|-------|-----|-----|----------|---------|------------|----------------|-------|
| | | | | | | | | | Analyzed | |
| 1200820-01 | P1A | 2300 | mg/kg | 2.0 | NA | 1 | B2C0196 | 03/08/2012 | 03/09/12 10:31 | |
| 1200820-02 | P1B | 92 | mg/kg | 2.0 | NA | 1 | B2C0196 | 03/08/2012 | 03/09/12 10:33 | |
| 1200820-03 | P2A | 3.6 | mg/kg | 2.0 | NA | 1 | B2C0196 | 03/08/2012 | 03/09/12 10:34 | |
| 1200820-04 | P2B | 36 | mg/kg | 2.0 | NA | 1 | B2C0196 | 03/08/2012 | 03/09/12 10:37 | |
| 1200820-05 | P3A | 8.0 | mg/kg | 6.7 | NA | 1 | B2C0196 | 03/08/2012 | 03/09/12 10:42 | |
| 1200820-06 | P3B | 6.0 | mg/kg | 4.0 | NA | 1 | B2C0196 | 03/08/2012 | 03/09/12 10:44 | |



Geocon Consultants, Inc.
 6671 Brisa Street
 Livermore, CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187
 Report To : Dave Watts
 Reported : 03/09/2012

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 B2C0196 - EPA 3050B | | | | | | | | | |
| Blank (B2C0196-BLK1) | | | | | | | | | |
| | | | | | | | Prepared: 3/8/2012 | Analyzed: 3/9/2012 | |
| Lead | ND | 1.0 | | | | | NR | | |
| LCS (B2C0196-BS1) | | | | | | | | | |
| | | | | | | | Prepared: 3/8/2012 | Analyzed: 3/9/2012 | |
| Lead | 51 | 1.0 | 50.0 | | | 101 80 - 120 | | | |
| Duplicate (B2C0196-DUP1) | | | | | | | | | |
| | | | | | | | Prepared: 3/8/2012 | Analyzed: 3/9/2012 | |
| Lead | 220 | 1.0 | | 260 | NR | | 17.0 | 20 | |
| Matrix Spike (B2C0196-MS1) | | | | | | | | | |
| | | | | | | | Prepared: 3/8/2012 | Analyzed: 3/9/2012 | |
| Lead | 340 | 1.0 | 125 | 260 | 67.9 | 46 - 116 | | | |
| Matrix Spike Dup (B2C0196-MSD1) | | | | | | | | | |
| | | | | | | | Prepared: 3/8/2012 | Analyzed: 3/9/2012 | |
| Lead | 360 | 1.0 | 125 | 260 | 78.4 | 46 - 116 | 3.75 | 20 | |



Geocon Consultants, Inc.

6671 Brisa Street

Livermore , CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187

Report To : Dave Watts

Reported : 03/09/2012

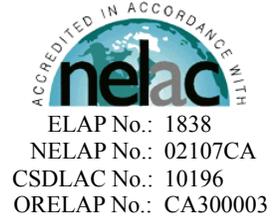
Notes and Definitions

ND Analyte not detected at or above reporting limit
PQL Practical Quantitation Limit
MDL Method Detection Limit
NR Not Reported
RPD Relative Percent Difference



March 13, 2012

Dave Watts
Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Tel: (925) 371-5900
Fax: (925) 371-5915



Re: ATL Work Order Number : 1200820
Client Reference : BUTTE CRK BRIDGES, S9300-06-187

Enclosed are the results for sample(s) received on March 07, 2012 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,

A handwritten signature in black ink, appearing to read "Eddie Rodriguez", with a small "Er" below it.

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. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

3275 Walnut Avenue, Signal Hill, CA 90755 • Tel: 562-989-4045 • Fax: 562-989-4040
www.atlglobal.com



Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187
Report To : Dave Watts
Reported : 03/13/2012

SUMMARY OF SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|---------------------|---------------|------------|--------------|---------------|
| Composite P1A & P1B | 1200820-07 | Paint Chip | 3/05/12 0:00 | 3/07/12 9:00 |



Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187
Report To : Dave Watts
Reported : 03/13/2012

TCLP Lead by AA (Direct Aspiration) EPA 7420

Analyte: Lead

Analyst: SB

| Laboratory ID | Client Sample ID | Result | Units | PQL | MDL | Dilution | Batch | Prepared | Date/Time Analyzed | Notes |
|---------------|---------------------|-------------|-------|------|-----|----------|---------|------------|--------------------|-------|
| 1200820-07 | Composite P1A & P1B | 0.80 | mg/L | 0.50 | NA | 1 | B2C0313 | 03/13/2012 | 03/13/12 14:03 | |



Geocon Consultants, Inc.
 6671 Brisa Street
 Livermore, CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187
 Report To : Dave Watts
 Reported : 03/13/2012

QUALITY CONTROL SECTION

TCLP Lead by AA (Direct Aspiration) EPA 7420 - Quality Control

| Analyte | Result (mg/L) | PQL (mg/L) | Spike Level | Source Result | % Rec % Rec | % Rec Limits | RPD | RPD Limit | Notes |
|--|------------------|---------------|----------------|------------------|---|-----------------|------|--------------|-------|
| Batch B2C0313 - EPA 3010A | | | | | | | | | |
| Blank (B2C0313-BLK1) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | ND | 0.50 | | | | | | | NR |
| Blank (B2C0313-BLK2) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | ND | 0.50 | | | | | | | NR |
| LCS (B2C0313-BS1) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | 1.1 | 0.50 | 1.00 | | 114 | 80 - 120 | | | |
| Duplicate (B2C0313-DUP1) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | 0.16 | 0.50 | | ND | | | | | 20 |
| Matrix Spike (B2C0313-MS1) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | 2.9 | 0.50 | 2.50 | ND | 115 | 80 - 120 | | | |
| Matrix Spike Dup (B2C0313-MSD1) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | 2.8 | 0.50 | 2.50 | ND | 112 | 80 - 120 | 2.21 | | 20 |
| Batch S2C0154 - B2C0313 | | | | | | | | | |
| Instrument Blank (S2C0154-IBL1) | | | | | Prepared: 3/13/2012 Analyzed: 3/13/2012 | | | | |
| Lead | ND | 0.50 | | | | | | | NR |



Geocon Consultants, Inc.

6671 Brisa Street

Livermore , CA 94550

Project Number : BUTTE CRK BRIDGES, S9300-06-187

Report To : Dave Watts

Reported : 03/13/2012

Notes and Definitions

ND Analyte not detected at or above reporting limit
PQL Practical Quantitation Limit
MDL Method Detection Limit
NR Not Reported
RPD Relative Percent Difference

Diane Galvan

From: David Watts [watts@geoconinc.com]
Sent: Friday, March 09, 2012 4:48 PM
To: Diane Galvan
Subject: RE: Results/EDD/Invoice - BUTTE CRK BRIDGES (1200820)

please composite P1A & P1B and run a TCLP on the composite

David Watts
Senior Project Scientist

Please visit our website at <http://www.geoconinc.com>

GEOCON Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
925-371-5900 (office)
925-371-5915 (fax)
925-785-5340 (mobile)
watts@geoconinc.com

GEOTECHNICAL - ENVIRONMENTAL - MATERIALS

San Diego Murrieta Burbank Bakersfield Fresno Sacramento Rocklin Fairfield Livermore Carson City Portland

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Memorandum

*Flex your power!
Be energy efficient!*

To: MS. KELLY HOLDEN
Branch Chief
Bridge Design North
Branch 7

Date: November 15, 2011
File: 03-BUT-99- PM 28.7
Butte Creek (Right) Bridge
(REPLACE)
Br. No. 12-0126R
EA#03-3E6201
EFIS: 0300000509

Attn: Keith Stillmunkes

From: DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Geotechnical Services – MS 5
Office of Geotechnical Design – North

Subject: Foundation Report for Butte Creek (Right) Bridge

Introduction/Scope of Work

Per your request dated December 10, 2010, the Office of Geotechnical Design-North (OGD-N), Branch A has prepared the Foundation Report for the proposed replacement of Butte Creek (Right) Bridge (Br. No. 12-0126R) located on Route 99 at PM 28.7, in Butte County, California, approximately 4 miles south of Chico. The bridge site is plotted on the Location Map (refer to Figure 1). This Foundation Report supercedes the Preliminary Geology and Seismic Recommendations Report dated May 14, 2007.

Our Office has evaluated the site conditions and geology based on a review of the existing As-Built Plans, available geologic literature and mapping, and a subsurface investigation completed during July and August of 2010. With regards to the foundation recommendations provided in this report, elevations are based on the NAVD 88 vertical datum, and horizontal coordinates are based on the NAD 83 horizontal datum, unless otherwise noted.

The following Department of Transportation, Caltrans records and resources were considered during the preparation of the Foundation Report.

- General Plan for Butte Creek Bridge (Replace) (Br. No. 12-0126R) dated July 14, 2011.
- Foundation Plan for Butte Creek Bridge (Replace) (Br. No. 12-0126R) dated October 10, 2011.
- As-Built General Plan for the widening of Butte Creek Bridge (Br. No. 12-0126R) dated January 5, 1991.
- As-Built Foundation Plan for the widening of Butte Creek Bridge (Br. No. 12-0126R) dated January 5, 1991.
- As-Built Log of Test Borings for the widening of Butte Creek Bridge (Br. No. 12-0126R) dated January 5, 1991

- As-Built Pile Details for the widening of Butte Creek Bridge (Br. No. 12-0126R) dated January 5, 1991.
- As-Built General Plan (Earthquake Upgrading-Project 3C) for Butte Creek Bridge (Br. No. 12-0126R) dated March 29, 1984.
- As-Built Structure Plan for Bridge Across Butte Creek (Drawing C-2639-25) for Butte Creek Bridge (Br. No. 12-0126) dated September 11, 1951.
- As-Built Foundation Plan for the Bridge Across Butte Creek Bridge (Br. No. 12-0126) dated January 5, 1991.
- As-Built Log of Test Borings for the Bridge Across Butte Creek Bridge (Br. No. 12-0126R) dated January 5, 1991.
- As-Built Pile Details for the 13 Butte County Bridges dated January 5, 1991.
- Final Hydraulic Report for Butte Creek (Br. No. 12-0126R), dated April 6, 2011 and July 13, 2011.
- Bridge Scour Evaluation – Plan of Action for the Butte Creek Bridge (Br. No. 12-0126R) dated February 7, 2006.
- Bridge Creek Upstream Profile for the Butte Creek Bridge (Br. No. 12-0126R) dated February 15, 1955 to April 3, 2003.
- Bridge Inspection Report for the Butte Creek Bridge (Br. No. 12-0126R) dated January 4, 2007.
- Bridge Inspection Report for the Butte Creek Bridge (Br. No. 12-0126R) dated October 17, 2005.
- Bridge Inspection Report for the Butte Creek Bridge (Br. No. 12-0126R) dated February 1, 2005.
- Bridge Inspection Report for the Butte Creek Bridge (Br. No. 12-0126R) dated September 20, 2004.
- Bridge Inspection Report for the Butte Creek Bridge (Br. No. 12-0126R) dated April 3, 2003.
- Supplementary Bridge Report for the Butte Creek Bridge (Br. No. 12-0126R) dated March 12, 1986.
- Bridge Report for the Butte Creek Bridge (Br. No. 12-0126R) dated February 15, 1955.
- Supplementary Bridge Report for the Butte Creek Bridge (Br. No. 12-0126R) dated January 30, 1956.
- Pile driving records for the widening of the Butte Creek Bridge (Br. No. 12-0126R) dated January 8, 1988.
- Foundation Review for the widening of the Butte Creek Bridge (Br. No. 12-0126R) dated June 25, 1986.

Project Description

The existing bridge was built in 1952, widened in 1989 and seismically retrofitted in 1984. The original structure was built as a five span continuous Reinforced Concrete (RC) four T-girder bridge with RC deck on RC pier walls and open-end seat abutments. Pier 2 and both abutments are on spread footings and the remaining piers are supported on concrete piles. In 1989, the bridge was widened on both sides of the structure with a continuous RC single cell box girder with RC pier walls and an open end diaphragm at Abutment 1 and open end seat abutment at

Abutment 6. A spread footing was used for support at Abutment 6 and driven steel H piles, HP 10x57, were used for support at all other support locations. In 1984, the bridge was seismically retrofitted. From the plans, it appears that the foundations were not retrofitted.

According to the General Plan sheet, the replacement bridge will be a two span continuous cast-in-place/prestressed box girder (4 cells) with a center pier wall and seat type abutments. Rock slope protection (RSP) will be placed at the abutments.

Field Investigation and Testing Program

The Office of Geotechnical Design-North conducted a subsurface investigation during July and August 2010. The subsurface investigation consisted of three mud rotary borings (Nos. R-10-001, R-10-002 and R-10-003). The mud rotary borings were advanced using a self-casing wireline drilling method. The maximum depth reached by the 2010 subsurface investigation was approximately 150.0 feet (elevation 77.7 feet). Sampling was achieved in all borings by utilizing the Standard Penetration Test (SPT) sampler. Selected soil and rock samples were tested in the Caltrans soils laboratory. A summary of the borings drilled during the 2010 subsurface investigation is included below in Table 1.

**Table 1. The 2010 Subsurface Exploration Summary for Butte Creek Bridge
(Br. No. 12-0126R)**

| Boring No. | Completion Date | Drill Rig Type | Hammer Type | Hammer Efficiency (%) | Approx. Ground Surface Elevation (ft) | Boring Depth (ft) |
|------------|-----------------|----------------|---------------|-----------------------|---------------------------------------|-------------------|
| R-10-001 | 7/29/10 | CS-2000 | Diedrich Auto | 93 | 227.7 | 150.0 |
| R-10-002 | 8/12/10 | CS-2000 | Diedrich Auto | 93 | 204.3 | 100.0 |
| R-10-003 | 8/5/10 | CS-2000 | Diedrich Auto | 93 | 228.3 | 149.5 |

Laboratory Testing Program

Laboratory Testing was performed on selected samples of the subsurface materials obtained from the 2010 subsurface investigation. Tests were performed to determine the corrosion and engineering properties of the subsurface materials for the foundation analysis. The corrosion tests results may be found in the Corrosion Evaluation section of this report. In addition to the corrosion tests, the following tests were performed on selected soil samples: particle-size analysis (sieve and hydrometer), moisture content, and Atterberg limits (liquid limit, plastic limit and plasticity index). The following tests were performed on selected rock samples: unconfined compression tests (ASTM D 2938) and point load index tests (ASTM D 5731). Most of the tests were performed in general accordance with American Society for Testing and Materials (ASTM) standards or California Test Methods (CTM).

The rock specimens for this testing were selected at five-foot intervals when possible. Much of the collected core is considered unsuitable for strength testing using the ASTM D 2938 and ASTM D 5731. If a specimen was unsuitable for the unconfined compression test, a point load test was attempted. Not all samples were suitable for point load tests. The volcanic

conglomerate rock contains many cobbles and a few boulder size volcanic clasts in a sandy matrix or a tuffaceous sandy matrix. The rock samples tested included the cobble size clasts, boulder size clasts and the sandy or tuffaceous sandy matrix or a combination of each. Refer to the Log of Test Borings for the site-specific rock and soil data. Laboratory tests results are available upon request.

Site Geology and Subsurface Conditions

Regional Setting and Area Geology

The project site is located within the northeastern section of the Great Valley province. California's Great Valley is a long flat valley, smoothed out between the rugged mountains of the Coast Ranges and the Sierra Nevada. The Great Valley, also known as the Central Valley, is approximately 404 miles long and averages approximately 49.7 miles in width. Most of the surface of the Great Valley is covered by Recent and Pleistocene alluvium. Sediments eroded from the Sierra Nevada and the Coast Ranges (to a lesser extent), are deposited on the floodplains and bottomlands as the mountain streams greatly decrease their velocity in the long flat valley. Rising dramatically from the relatively flat floor of the Sacramento Valley, the Sutter Buttes are the major topographic feature of the otherwise nearly flat Great Valley. (Harden, 1998). At this site location, the sediments of the Great Valley province are interbedded within the Tuscan formation. The Tuscan formation is Pliocene in age and is the oldest volcanic unit related to formation of the Cascade Range province. The Tuscan forms a ramplike transition more than sixty miles long between Lassen Peak and the Sacramento Valley. (Norris and Webb, 1976).

Based on the Geologic Map of the Chico Sheet Quadrangle, scale 1:250,000, compiled by G.J. Saucedo and D.L. Wagner, 1992, California Geological Survey (formerly the Division of Mines and Geology) indicates the site is mapped as consisting of Quaternary Modesto Formation-Alluvium (Qm), Pleistocene Red Bluff Formation-coarse red gravel, sand and silts (Qrb) and the Pliocene Tuscan Formation-lahars, volcanoclastic sediments, and tuff (Ptu) (Figure 2). The Tuscan at this site is generally considered to be a volcanic mudflow deposit.

Currently at the site and near the proposed Pier 2 location, there were many cobbles and some boulders visible on the surface of the channel. The observed cobbles ranged in size from 3 to 12 inches, are slightly weathered and fresh, and are hard and very hard. The observed boulders ranged in size from 1 to 2 feet, are fresh and slightly weathered, and are hard and very hard.

Subsurface Conditions

The 2010 subsurface investigation revealed that the materials encountered at the site generally consist of fill, alluvium and sedimentary/igneous rock. The fill material was encountered near the Abutment 1 and 3 locations. The fill material is approximately 11 feet thick near the proposed Abutment 1 location and approximately 12 feet thick near the proposed Abutment 3 location. The fill material generally consists of medium dense well graded gravel with clay, sand and cobbles, and well graded gravel with sand. The alluvium consists of both cohesive and granular material and is approximately 41 feet thick near the proposed Abutment 1 location and approximately 17 feet thick near the proposed Pier 2 location and approximately 42 feet thick

near the proposed Abutment 3 location. The cohesive alluvium material generally consists of very soft and soft silty clay with sand and very stiff sandy lean clay. The granular alluvium material consists of medium dense clayey sand with gravel, dense and very dense well graded and poorly graded sand and gravel, and cobbles in a medium dense clayey and sandy matrix. The cobbles were slightly weathered to fresh, and very hard and hard.

Underlying the alluvium was sedimentary/igneous rock consisting of interbedded volcanic conglomerate, volcanic sandstone and volcanic siltstone layers. The volcanic sandstone and siltstone was moderately to slightly weathered, and soft to moderately soft with some moderately hard layers. The volcanic conglomerate generally consisted of very hard and hard, subrounded to subangular volcanic clasts (cobbles and boulders) within a fresh, very soft (poorly indurated/soil-like) to very hard sand, gravelly sand and or tuffaceous sandy matrix. The sedimentary/igneous rock extends to the maximum depth explored of 150.0 feet, an elevation of 77.7 feet.

According to the As-Built LOTBs, a foundation investigation was completed in 1951 for the original structure and in 1985 for the widening of the original structure. The 1951 investigation consisted of five one-inch diameter sampler borings that extended to a maximum depth of approximately twenty-two feet, an approximate elevation of 197 feet. The 1985 investigation consisted of three 3-inch diameter rotary borings and two 2¼-inch cone penetrometer borings that extended to a maximum depth of approximately 26 feet, an approximate elevation of 176 feet. According to the As-Built LOTBs, the site is underlain by a sequence of Quaternary alluvium to approximately elevation 187 feet. Below elevation 187 feet are Pliocene volcanic and pyroclastic deposits consisting predominately of tuffs and mudflows interpreted as the Tuscan Formation.

Groundwater

During the 2010 subsurface investigation, two borings were installed as open stand pipe piezometers. Groundwater elevation was measured in Boring R-10-001 on August 5, 2010 and April 21, 2011. Groundwater elevation was measured in Boring R-10-003 on April 21, 2011. Groundwater observations were not made in Boring R-10-002. This boring was immediately backfilled upon the completion of drilling. Groundwater levels indicated in this report and shown on the LOTB sheets reflect the measured groundwater level in the boring on the specified date. Table 2 lists the elevations of the observed water level on August 5, 2010 and April 21, 2011.

Table 2. Groundwater Measurement Data

| Piezometer Location | Boring Number | Groundwater Elevation on 8/05/10 (ft) | Groundwater Elevation on 4/21/11 (ft) |
|---------------------|---------------|---------------------------------------|---------------------------------------|
| Abut 1 | R-10-001 | 144.3 | 144.8 |
| Abut 3 | R-10-003 | Not measured | 203.4 |

Groundwater was measured during the 1951 subsurface investigation at elevation 205.9 feet. The high water elevation in the creek channel was measured at elevation 222.2 ft (U.S.E.D. Datum) and 219.2 ft (C.H.C. Datum). Groundwater was not encountered during the 1985 subsurface investigation and instead the water level in Butte Creek during the investigation was included on the LOTB at elevation 198.8+/- feet.

Groundwater surface elevations are subject to seasonal fluctuations and may be encountered at higher or lower elevations depending on seasonal conditions and water levels in the river, at the time of construction.

Scour Evaluation

According to the Bridge Inspection Reports, scour has been occurring at the Butte Creek Bridge (Br. No. 12-0126R) since 1956. The Supplementary Bridge Report dated January 30, 1956 stated there has been some additional minor scour of the streambank at Span 2. The Supplementary Bridge Report dated March 12, 1986 stated, "the channel upstream of the bridge has begun to extend to the southerly edge and it is felt that further erosion will lead the main flow of the channel into the number one span. In the future, this will most likely cause severe scour of Pier 2 and possible undermining of the Abutment 1 footing."

According to the Bridge Inspection Report dated April 3, 2003, a cross-section was completed in June 29, 1999 that showed the bridge was scour critical and the bridge was changed from a code 6 to a 3 in the SMART system. Code 3 is defined as "bridge foundations determined to be unstable for calculated scour conditions: scour below spread-footing base or pile tips." The bridge became scour critical because of channel degradation and migration. The channel bed degraded approximately 8.0 feet since 1963 and exposed the footings at Bents 2, 3 and 4. Also the thalweg had migrated to Pier 2 and caused undermining of this pier.

According to the Bridge Scour Evaluation-Plan of Action report completed on February 7, 2006, the bridge is scour critical due to channel degradation and migration. The potential scour elevation of 185 feet was considered to be below the bottom of footing elevation of 198 feet of the original structure. Scour analysis shows that the potential scour is at elevation 185 feet for Pier 2 and at 193.7 feet for Pier 3. Pier 2 is on spread footings and Pier 3 is on piles. According to the Foundation Evaluation of the Scour Critical Program report by the Office of Geotechnical Support dated June 18, 2001, it was determined that the earth materials are susceptible to scour below the spread footing elevation at Pier 2 of the 1952 original bridge. The piles at Pier 3 of the original 1952 bridge and at the 1989 widening of Pier 2 are predominately end bearing and are considered to be axially stable. The bridge is still considered scour critical even though piles exist on the widened section.

The Foundation Recommendations report for the widening of the structure dated January 28, 1986 stated that during a field survey of the existing bridge, the tops of the pile caps at Bents 3 and 4 were observed. It was recommended that further erosion of the material around the pile cap should be prevented.

Structure Hydraulics and Hydrology completed a Final Hydraulic Report on April 6, 2011 and July 13, 2011. According to the reports, local pier scour for Bent 2 is anticipated at 4.8 feet in

depth (elevation of 191.4 feet) and the degradation scour depth was considered to be 4.5 feet (elevation of 191.7 feet). The report also stated that both contraction and abutment scour were determined to be negligible for Butte Creek.

A meeting was held on July 20, 2011 between Structure Hydraulics, Structure Design and Geotechnical Design to discuss the scour potential at the site. The scour anticipated at the proposed Pier 2 location is at elevation 186.9 feet which could expose a shallow foundation reducing the capacity, so deep foundations are recommended for support at the proposed Pier 2 location.

For further information, refer to the Final Hydraulics Report for the Butte Creek (Right) Bridge (Br. No. 12-0126R) dated April 6, 2011 and July 13, 2011, completed by Structure Hydraulics and Hydrology Branch.

Corrosion Evaluation

Composite soil samples were collected from Borings R-10-001, R-10-002 and R-10-003 drilled during the 2010 subsurface investigation. The Office of Testing and Technology Services, Corrosive Technology Branch tested the composite samples for corrosive potential. The Corrosion Technology Branch considers a site to be corrosive if one or more of the following conditions exist for the representative soil or water samples collected at the site: chloride concentration is 550 ppm or greater, sulfate concentration is 2000 ppm or greater, or the pH is 5.5 or less. The minimum resistivity serves only as an indicator parameter for the possible presence of soluble salts and is not used to define a site as being corrosive. It is the practice of the Corrosion Technology Branch that if the minimum resistivity of the sample is greater than 1000 ohm-cm, the sample is considered to be non-corrosive and testing to determine the sulfate and chloride content is not performed.

The results of the laboratory tests determined that the composite samples were considered to be non-corrosive at this site. Refer to Table 3 for specific test results.

Table 3. Corrosion Test Summary of the Composite Samples for Butte Creek Right Replace (Br. No. 12-00126R)

| SIC Corrosion Number | Nearby Support Location | Boring Number | Sample Depth (ft) | pH | Minimum Resistivity (ohm-cm) | Chloride Content (ppm) | Sulfate Content (ppm) |
|----------------------|-------------------------|---------------|-------------------|------|------------------------------|------------------------|-----------------------|
| C702251 | Proposed Abutment 1 | R-10-001 | 0.0-5.0 | 7.90 | 3458 | N/A | N/A |
| C702254 | Proposed Pier 2 | R-10-002 | 0-15.0 | 7.12 | 2653 | N/A | N/A |
| C702252 | Proposed Abutment 3 | R-10-003 | 0.0-10.0 | 6.73 | 3987 | N/A | N/A |
| C702253 | Proposed Abutment 3 | R-10-003 | 31.0-39.5 | 6.75 | 2156 | N/A | N/A |

Seismic Recommendations

Based on the Caltrans 2009 Seismic Design Procedure, the nearest active fault to the site is the Great Valley Fault 1 (Fault ID No. 20) with M_{max} of 6.7. The fault is located west of the bridge site, and the rupture distance to the fault plane from the bridge site is estimated to be 28 miles. The fault is referred to as a reverse fault.

Based on the recent 2011 Log of Test Borings, a V_{s30} (average shear wave velocity for the top approximate 100 feet of soil) was estimated by using the SPT blow counts and the correlation formulas to be 1200 feet /second.

Using the above shear wave velocity, the ground motion that is generated from the Great Valley Fault 1 is less than both the probabilistic and statewide minimum ground motion requirements. Therefore the attached recommended Acceleration Response Spectrum (ARS) curve is an envelope of the probabilistic and the minimum requirements.

Please note that the probabilistic method is based on the USGS 5% probability of exceedance in 50 years with a 975 year return period. Also, the spectral acceleration as shown on the curve is the higher of the two aforementioned methods. The peak ground acceleration is 0.22g as shown in the attached curve.

The liquefaction analysis based on the encountered materials indicates minimal potential for liquefaction during an earthquake event.

The potential for surface rupture at the site due to fault movement is considered insignificant since there are no known faults projecting towards or passing directly through the project site.

Please contact Reza Mahallati at 916-227-1033 if additional information is needed concerning the seismic recommendations provided in this report.

As-Built Foundation Data

The 1952 As-Built records for the original Butte Creek Bridge (Br. No. 12-0126R) indicate that the bridge foundations consist of spread footings at Abutment 1, Pier 2 and Abutment 6 locations. The bridge foundations at Pier 3, Pier 4, and Pier 5 consist of driven precast concrete piles, "Alt. A" with a design load of 32 tons driven to a bearing value of 35 tons.

A summary of the As-Built existing foundation data for the original structure is presented in Tables 4 and 5.

**Table 4. As-Built Spread Footing Data for the Original Butte Creek Bridge
 (Br. No. 12-0126R)**

| Support Location | Allowable Soil Pressure ⁽¹⁾ (tsf) | Design Soil Pressure ⁽¹⁾ (tsf) | Bottom of Footing Elevation ⁽²⁾ (ft) |
|------------------|---|--|--|
| Abutment 1 | 4.0 | 4.0 | 209.0 |
| Pier 2 | 4.0 | 4.0 | 198.0 |
| Abutment 6 | 4.0 | 4.0 | 212.0 |

Notes:

1. Allowable Soil Pressure and Design Soil Pressure were obtained from the Bridge Across Butte Creek Abutments Plan dated September 11, 1951.
2. Bottom of Footing Elevations obtained from the Bridge Across Butte Creek Structure Plan and Foundation Plan dated September 11, 1951.

Table 5. As-Built Pile Data for the Original Butte Creek Bridge (Br. No. 12-0126R)

| Support Location | Pile Type | Design Load ⁽¹⁾ (tons) | Bottom of Pile Cap Elevation ⁽¹⁾ (ft) | Average "As-Built" Pile Tip Elevation ⁽¹⁾ (ft) |
|------------------|--------------------------------|--------------------------------------|---|---|
| Pier 3 | Driven Concrete Piles "Alt. A" | 32 | 200 | 187.8 |
| Pier 4 | Driven Concrete Piles "Alt. A" | 32 | 205 | 186.2 |
| Pier 5 | Driven Concrete Piles "Alt. A" | 32 | 205 | 187.5 |

Notes:

1. Bottom of Pile Cap Elevations and the Average Pile Tip Elevations were obtained from the General Plan dated September 11, 1951.
2. The Pile Type and Design Load was derived from the 13 Butte County Bridges Pile Details sheet dated September 11, 1951.

The 1991 As-Built records for the widening of the original Butte Creek Bridge (Br. No. 12-0126R) indicate that the new bridge foundations at Abutment 1, Pier 2, Pier 3, Pier 4 and Pier 5 consisted of driven steel 10X57 "H" piles. The bridge foundation for the widening at Abutment 6 is supported on a spread footing.

A summary of the As-Built existing foundation data for the widening of the original structure is presented in Tables 6 and 7.

**Table 6. As-Built Spread Footing Data for the widening of the original Butte Creek Bridge
 (Br. No. 12-0126R)**

| Support Location | Allowable Soil Pressure ⁽¹⁾ (tsf) | Design Soil Pressure ⁽¹⁾ (tsf) | Bottom of Footing Elevation ⁽²⁾ (ft) |
|------------------|---|--|--|
| Abutment 6 | 4.0 | 4.0 | 212.0 |

Notes:

1. Allowable Bearing Pressure was obtained from the Foundation Recommendations report dated January 28, 1986.
2. Bottom of Footing Elevations obtained from the Structure Plan and Foundation Plan dated January 15, 1991.

**Table 7. As-Built Pile Data for the widening of the original Butte Creek Bridge
 (Br. No. 12-0126R)**

| Support Location | Pile Type | Design Load ⁽¹⁾ (tons) | Bottom of Pile Cap Elevation ⁽¹⁾ (ft) | "As-Built" Maximum Pile Tip Elevation ⁽¹⁾ (ft) | "As-Built" Average Pile Tip Elevation ⁽¹⁾ (ft) | "As-Built" Minimum Pile Tip Elevation ⁽¹⁾ (ft) | "As-Built" Specified Pile Tip Elevation ⁽¹⁾ (ft) |
|------------------|-----------------------------|--------------------------------------|---|--|--|--|--|
| Abutment 1 | Steel "H" Piles HP 10X57 | 70 | 216.5 | 194.5 | 188.0 | 184.9 | 205.0 |
| Pier 2 | Steel "H" Piles HP 10X57 | 70 | 197.0 | 187.7 | 185.4 | 183.1 | 185.0 |
| Pier 3 | Steel "H" Piles HP 10X57 | 70 | 195.5 | 186.5 | 185.7 | 185.3 | 182.0 |
| Pier 4 | Steel "H" Piles HP 10X57 | 70 | 201.0 | 183.6 | 181.2 | 179.9 | 181.0 |
| Pier 5 | Steel "H" Piles HP 10X57 | 70 | 205.0 | 183.9 | 181.2 | 179.1 | 182.0 |

Notes:

- 1) *Design Loads, Bottom of Pile Cap Elevations, Estimated Pile Tip Elevations, Minimum Pile Tip Elevations, Average Pile Tip Elevations, and Maximum Pile Tip Elevations obtained from the Foundation Report dated January 28, 1986 and the General Plan dated January 15, 1991.*

According to the Foundation Recommendations report for the widening of the original structure dated January 28, 1986, a thirty-day settlement period was specified for the embankment. The Resident Engineer was allowed to shorten this period based upon the observed settlements.

A Type D excavation at Piers 2 and 3 was included on the Foundation Review dated June 25, 1986.

Foundation Recommendations

The following recommendations are for the proposed replacement Butte Creek (Right) Bridge (Br. No. 12-0126R), as indicated on the General Plan sheet dated July 14, 2011. Driven steel "H" piles are recommended at all support locations.

The proposed pile tip elevations were based on the cut-off elevation and factored loads provided by the Office of Bridge Design, Branch 7 dated July 30, 2011 at all support locations. Refer to Table 8 for the Abutment Foundation Design Recommendations, Table 9 for the Pier Foundation Design Recommendation and Table 10 for the Pile Data Table.

Table 8. Abutments 1 and 3 Foundation Design Recommendations for the proposed Butte Creek (Right) Bridge (Br. No. 12-0126R)

| Abutment Foundations Design Recommendations | | | | | | | | | |
|---|-----------|------------------------|--|-----------|---|---------------------------|----------------------------|------------------------------|--|
| Support Location | Pile Type | Cut-off Elevation (ft) | LRFD Service-I Limit State Load (kips) per Support | | LRFD Service-I Limit State Total Load (kips) per Pile (Compression) | Nominal Resistance (kips) | Design Tip Elevations (ft) | Specified Tip Elevation (ft) | Nominal Driving Resistance Required (kips) |
| | | | Total | Permanent | | | | | |
| Abut. 1 | HP 14X117 | 210.9 | 1677 | 1395 | 120 | 240 | 160.0 (a) | 160.0 | 240 |
| Abut. 3 | HP 14X117 | 213.4 | 1576 | 1294 | 113 | 230 | 160.0 (a) | 160.0 | 230 |

Notes:

- 1) Design tip elevations are controlled by: (a) Compression.
- 2) Design tip elevations for settlement are not applicable because the piles will be driven into the igneous rock.
- 3) Design tip elevation for Lateral Load will be provided by Structure Design (SD).

Table 9. Pier 2 Foundation Design Recommendations for the proposed Butte Creek (Right) Bridge (Br. No. 12-0126R)

| Pier Foundation Design Recommendations | | | | | | | | | | | |
|--|-----------|------------------------|---|---|---|--------------------------|----------------------|------------------------|-----------------------------|------------------------------|--|
| Support Location | Pile Type | Cut-off Elevation (ft) | Service-I Limit State Load (kips) per Support | Total Permissible Support Settlement (inches) | Required Factored Nominal Resistance (kips) | | | | Design Tip Elevations (ft) | Specified Tip Elevation (ft) | Nominal Driving Resistance Required (kips) |
| | | | | | Strength Limit | | Extreme Event | | | | |
| | | | | | Comp. ($\phi = 0.7$) | Tension ($\phi = 0.7$) | Comp. ($\phi = 1$) | Tension ($\phi = 1$) | | | |
| Pier 2 | HP 14X117 | 185.4 | 6519 | 1 | 171 | 0 | 123 | 0 | 140.0 (a-I) 140.0 (a-II) | 140.0 | 250 |

Notes:

- 1) Design tip elevations are controlled by: (a-I) Compression (Strength Limit) and (a-II) Compression (Extreme Event).
- 2) Design tip elevations for settlement are not applicable since the piles will be driven into the igneous rock.
- 3) Design tip elevation for Lateral Load will be provided by Structure Design (SD).

Table 10. Pile Data Table for the Butte Creek (Right) Bridge (Br. No. 12-0126R)

| Pile Data Table | | | | | | |
|-----------------|-----------|---------------------------|---------|---------------------------|------------------------------|-----------------------------------|
| Location | Pile Type | Nominal Resistance (kips) | | Design Tip Elevation (ft) | Specified Tip Elevation (ft) | Nominal Driving Resistance (kips) |
| | | Compression | Tension | | | |
| Abut. 1 | HP 14X117 | 240 | 0 | 160.0 (a) | 160.0 | 240 |
| Pier 2 | HP 14X117 | 250 | 0 | 140.0 (a) | 140.0 | 250 |
| Abut 3 | HP 14X117 | 230 | 0 | 160.0 (a) | 160.0 | 230 |

Notes:

- 1) *Design tip elevations for all support locations are controlled by: (a) Compression.*
- 2) *Design tip elevations for settlement are not applicable since the piles will be driven into igneous bedrock.*
- 3) *The specified tip elevation shall not be raised above the design tip elevations for Lateral Load.*

General Notes to Designer

1. All support locations are to be plotted on the Log of Test Borings, in plan view, as stated in "Memo to Designers" 4-2. The plotting of support locations should be made prior to requesting a final foundation review.
2. If lateral demands exist on the support piles, the structural design engineer shall indicate on the plans, in the pile data table, the design pile tip elevations required to meet the lateral load demands. If the specified pile tip elevations given in the above pile data table are not adequate for lateral load demands; the Office of Geotechnical Design-North shall be contacted for further recommendations.
3. A Type "A" excavation is to be shown on the plans at the Pier 2 location.

Construction Considerations

Rock Cores

1. Rock core samples from the 2010 subsurface investigation are available for viewing by bidders at the California Department of Transportation, Transportation Laboratory, 5900 Folsom Blvd., Sacramento, CA. Once a request has been made to view the core, the bidders are to allow the State five (5) working days to prepare and display the core.
2. During the 2010 subsurface investigation, rock samples were collected from several borings at 5.0 feet intervals, when possible. Representative samples were submitted to the laboratory for strength testing. Some of the samples were too small, and or too soft to be tested, or disintegrated upon preparation for testing. Laboratory rock strength test data is available for viewing at the California Department of Transportation, Transportation Laboratory, 5900 Folsom Blvd., Sacramento, CA.

H piles

1. Groundwater was encountered during the 2010 subsurface investigation. It is anticipated the Contractor will encounter groundwater while excavating to the bottom of the pile cap. Groundwater surface elevation is subject to seasonal fluctuations and river level fluctuations and may occur at a higher or lower elevation than indicated on the Log of Test Borings (LOTB) sheets depending on the conditions and time of construction. Refer to the LOTB sheets for details.
2. Due to the likelihood that the Contractor will encounter groundwater during the excavation of the pile cap at Pier 2 location, structure excavation Type "A" is recommended to be shown on the plans.
3. Due to the very dense soil along with the very hard cobble layers located in the fill and alluvium material, the Contractor should anticipate hard driving conditions of the sheet piling used to support the pile cap excavations which may require thicker sheet piling sections with driving shoes.
4. Due to the variation in the weathering, fracturing and hardness of the igneous bedrock, boulders and cobbles, within relatively short distances as shown on the LOTB sheets, the Contractor should anticipate varying rock conditions (alternating soft, hard and very hard) both laterally and vertically across the entire bridge site. The Contractor should anticipate varying rock conditions (described above in the subsurface conditions section of this report) from one pile location to the next pile location within each structure support.
5. The Contractor should anticipate hard and erratic driving of the steel "H" piles due to the presence of very hard cobbles, very hard boulders and variations in the top of the rock elevation along with variations in the weathering of the rock. The Contractor should anticipate field cutting of all "H" piles. Refer to the LOTB sheets for details.
6. Driving shoes shall be required and installed on all driven steel "H" piles to ensure pile integrity and limit damage to piles during hard driving.
7. At the Engineer's option, if the steel "H" piles are driven to a depth that is within 5.0 feet of the specified tip and three times the required pile acceptance criteria is achieved, the pile tip elevation may be considered adequate and the excess pile length cut-off. Refer to the Caltrans Standard Specifications 49-1.08 (2006) for information concerning the pile acceptance criteria.
8. The Office of Geotechnical Design North should be invited to a pre-construction meeting.

Project Information

Standard special Provisions S5-280, "Project Information," discloses to bidders and contractors a list of pertinent information available for their inspection prior to bid opening. The following is an excerpt from SSP S5-280 disclosing information originating from Geotechnical Services. Items listed to be included in the information handout will be provided in Acrobat (.pdf) format to the addressee(s) of this report via electronic mail.

Data and information attached with the project plans are:

- A. Log of Test Borings (Butte Creek Right Bridge (Replace), Br. No. 12-0126R).

Data and Information included in the Information Handout provided to the bidders and Contractors are:

- A. Foundation Report (Butte Creek Right Bridge (Replace), Br. No. 12-0126R) dated November 15, 2011.

Data and information available for inspection at the Transportation Laboratory:

- A. Rock Core samples from the 2010 subsurface investigation.
B. Laboratory sample test results from the 2010 subsurface investigation.

The recommendations contained in this report are based on specific project information regarding structure type, support locations, and design loads that have been provided by the Office of Bridge Design, Branch 7. If any conceptual changes are made during the final project design, the Office of Geotechnical Design-North 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 Jacqueline Martin (916) 227-1051 or Reid Buell (916) 227-1012 at the Office of Geotechnical Design-North.

Report by:



JACQUELINE A MARTIN, P.G. No. 8705
Engineering Geologist
Office of Geotechnical Design-North



REZA MAHALLATI, P.E. No. 49374
Senior Materials & Research Engineer
Office of Geotechnical Design-North



Attachments: Figure 1
Figure 2
Final Design Response Spectrum

cc: DPM – John Holder (email)
GS File Room
R.E. Pending – RE.Pending.File@dot.ca.gov (email)
Structure OE – John Stayton (email)
DME (District 3) – Joe Peterson (email)
Supervisor – Reid Buell (email)



REFERENCES

Federal Highway Administration (FHWA), Design and Construction of Driven Pile Foundations: Workshop Manual – Volume 1 (Pub. No. FHWA NHI-05-042) Report date April 2006.

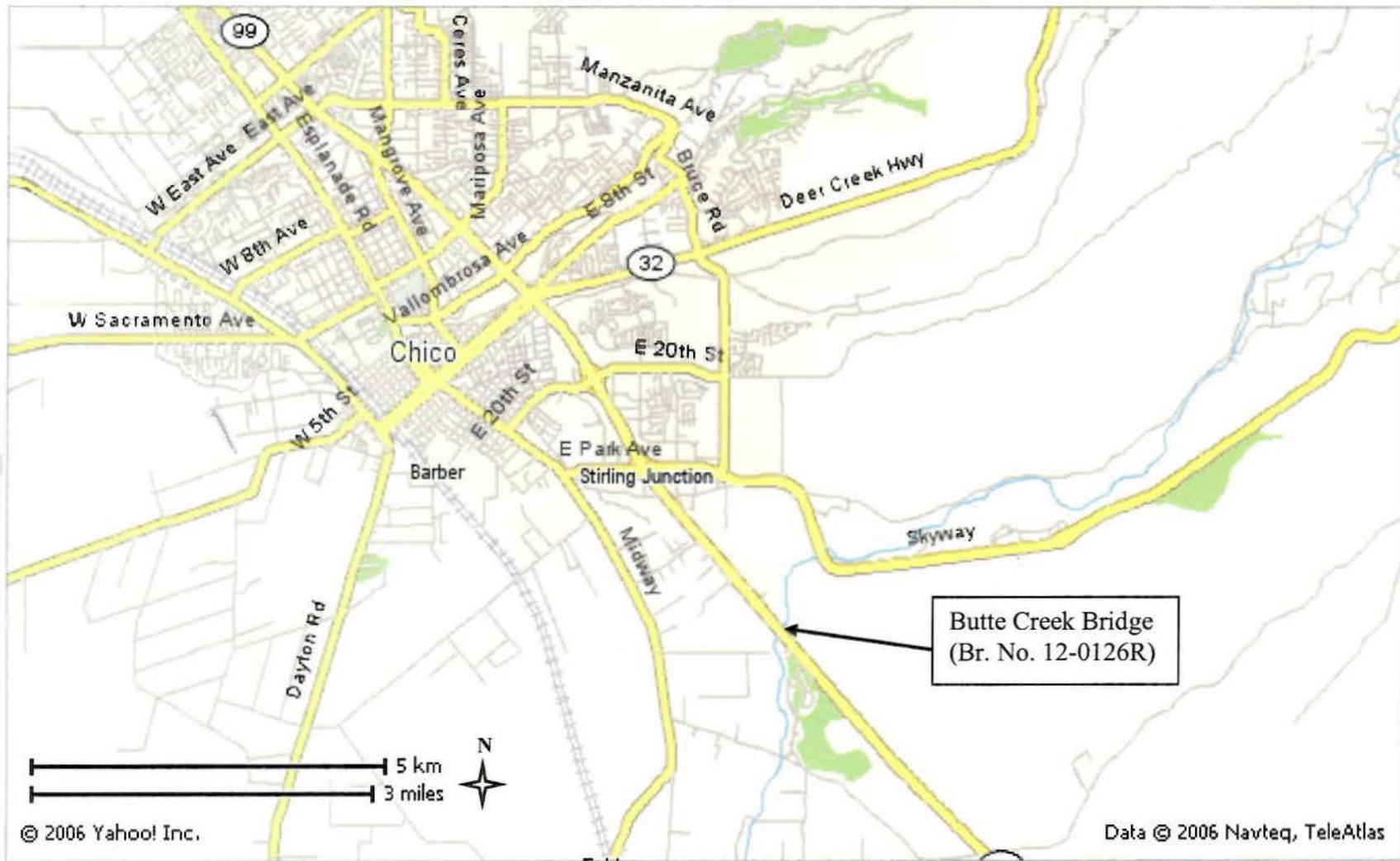
Harden, Deborah R., 1998, California Geology, Prentice Hall, 233-251 pp.

Norris, Robert, M. and Webb, Robert, W., 1976, Geology of California, John Wiley & Sons, 78 and 79 pp.

Saucedo, G.J. and Wagner, D.L., 1992, Geologic Map of the Chico Quadrangle, California, California Geological Survey (formerly the California Divisions of Mines and Geology), scale 1:250,000, 1 map.

State of California, Department of Transportation (Caltrans):

- Standard Plans, May 2006.
- Standard Specifications, May 2006.
- Bridge Standard Details Sheets, April 2000.
- Memo to Designers, Section 3-1, July 2008.
- Memo to Designers, Section 1-35, June 2008.
- Seismic Design Criteria (2010), Version 1.6.
- Caltrans-Corrosion Guidelines, September 2003, Version 1.0.



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 Geotechnical Services
 Geotechnical Design – North

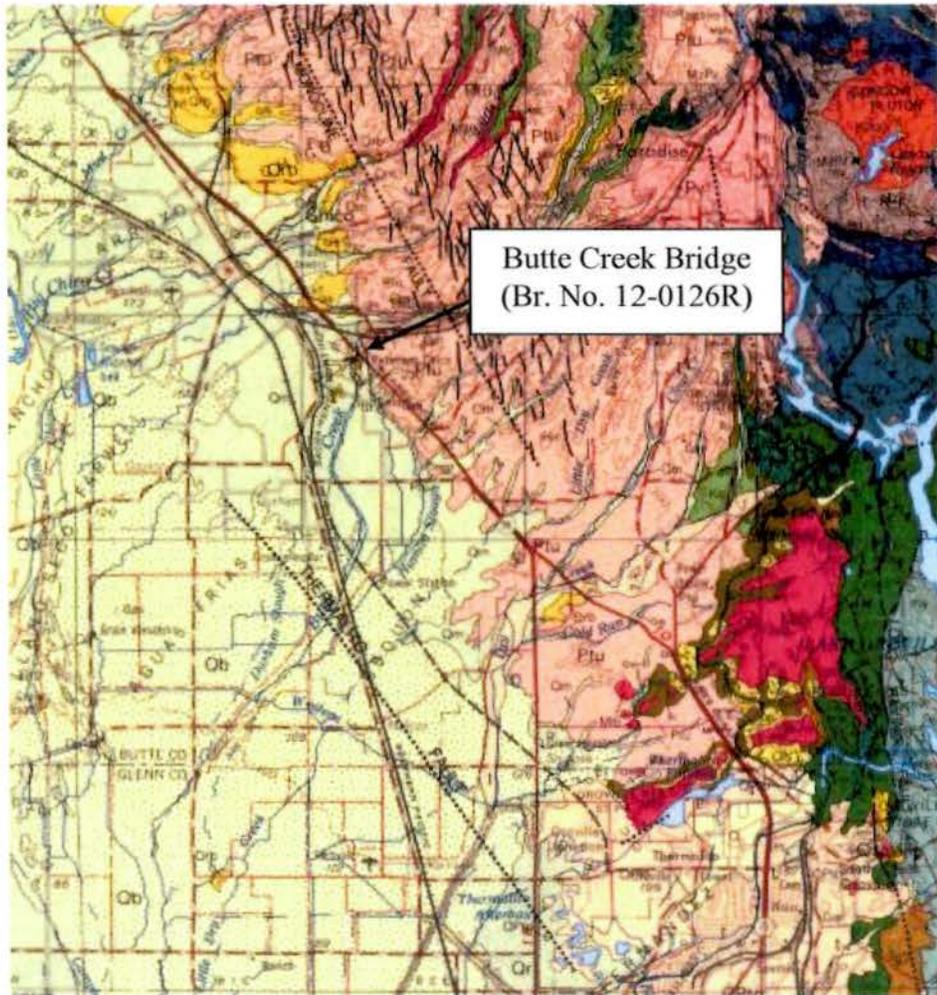
EA: 03-3E6201/EFIS: 0300000509

November 15, 2011

Location Map

Butte Creek Bridge, Br. No. 12-0126R
 03-BUT-99-PM28.7

Figure 1



- Qm Modesto Formation (*Alluvium*)
- Qr Riverbank Formation (*Alluvium*)
- Qos Pleistocene nonmarine sedimentary rocks
(*Fluvial and lacustrine gravel, sand, silt, and clay*)
- Qrb Red Bluff Formation (*Coarse red gravel, sand, and silt*)
- QPis Volcanic sediments of Sutter Buttes (*Volcaniclastic sediment and lahars*) QPI-Volcanic lake beds
- QPis Tuffs of Oroville (*Volcaniclastic sediments and tuff*)
- Pnt-Nomlaki Tuff
- PtU Tuscan Formation (*Lahars, volcaniclastic sediments, and tuff*)
- Pnt-Nomlaki Tuff

Base Map Reference: Saucedo, G.J. and Wagner, D.L., 1992, Geologic Map of the Chico Quadrangle, California, California Geological Survey (formerly the California Divisions of Mines and Geology), scale 1:250,000, 1 map.



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 Geotechnical Services
 Geotechnical Design – North

EA: 01-3E6201
 EFIS: 0300000509

November 15, 2011

Geology Map

03-BUT-99-PM 28.7
Butte Creek Bridge, Br. No. 12-0126R

Figure 2

Butte Creek Bridge

Bridge No. 12-0126R

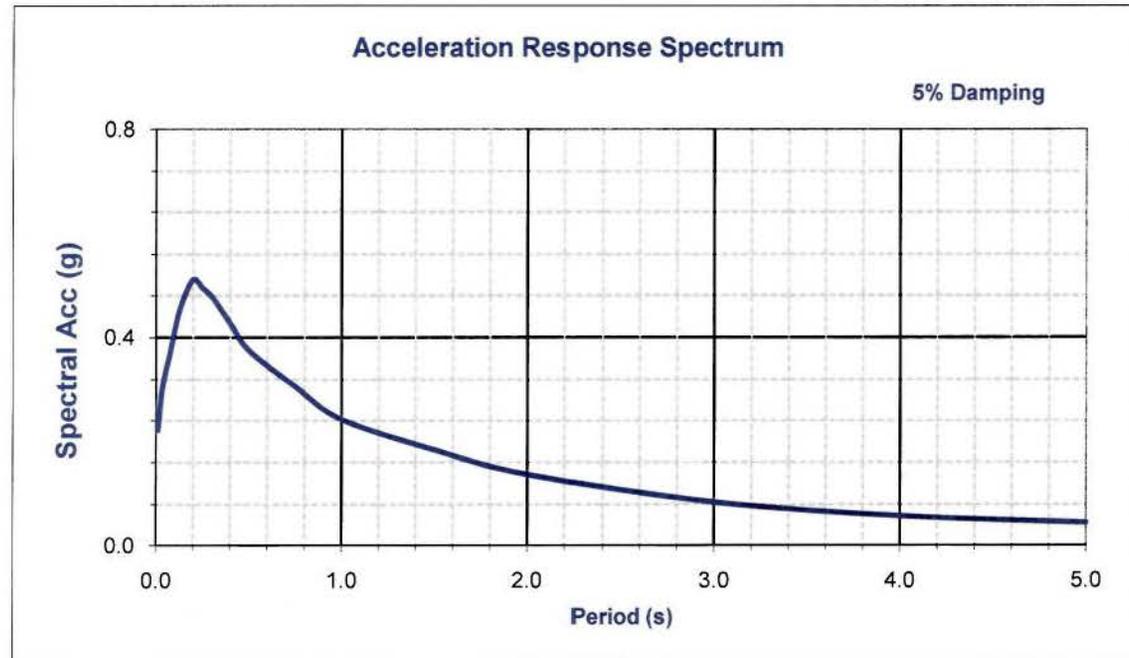
EFIS 0300000509

Latitude 39.6942

Longitude -121.7781

Control Envelope

| Period (s) | Sa(g) |
|------------|-------|
| 0.010 | 0.221 |
| 0.020 | 0.259 |
| 0.030 | 0.296 |
| 0.050 | 0.333 |
| 0.075 | 0.371 |
| 0.100 | 0.414 |
| 0.120 | 0.445 |
| 0.150 | 0.477 |
| 0.200 | 0.512 |
| 0.250 | 0.495 |
| 0.300 | 0.478 |
| 0.400 | 0.426 |
| 0.500 | 0.375 |
| 0.750 | 0.306 |
| 1.000 | 0.242 |
| 1.500 | 0.184 |
| 2.000 | 0.136 |
| 3.000 | 0.084 |
| 4.000 | 0.057 |
| 5.000 | 0.044 |



Deterministic Procedure Data

Fault Great Valley fault 1

Fault ID 20

Style R

Mmax 6.7

Dip 15 deg

Z_{TOR} 7 km

R_{rup} 45 km

R_{jb} 45 km

R_x 45 km

V_{S30} 360 m/s

Z_{1.0} N/A m

Z_{2.5} N/A km

Notes

Please note the Design ARS curve is an envelope of minimum and 5% Probability of Exceedance in 50 Years (975 Years Return Period).

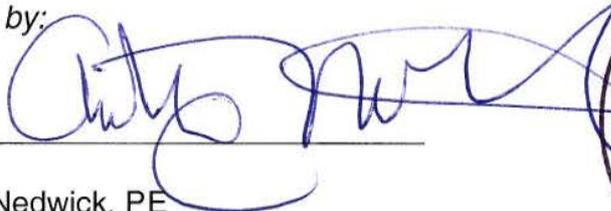
Final
Design Response Spectrum

State of California – Department of Transportation
Division of Engineering Services
Structure Design Services

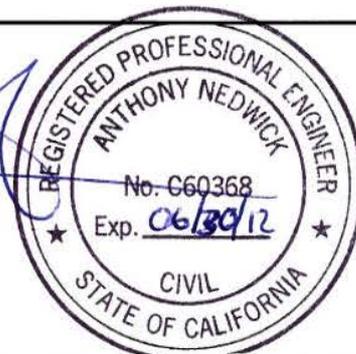
FINAL HYDRAULIC REPORT

Butte Creek
Bridge No. 12-0126R
3 - BUT - 99
EA 3-3E6201

Prepared by:



Anthony Nedwick, PE
Structure Hydraulics and Hydrology
July 13, 2011



General:

It is proposed to replace the existing northbound Route 99 structure (12-0126R) with a new structure. The project is located at Post Mile 28.70 on State Route 99 in Butte County, south of the City of Chico. The existing structure has been determined to be scour critical due to the exposure and undermining of the spread footing at Pier 2. The proposed 2-span Reinforced Concrete Box Girder (RCBG) structure is to have a 2'-0" thick pier wall founded on a spread footing. The structural depth will be 6'-6". The abutments will be founded on steel piles. The substructure elements will have no roadway skew and the hydraulic skew will be negligible at higher flows. Span lengths are equal at 162'-0" from the ends of the structure to the centerline of Pier 2, with an overall structure length of 324'-0".

Datum:

The vertical datum used for this project is NGVD 1929. Datum transformation information between NGVD 1929 and NAVD 1988 was determined using the VERTCON Orthometric Height Conversion provided by the National Geodetic Survey, National Oceanic and Atmospheric Administration (www.ngs.noaa.gov) website. According to the NGS information, values for the NAVD 1988 datum are 2.326 feet higher than for the NGVD 1929 datum at the project site. Where helpful, dual units will be noted in this report.

This report is based on the plans and information provided by Structure Design, as well as various other sources including previous Caltrans reports, FEMA Flood Insurance Studies, California Department of Fish and Game, Central Valley Flood Protection Board, USGS information and survey data from Preliminary Investigations. **All elevations indicated in this report are based on Vertical Datum NGVD 1929, except as noted.**

Basin:

Butte Creek Basin covers about 152 mi² at the site, not including the watershed for Little Chico Creek which flows may be diverted into Butte Creek by way of the Little Chico-Butte Creek Diversion Channel. Butte Creek flows through canyons in the tree covered foothills of the Sierra Mountains to the east of Chico. The watershed has no significant flood control features such as reservoirs. Butte creek emerges from the canyons and enters the relatively flat Sacramento Valley approximately 1 mile upstream from the project site.

Discharge:

Previous Caltrans studies have modeled Butte Creek discharges utilizing stream gage data and a HEC-1 model developed by Saravana Vigneswaran of Caltrans Structures Hydraulics. For this study, the latest FEMA Flood Insurance Study for Butte County, dated January 6, 2011, was also considered. Based on the FEMA

study, the 50-year and 100-year discharge rates for Butte Creek at Skyway (approximately 3500 feet upstream of the site) are 21,300 cfs and 25,000 cfs, respectively. Between the Skyway and the project site, the Little Chico-Butte Creek Diversion Channel flows combine with the Butte Creek flows. The Little Chico-Butte Creek Diversion Channel has peak discharges of 3,000 cfs and 3,900 cfs for the 50-year and 100-year flows, respectively. These flows were combined to arrive at discharge rates at the site.

Therefore, at the project site the 50-year discharge is estimated at 24,300 cfs, while the 100-year discharge is estimated at 28,900 cfs. The Channel Capacity Discharge per CVFPB and the State Plan of Flood Control is 27,000 cfs. Since this flow rate is lower than the 100-year flow rate, the 100-year rate will be used to verify that the new structure has the 3 foot of freeboard as required by the CVFPB as requested by Mike Peterson of the CVFPB.

Hydraulic Analysis:

The channel hydraulics were modeled using the Army Corps of Engineers HEC-RAS modeling program, version 4.0, utilizing survey data provided by Caltrans Preliminary Investigations. HEC-RAS was used to determine the water surface elevations and velocities throughout the project reach. Manning's roughness coefficients varied and were estimated using USGS guides as well as data and photos gathered during site investigations. Manning's coefficients were estimated at 0.030 in the main channel and ranged from 0.035 to 0.040 in the floodplain areas, with the southern/eastern overbanks having higher values to account for more dense brush in that area. For Butte Creek, the channel has an overall average slope of approximately 0.49 % in the reach studied, with a slightly steeper slope of 0.56% in the immediate vicinity of the structure.

In addition to the bridge replacement project, Caltrans has been working closely with the CDFG to potentially enhance salmonid habitat upstream and downstream of the bridge project site by gravel augmentation. This work will entail using the gravel from a Temporary Creek Diversion System (TCDS) placed in the creek to serve as a working platform for bridge construction and a containment area during bridge demolition. The TCDS will contain appropriately sized pipes to carry streamflow through the pad during the low-flow season. The actual pad dimensions of the pad will be developed by the contractor. However, it has been estimated that the pad will be approximately 104 feet in width, and 105 feet in length, extending approximately 30 feet on either side of the northbound bridge to contain any bridge material that may fall during demolition or construction. It will contain approximately 1,350 cubic yards of clean gravel each year. At the finish of the first construction season, the gravel will be spread evenly into a 6-inch deep layer approximately 615 feet upstream, and approximately 315 feet downstream of the bridge in an effort to restore and enhance stream habitat for spawning chinook salmon that migrate up the creek. This process will be repeated in the following construction season for a total of

2,700 cubic yards of gravel in the creek with a depth of approximately 12-inches. This is a conservative depth as the gravel will spread and fill in low spots that currently trap salmonids and hinder their migration each year.

The gravel that DFG has specified is being stockpiled at the M&T Ranch outside of Chico. DFG provided a Trip Report dated 12/30/08, in which rough methods were used to determine the composition of the gravel. Using the information from this Trip Report, it was estimated that the median size of the gravel at the stock pile (D_{50}) is approximately 1.25" in diameter. This median size would be used to determine the Critical Velocity for incipient motion. While some of this gravel will likely wash down the channel during the first year, the hydraulic model was modified to account for an additional 12" of material placed in the channel by increasing the surveyed channel bottom elevations by 12 inches within the proposed limits of the spread.

The critical velocity of the median sized gravel D_{50} was then calculated and compared to the average channel velocity at each of the channel cross-sections where the material is to be placed, at varying flow rates from 7,500 cfs to the Q_{100} flow of 28,900 cfs. The Critical Velocity is dependent upon material size and depth of flow. According to the calculations, both upstream and beneath the bridges, the D_{50} material was stable at all flow rates up to the 100-year flow with the exception of the 20,000 cfs and 22,500 cfs flows, at a point approximately 120 feet upstream from the new bridge. All other flow rates and locations were calculated to have stable gravel. At various locations downstream of the southbound structure, the gravel will be in motion for all or most flow rates, as low as 7,500 cfs.

Three different scenarios were evaluated; the existing 4-span structure with the current survey data, the proposed RCBG structure using the current channel and the proposed RCBG structure using the modified channel geometry to account for the additional salmonid habitat enhancement gravel.

Based on the HEC-RAS models, the water surface elevation for the 100-year flood of 28,900 cfs will decrease approximately $\frac{1}{2}$ inch for the proposed structure with the natural channel, when compared with the existing configuration. The effects are minimal, but are mostly attributed to the reduction in the number of piers within the channel from four piers with the existing configuration to one pier for the proposed structure. However, the inclusion of the 12" of DFG gravel spread across the main channel will cause an increase in water surface elevation of less than $\frac{1}{2}$ inch at the structure, when compared with the scenario of not adding this additional gravel to the channel at the proposed structure. The extra gravel has been accounted for in the hydraulic model to estimate the water surface elevations and calculate the freeboard. Therefore, the proposed structure along with the additional DFG gravel replenishment will have negligible impacts on the capacity of the channel.

For the 100-year event, the proposed 2-span structure with the additional DFG gravel has a modeled "Water Surface Elevation" of 218.5 ft NGVD 29 (220.8 feet NAVD 88).

To satisfy the CVFPB requirement of 3 feet of freeboard over the design flow, the new structure should have a minimum soffit elevation of 221.5 feet NGVD (223.8 feet NAVD). However, the calculated "Lowest Soffit Elevation" for this structure is 221.6 feet NGVD 29 (223.9 feet NAVD 88), which provides 3.1 feet of freeboard over the 100-year flow of 28,900 cfs.

For the 100-year flows, average velocity upstream and beneath the structures was calculated at approximately 8.0 fps for the 100-year event. Downstream of the structures, the average channel velocity went as high as 9.7 fps, but generally stayed below 8.4 fps within a few hundred feet of the bridge.

Streambed:

The natural channel bed material consists of mostly coarse alluvium ranging from small boulders and cobbles, gravel and coarse sand with smaller amounts of fine-grained material. This material is considered to be scorable. Channel bed material at the site has an estimated D_{50} of 3" and a D_{95} of 12". This does not include the DFG gravel proposed for replenishment.

Scour Analysis:

Scour was estimated utilizing the methods set forth in the FHWA HEC-18, "Evaluating Scour at Bridges." All scour elevations are based on the 100-year discharge.

There is currently a diversion structure approximately 3000 feet upstream of the site, which prevents natural sediment replenishment from occurring through the site and downstream to the Sacramento River. Based on a comparison of historical channel cross-sections taken at the existing Route 99 structures, the channel has degraded approximately 7.2 feet between 1955 and 1963, but only an additional 1.7 feet between 1963 and 2003. For the 40-year period between 1963 and 2003, the channel degraded at an average rate of 0.04 feet per year. The channel invert is continuing a downward trend, but since 2007 the rate has increased to approximately 0.06 feet per year. This channel degradation is attributed in large part to the sediment starvation caused by the diversion structure noted above. Over an estimated 75-year life span of the proposed structure, the channel invert is anticipated to drop another 4.5 feet, to an elevation of approximately 191.7 feet (NGVD 29). The addition of the DFG gravel is not anticipated to provide any structural protection from degradation at the site.

Butte Creek is considered to be an active, meandering channel. Therefore, channel migration within the main channel beneath the structure is anticipated and has been included for Local Pier Scour consideration. Local Pier Scour elevations are based off the minimum channel invert of 196.2 feet (NGVD 29). For the Butte Creek Bridge (39-0126R), Local Pier Scour for the 2-foot wide pier wall is anticipated at 4.8 feet depth, to an elevation of 191.4 Feet (NGVD 29).

Contraction Scour and Abutment Scour were calculated using the Hydraulic Design function within HEC-RAS. Both the Contraction and Abutment Scour were determined to be negligible for Butte Creek.

Summary & Recommendations:

Below is a summary of key design parameters based on the hydrology and hydraulic analysis performed for this structure.

All elevations given are referenced to the data provided by Structures Design and Preliminary Investigations-North, using the NGVD 29 vertical datum except as noted.

| Hydrologic Summary for | | | |
|---|--------------------------------------|---------------------------------------|-------------------------------------|
| Butte Creek Bridge, 12-0126R | | | |
| Drainage Area: 152 mi ² | | | |
| Frequency | Design Flood | Base Flood | CVFPB |
| | 50-year | 100-year | N/A |
| Discharge | 24,300 cfs | 28,900 cfs | 27,000 cfs |
| Water Surface Elevation at Bridge | 216.6 ft NGVD 29 218.9 ft NAVD 88 | 218.50 ft NGVD 29 220.8 ft NAVD 88 | 217.8 ft NGVD 29 22.2 ft NAVD 88 |
| Flood plain data are based upon information available when the plans were prepared and are shown to meet federal requirements. The accuracy of said information is not warranted by the State and interested or affected parties should make their own investigation. | | | |
| Minimum Soffit Elevation* | | 221.5 ft NGVD 29 (223.8 ft NAVD 88) | |
| Local Scour Depth | | 4.8 ft | |
| Local Scour Elevation | | 191.4 ft NGVD 29 | |

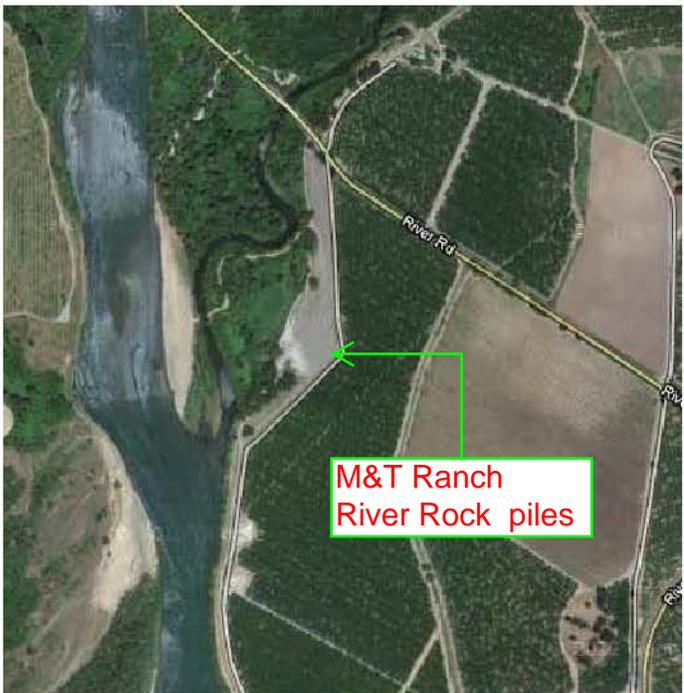
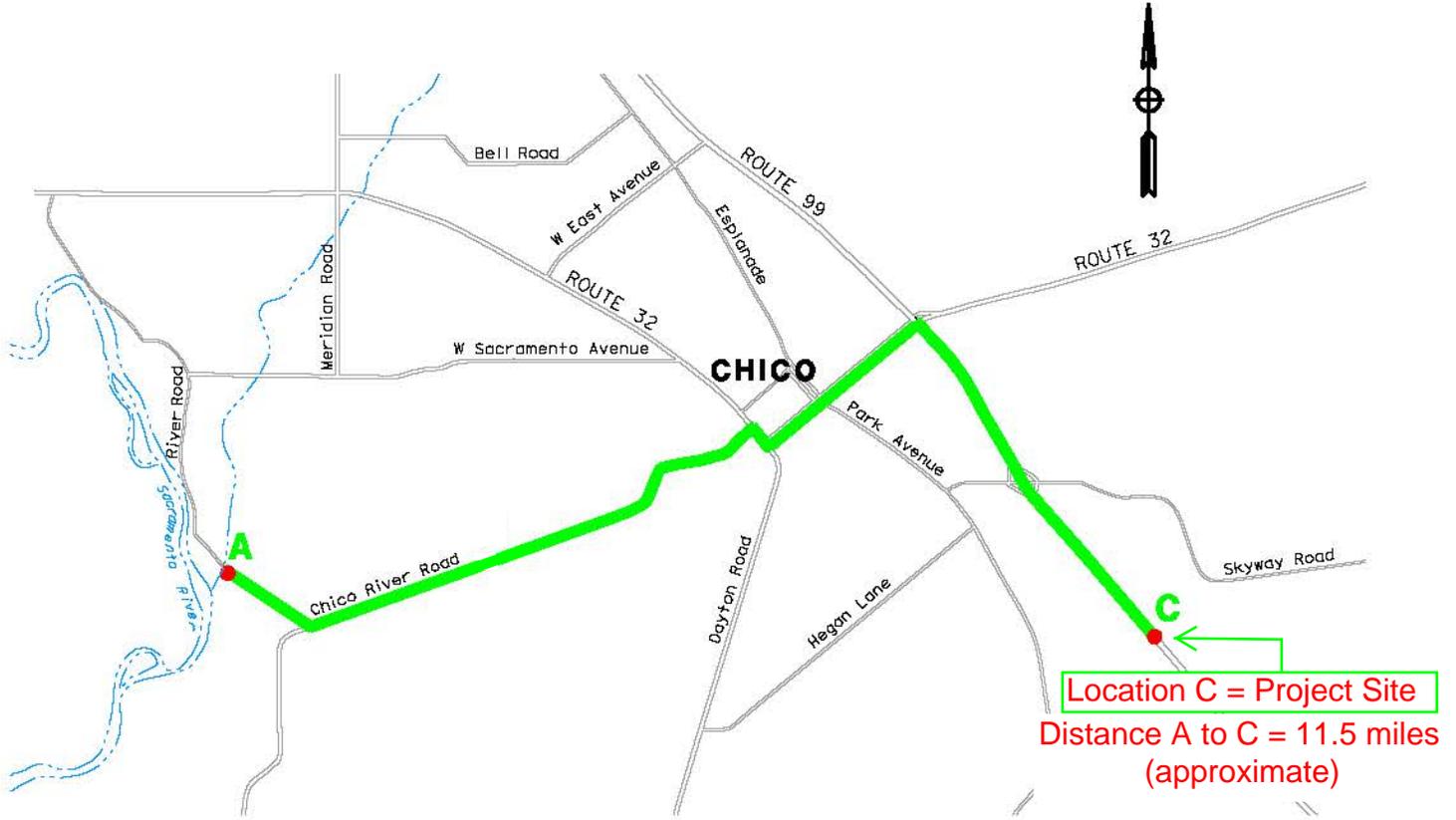
* The Central Valley Flood Protection Board requires 3 feet of Freeboard over the 100-year Flow for new structures at this location.

| LongTerm Scour Depths, Butte Creek, Br. No. 12-0126R | | |
|--|-------------------------|-------------------------|
| Support | Degradation Scour Depth | Contraction Scour Depth |
| Pier 2 | 4.5 ft | 0.0 ft |

| Scour Data (Elevation and Depth), Butte Creek, Br. No. 12-0126R | | |
|---|---------------------------|--------------------------------|
| Support | Long Term Scour Elevation | Short Term (Local) Scour Depth |
| Pier 2 | 191.7 ft NGVD 29 | 4.8 ft |

This report has been prepared under my direction as the professional engineer in responsible charge of the work, in accordance with the provisions of the Professional Engineers Act of the State of California.

OPTIONAL MATERIAL SITE
SAND AND RIVER GRAVEL AT M&T RANCH



LOCATION A

M&T Ranch

Office Address:

**3964 Chico River Road
Chico, CA, 95928**

Contact:

- Contact Les Heringer 24-hours in advance of accessing the stockpiled sand and river gravel site on the M&T Ranch property.

Les Heringer, Jr.

M&T Ranch

(530)-342-2954 Business

(530)-342-4138 Fax

(530)-518-9954 Cell

lsheringer@clearwire.net

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Exhibits:

- Letter from Les Heringer, dated 4-9-12, M&T Ranch to the Contractor regarding access and access conditions.
- Additional photos of the stockpiled sand and river gravel site on the M&T Ranch.

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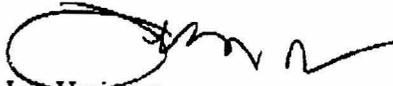
April 9, 2012

Mr. Clint Garman
Environmental Scientist
CA Dept. of Fish & Game
629 Entler Avenue, Bldg. 2, Suite 11
Chico, CA 95928-7424

Dear Clint:

This is being written at your request as a letter of permission for Cal Trans to access the M&T Ranch where the DFG stockpiled gravel pile is located. Access is granted to the contractor or sub-contractor that does the Highway 99 at Butte Creek Bridge expansion project starting in 2013 and continuing through 2016, or for the life of this project. The reason access is needed on the M&T Ranch is to utilize a portion of the stockpiled gravel in the Butte Creek Bridge expansion project. The access point will be through the ranch gate on the west side of the Big Chico Creek Bridge at River Road. The gate will be kept closed when not in use. The M&T Ranch will be named as additional insured on the Cal Trans contractor's general liability insurance policy.

Sincerely,



Les Heringer
Manager



FARM DOLLARS AT WORK

Additional Photos: River Rock at M&T Ranch

