

INFORMATION HANDOUT

WATER QUALITY

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

WDID No. 5A48CR00112

PERMITS

**STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME**

NOTIFICATION No. 1600-2012-0148-R3

UNITED STATES ARMY CORPS OF ENGINEERS

NON-REPORTING NATIONWIDE PERMIT

PERMIT File No. SPK-2012-00543

AGREEMENTS

NATIONAL MARINE FISHERIES SERVICES

MATERIALS INFORMATION

FINAL FOUNDATION REPORT

STRUCTURES FINAL HYDRAULIC REPORT

NON-STORMWATER INFORMATION PACKAGE

**NON-STORM WATER INFORMATION PACKAGE
CONTRACT NO: 04-0A0904
04-SOL-80- PM 24.8/25.2
WIDEN ROADWAY & STRUCTURE to LENTHEN
ACCELERATION LANES**

California Department of Transportation
District 04
Water Quality Program
111 Grand Avenue, Oakland California, 94612

September 2012

Disclaimer

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

TABLE OF CONTENT
CONTRACT NO: 04-0A0904

- 1 PROJECT DESCRIPTION
- 2 CONSTRUCTION ACTIVITIES REQUIRING DEWATERING
- 3 BMP FOR TREATMENT OF GROUNDWATER
- 4 MONITORING DISPOSAL AND RESUSE OF TREATED GROUNDWATER

ATTACHMENTS

- A ESTIMATED GROUNDWATER SEEPAGE RATE IN PROJECT AREA
- B DEWATERING LOCATION PLAN
- C LIST OF PUBLICLY OWNED TREATMENT WORKS (POTW) FACILITY
- D SOLANO COUNTY POTW SERVICE AREA

1. PROJECT DESCRIPTION

The existing acceleration lane of the on-ramp from Alamo Drive onto Westbound Interstate 80 in the City of Vacaville in Solano County is approximately 400 feet. This project proposes to lengthen this acceleration lane to the standard 1067 feet. The project will involve widening both the roadway and the Alamo Creek Bridge structure. The total estimated cost is \$1,465,000, of which \$292,000 is for the bridge widening. This project was originally included in the 2006 SHOPP but was later amended in the 2008 SHOPP for FY 2011/2012 under the Operational Improvement Program 201.310.

The total length of the roadway that is being widened is approximately 1700 feet and the widening varies from 0 to 14 feet. The depth of the structural section will be about 2 feet. 300 feet of concrete barrier (type 60C) will also be constructed. The existing Alamo Creek Bridge abutments and piers will be widened by 11 feet. Excavations for the widened abutments will be 10' wide by 16' long by 5' deep. Excavations for the piers will be 5' wide by 16' long by 8' deep.

The existing guardrail at Alamo Creek Bridge will be removed. Guardrail will be installed at the new bridge location and at the retaining wall.

Subsurface soil investigation was done & Groundwater was not-detected for TPHg, TPHd, TPHmo, and VOCs

2. CONSTRUCTION ACTIVITIES REQUIRING DEWATERING

Groundwater will be encountered in the structure excavations for extending two existing piers and abutments. The water table in the project area is estimated about 23 feet below the ground surface at borehole RC-11-004. Excavations for the piers & both sides abutments will require dewatering.

3. BMP FOR TREATMENT OF GROUNDWATER

The treatment system must be capable of removing sediment and turbidity-producing suspended solids. Primary and secondary treatment may be required, or the design of the treatment system may require combined use of the various treatment components in series to achieve effective treatment. The treatment system must have components to:

1. Remove sediment and turbidity-producing suspended solids. Components may include desilting basins, settling tanks, sediment traps, gravity bag filters, sand media filters, pressurized bag filters, cartridge filters, chemical coagulants and in-line flocculants, temporary holding tanks, or any combination necessary to provide primary and secondary treatment.
2. Adjust pH or dissolved oxygen by:
 - 2.1. Addition of sulfuric, phosphoric, or nitric acid under the supplier's specifications for treatment of water with high pH. You may use hydrochloric acid if the water is dechlorinated before discharge.
 - 2.2. Filtration through a limestone bed or addition of sodium hydroxide for treatment of water with a low pH. You may use carbon dioxide diffusion that produces carbonic acid for pH adjustment.

2.3. Aeration for treatment of water with low dissolved oxygen.

Provide pumps and piping to convey the water from the point of dewatering or stormwater capture to the treatment system and to the point of discharge. Pumps and piping must comply with Section 74-2, "Drainage Pump Equipment," of the Standard Specifications.

4. MONITORING DISPOSAL AND RESUSE OF TREATED GROUNDWATER

Use a flow meter to measure all discharges from treatment activities.

Provide a method for discharging treated water and include a discharge location. Do not discharge treated water in a way that impacts the natural bedding and aquatic life.

Discharge treated water:

- To control dust in active work areas.
- To land where the grade allows sheet flow and the soil allows infiltration.
- In a way that does not cause erosion and scour. Whenever scour occurs, repair the damage and install a velocity dissipater.

Comply with the manufacturer's instructions for all calibrations of the flow meter. Perform calibrations in the presence of the Engineer.

Water quality must comply with limits for discharge effluents and the receiving waters. Whenever observations and measurements determine the water quality limits are exceeded:

- Stop the discharge immediately
- Notify the Engineer
- Start corrective measures to change, repair, or replace the equipment and procedures used to treat the water

After the Engineer inspects and approves your corrective measures, resume treatment and discharge activities under the startup-phase sampling requirements before resuming regular-phase sampling.

Maintain the ATS to provide proper function and prevent leaks. Whenever a component of the dewatering equipment is not functioning properly, discontinue the treatment activities and repair or replace the component.

Sediments removed from uncontaminated areas during maintenance of the treatment system must be dried, distributed uniformly, and stabilized at a location within the project limits where directed by the Engineer.

Relocate the ATS as needed.

While the ATS is being operated, monitor:

- Influent turbidity
- Effluent turbidity
- Influent pH
- Effluent pH
- Residual chemical
- Effluent flow rate
- Effluent flow volume

Monitoring equipment for the ATS must record data at least once every 15 minutes. Cumulative flow data must be recorded daily. The recording system must have the capacity to record a minimum of 7 days of continuous data.

Monitoring equipment must be interfaced with the control system of the ATS to provide shutoff or recirculation whenever effluent readings exceed limits for turbidity and pH. The control system must default to recirculation or shutoff during a power failure or other catastrophic event.

The control system must control the dose of the coagulant, flocculant, or both to prevent overdosing.

Take water quality measurements to verify limit requirements for receiving waters and discharge effluent for:

1. Discharges of water that exceed 4 hours in duration occurring within a 24-hour period as follows:
 - 1.1. If the discharge could affect the receiving body of water in a stormwater drainage system, take measurements at the background and receiving water-sampling locations not more than 1 hour before discharging the treated water.
 - 1.2. Perform start-up phase sampling 10 to 30 minutes after measurable runoff occurs during a storm. Startup-phase sampling includes stormwater runoff, background, and receiving water measurements taken during the first 3 days of discharge. Take samples at regular intervals during the storm. Take at least 4 samples for each discharge lasting 4 hours or more. The time between sampling must not exceed 4 hours.
 - 1.3. Perform regular-phase sampling at least twice daily. Regular-phase sampling includes effluent, background, and receiving water measurements that occur after the 3rd day of activities. Take samples at regular intervals.
 - 1.4. Whenever the receiving body of water noticeably changes in color or clarity, take additional effluent, background, and downstream measurements.
 - 1.5. Whenever an initial measurement shows that the water quality limits are exceeded, take an additional measurement not less than 15 minutes and not more than 1 hour after the initial measurement.
 - 1.6. Whenever the 2nd test confirms the limits were exceeded, revert to the startup-phase sampling requirements before resuming regular-phase sampling.
 - 1.7. For cofferdam maintenance dewatering, you may discontinue regular-phase monitoring after 10 days if the effluent and receiving water measurements are consistently below the water quality limits.

2. Discharges of water for 4 hours or less in duration occurring within a 24-hour period as follows:
 - 2.1. If the discharge could affect the receiving body of water in a stormwater drainage system, take measurements at the background and receiving water-sampling locations no more than 1 hour before discharging the treated water.
 - 2.2. Take effluent, background, and receiving water measurements from 10 to 30 minutes after initiating the discharge. Continue to take measurements every hour.
 - 2.3. Whenever an initial measurement shows that the water quality limits are exceeded, take an additional measurement not more than 15 minutes after the initial measurement.
 - 2.4. Whenever the receiving body of water noticeably changes in color or clarity, take additional effluent, background, and downstream measurements.
3. All other discharges of water as follows:
 - 3.1. Measure stormwater effluent turbidity and pH at the end of the outfall or in-line sampling port.
 - 3.2. Measure receiving water turbidity, pH, and dissolved oxygen at a point within the mixing zone.
 - 3.3. Measure receiving water turbidity, pH, and dissolved oxygen at a point within 15 feet downstream of the discharge point.
 - 3.4. Measure natural background turbidity, dissolved oxygen, and pH at a location that is from 9 to 15 feet upstream of the discharge point. If another job site activity is being performed, measure at least 150 feet upstream of the discharge point.
 - 3.5. If the discharge is made into a surface body of water or into a stormwater drainage system that produces an observable effect on a surface body of water, monitor the receiving water.
4. Receiving water and natural background measurements as follows:
 - 4.1. If the receiving water is deeper than 3 feet, take depth-averaged measurements by taking samples from 3 points within the water column and averaging the following 3 measurements:
 - 4.1.1. 12 inches below the surface
 - 4.1.2. Mid-depth
 - 4.1.3. 12 inches above the bottom.
 - 4.2. If the receiving water is less than 3 feet in depth, take the measurement 12 inches below the surface.

Comply with the manufacturer's instructions for the use and calibration of meters and devices for taking water quality measurements. Perform calibrations in the presence of the Engineer.

Backfill and repair ground disturbance, including holes and depressions, caused by the installation and removal of the temporary active treatment system. Comply with Section 15-1.02, "Preservation of Property," of the Standard Specifications.

ATTACHMENT A

ESTIMATED GROUNDWATER SEEPAGE RATES
IN PROJECT AREA

Memorandum

*Flex your power!
Be energy efficient!*

To: MR. RONI BOUKHALIL
Branch Chief
Office of Design North Counties

Date: March 19, 2012

Attention: V. Han

File: 04- SOL- 80 PM 24.8/25.2
04 – 0A0901
Alamo Creek Bridge (Widen)

From: RIFAAT NASHED *RN*
Engineering Geologist
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

GRANT WILCOX *GW*
Chief, Branch B
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Seepage Rate (Flow Rate) Estimate at Alamo Creek Bridge Location

This memo is in response to your request to provide the groundwater depth and seepage rate for the construction of Abutment 1, Bent 2, Bent 3 and Abutment 4 located in the project site. It is our understanding that this information will be used in estimating dewatering quantities.

It should be noted that in our estimate in all the locations of construction elements, we considered the maximum depth of excavation under the groundwater elevation. Although, the groundwater measured in borehole RC-11-004 is at depth of 23 ft below the ground surface (164 ft elevation), we considered the groundwater elevation to be 184.4 ft (the elevation of water surface in the creek).

Abutment 1

For this location, our estimates are limited to the excavation required for two 24 inches piles from the original ground surface to the tip elevations.

Based on the LOTB of boring RC-11-001 drilled in October 2011, the soil layers at and below the groundwater level and extending to the bottom of the excavation are described as: lean clay with sand (CL) and sedimentary rock (mudstone).

By using a Coefficient of Permeability, K, value of 0.027 ft /day for lean clay, and 0.000003 ft /day for mudstone¹, the seepage rate for this location is approximately 0.03 gallon/day/ft².

¹ Roy E. Hunt, 2005, Geotechnical Engineering Investigation Handbook, 2nd Edition- Page 167 table 3.12

MR. RONI BOUKHALIL

Attn: V. Han

March 19, 2012

Page 2

Pier 2

For this location, our estimates are limited to the excavation required for two 24 inches piles from the original ground surface to the tip elevations and the excavation for infill wall foundation.

Based on the LOTB of the boring RC-11-002 drilled in October 2011, the soil layers at and below the groundwater level and extending to the bottom of the excavation are: sedimentary rocks (sandstone and mudstone), lean clay with sand (CL) and silty sand (SM).

By using a Coefficient of Permeability, K, value of 0.00305 ft/day for sandstone¹, 0.000003 ft/day for mudstone, 0.027 ft/day for lean clay, and 0.27 ft/day for silty sand, the seepage rate for this location is approximately 0.12 gallon/day/ft².

Pier 3

For this location, our estimates are limited to the excavation required for two 24 inches piles from the original ground surface to the tip elevations and the excavation for infill wall foundation.

Based on the LOTB of the boring RC-11-003 drilled in October 2011, the soil layers at and below the groundwater level and extending to the bottom of the excavation are: lean clay with sand (CL) and silty sand (SM).

By using a Coefficient of Permeability, K, value of 0.027 ft/day for lean clay, and 0.27 ft/day for silty sand, the seepage rate for this location is approximately 0.4 gallon/day/ft².

Abutment 4

For this location, our estimates are limited to the excavation required for two 24 inches piles from the original ground surface to the tip elevations.

Based on the LOTB of borings RC-11-004 drilled in October 2011, the soil layers at and below the groundwater level and extending to the bottom of the excavation are: sandy lean clay (CL), clayey gravel with sand (GC) and clayey sand (SC).

By using a Coefficient of Permeability, K, value of 0.027 ft/day for lean clay, 1.4 ft/day for clayey gravel, and 0.14 ft/day for clayey sand, the seepage rate for this location is approximately 1.0 gallon/day/ft².

MR. RONI BOUKHALIL

Attn: V. Han

March 19, 2012

Page 3

According to "The Federal Highway Report NO. FHWA-TS-80-224, Page 48-49" the Coefficient of Permeability, K, (ft./day) for all soils encountered in the Alamo Creek Bridge area are as follows:

Unified Soil Classification	Coefficient of Permeability K (ft./day)
Clayey gravel with sand (GC)	2.7×10^{-5} to 2.7×10^{-2}
Silty sand (SM)	2.7×10^{-4} to 1.4
Clayey sand (SC)	2.7×10^{-5} to 0.14
Sandy lean clay (CL)	2.7×10^{-5} to 2.7×10^{-3}

Our estimate of the average seepage rate (flow rate) for the entire project area is approximately 0.4 gallons /day/ ft². The seepage rate (flow rate) estimates provided in this memo are for cost estimate purposes only. The contractor expected to perform his own calculations to estimate flow rate for his purposes.

If you have any questions or need additional information, please call Rifaat Nashed at (510) 622-1773 or Grant Wilcox at (510) 286-4835.

c: TPokrywka, GWilcox, Route File, Daily File

RNashed/mm

Seepage Rate for Alamo Drive On-ramp/ Merchant Street

Support Location	Soil	No. of Piers	Length (ft)	Total Surface area (A) ft ²	K (ft/day)	H (ft)	H ₀ (ft)	dH (ft)	d S (ft)	i	q total (ft ³ /day)	q total (Gallon/day)	q total (Gallon/day/ft ²)	Average flow rate per sector (Gallon/day/ft ²)
Abutment 1 piles	Lean Clay with sand (CL)	2	6.0	75.36	0.027	184.4	155.20	29.20	110.96	0.26316	0.535453	3.965915161	0.053024352	
	Mudstone	2	22.0	722.6	0.000003	184.4	155.20	29.20	110.96	0.26316	0.00057	0.004257266	5.89159E-06	0.03
Bent 2 piles in fill wall	Sandstone	2	17.4	218.54	0.00305	184.4	122.00	62.40	237.12	0.26316	0.175407	1.309008248	0.005989788	
	Mudstone	2	22.6	190.14	0.000003	184.4	122.00	62.40	237.12	0.26316	0.00015	0.001120228	5.89159E-06	
	Lean clay with sand (CL)		7.0	137.2	0.027	184.4	162.00	22.40	85.12	0.26316	0.974842	7.274941084	0.053024352	
	Silly sand (SM)		0.8	15.68	0.27	184.4	162.00	22.40	85.12	0.26316	1.114105	8.314218382	0.530243519	
	Mudstone		2.2	54.17	0.000003	184.4	162.00	22.40	85.12	0.26316	4.28E-05	0.000319148	5.89159E-06	0.12
Bent 3 piles in fill wall	Lean Clay with sand (CL)	2	1.0	12.56	0.027	184.4	127.00	57.40	218.12	0.26316	0.089242	0.66598586	0.053024352	
	Silly sand (SM)	2	34.0	433.32	0.27	184.4	127.00	57.40	218.12	0.26316	30.78853	229.7651218	0.530243519	
	Silly sand (SM)		8.0	167.85	0.27	184.4	162.00	22.40	85.12	0.26316	11.92618	89.00137471	0.530243519	0.4
Abutment 4 piles	Sandy lean clay (CL)	2	11.1	139.42	0.027	184.4	160.70	23.70	90.06	0.26316	0.990616	7.392655145	0.053024352	
	Clayey gravel w/sand (GC)	2	5.0	62.8	1.4	184.4	160.70	23.70	90.06	0.26316	23.13684	172.6630008	2.749410841	1.0
	Clayey sand (SC)	2	5.0	69.08	0.14	184.4	160.70	23.70	90.06	0.26316	2.546053	18.99293009	0.274941084	0.4
q = KiA													General Average	

Note

- A = Surface area
- k = Soil permeability (from Hwy Subdrainage Design Report No. FHWA - TS-80-224 - Page 48-49) and Roy E. Hunt, Geotechnical Engineering Investigation Handbook, 2nd Edition - Page 187 table 3.12
- H = ground water elevation
- H₀ = elevation the bottom of excavation
- dH = water head
- ds = gradient distance $Li = 3.8 \times (H - H_0) \dots \dots$ Ref. FHWA-TS-80-224 Page 66
- *i = dh/ds
- q total = (gallon/day/ft²) = q total (gallon/day) total surface area

ATTACHMENT B

DEWATERING LOCATION PLAN

DIST	COUNTY	ROUTE	TOTAL SHEETS	SHEET NO.
04	Soi	80	24.8/25.2	1

DATE PLOTTED	06-08-10
DATE PLOTTED	06-MAY-2011

PROJECT ENGINEER	VIET T. HAN
REGISTERED CIVIL ENGINEER	DATE 02-18-09
NO. 51564	EXP. 8-30-10
CIVIL	

CONTRACT NO. 04-0A0901
CU 04279
EA 0A0900

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE 02-18-09
VIET T. HAN
NO. 51564
EXP. 8-30-10
CIVIL

PLANS APPROVAL DATE
FEBRUARY 18, 2009
THE STATE OF CALIFORNIA OFFICE OF THE REGISTERED PROFESSIONAL ENGINEERS AND ARCHITECTS
RESponsible for the accuracy and completeness of scanned copies of this plan sheet.

CONTRACT NO. 04-0A0901
CU 04279
EA 0A0900

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE 02-18-09
VIET T. HAN
NO. 51564
EXP. 8-30-10
CIVIL

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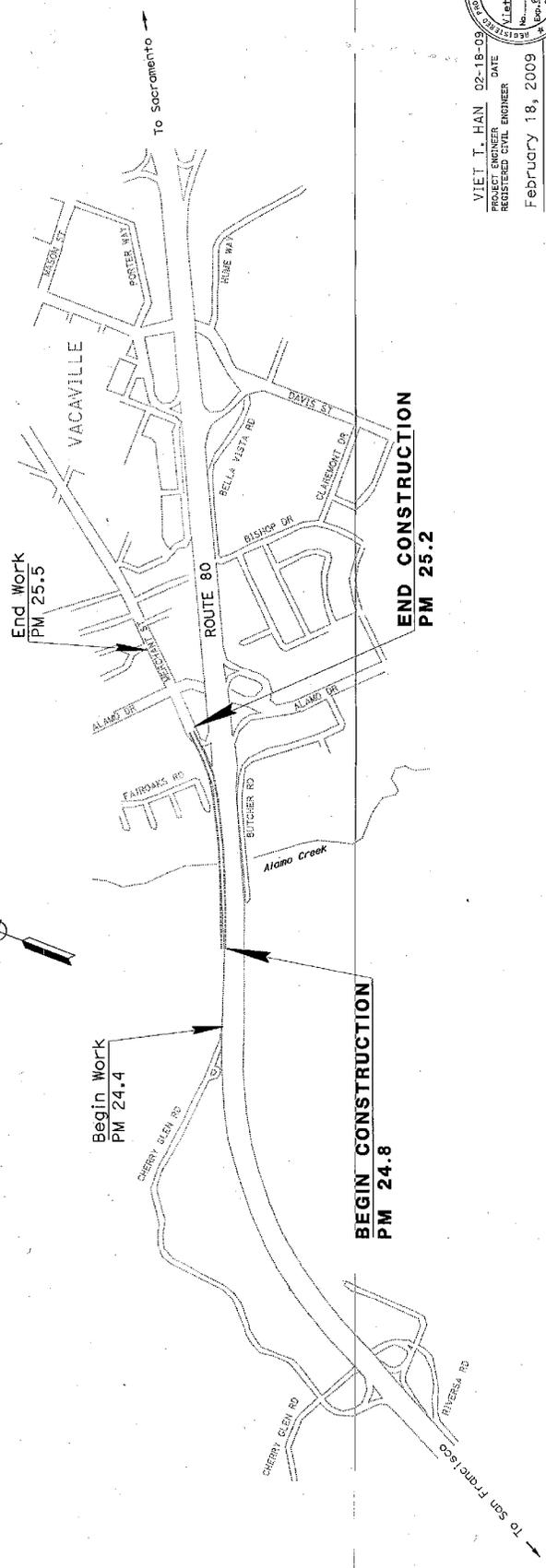
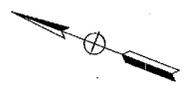
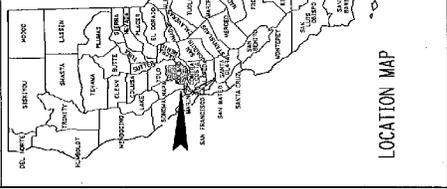
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SOLANO COUNTY
IN AND NEAR VACAVILLE
FROM 0.5 MILE WEST OF ALAMO CREEK BRIDGE
TO MERCHANT ST

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

INDEX OF PLANS

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND LOCATION MAP
2	LAYOUTS
3	TYPICAL CROSS SECTIONS AND CONSTRUCTION DETAILS
4	CONSTRUCTION AREA SIGNS
5	SUMMARY OF QUANTITIES
6	REVISED STANDARD PLANS

THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT ARE INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.



NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE NOTICE TO BIDDERS.

BORDER LAST REVISED 4/11/2008

CALTRANS WEB SITE IS: [HTTP://WWW.DOT.CA.GOV/](http://www.dot.ca.gov/)

RELATIVE BORDER SCALE
1" = 30' INCHES

USERNAME: s12780
JOB FILE: 11764474.dgn

DESIGN ENGINEER	VIET HAN
PROJECT MANAGER	SAHEER KHOURI

STATE	COUNTY	ROUTE	TOTAL PROJECT MILES	SHEET NO.
CA	SO.	80	R24.8 / R25.2	1

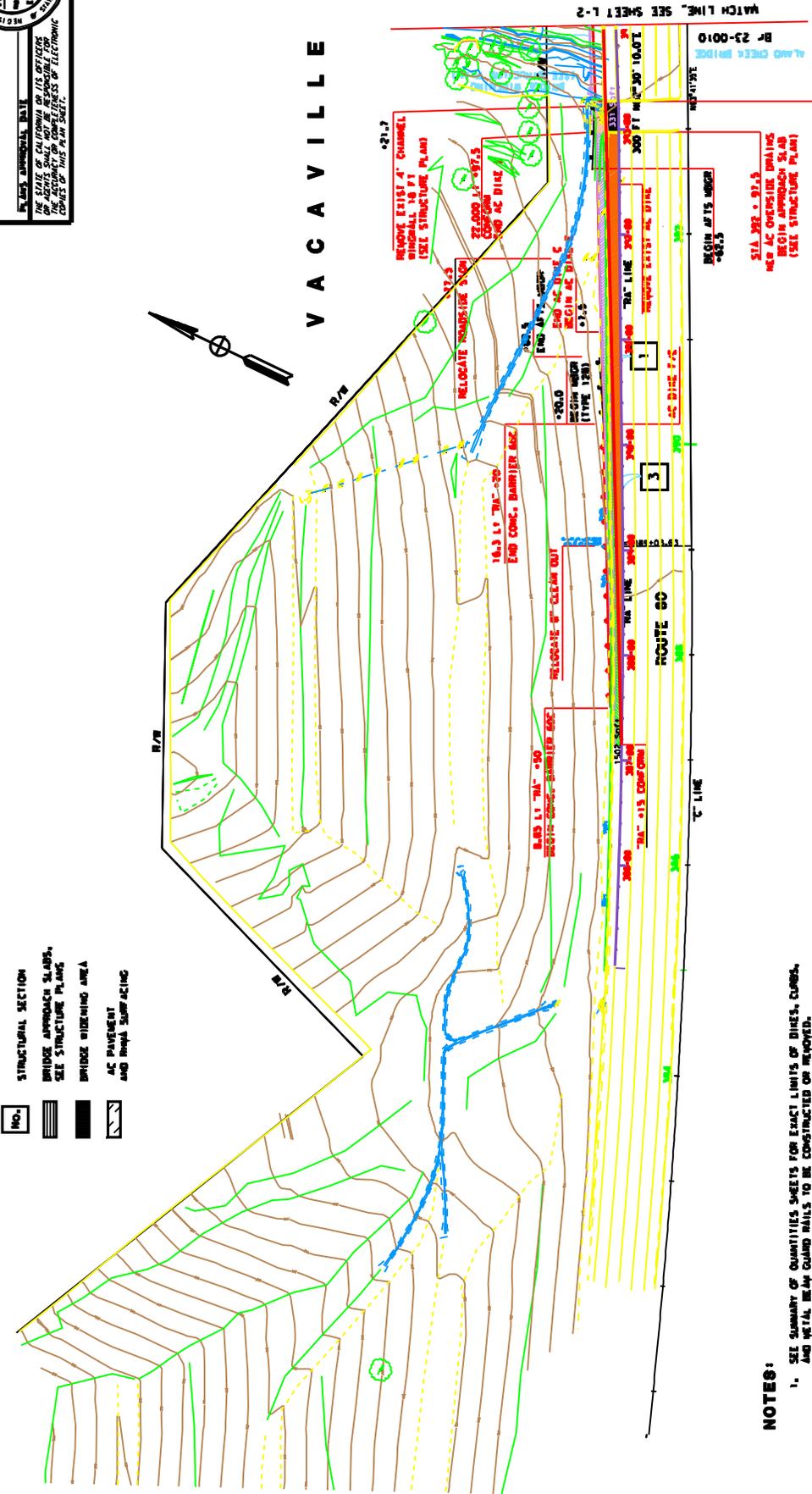
REGISTERED CIVIL ENGINEER DATE: 11/11/11
 LICENSE NO.: 31341
 EXPIRES: 11/11/11
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 CIVIL ENGINEERING
 REGISTERED CIVIL ENGINEER DATE: 11/11/11
 LICENSE NO.: 31341
 EXPIRES: 11/11/11
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 CIVIL ENGINEERING

LEGEND:

- STRUCTURAL SECTION
- BRIDGE APPROACH SLABS, SEE STRUCTURE PLANS
- BRIDGE DIMENSION AREA
- AC PAVEMENT AND ROAD SURFACING



VACAVILLE



- NOTES:**
- SEE SUMMARY OF QUANTITIES SHEETS FOR EXACT LIMITS OF DIKES, COMB. AND VET. BAY GROUND PILLS TO BE CONSTRUCTED OR REPOSED.
 - SEE STRUCTURE PLANS FOR STRUCTURE APPROACH SLAB CONSTRUCTION.
 - SEE SUMMARY OF QUANTITIES SHEETS FOR STATION LIMITS AND LOCATION OF REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE).
 - SEE CONSTRUCTION DETAILS SHEET C-1 FOR OFFG. RWMA AND RWMA PAVEMENT DETAIL.
 - LOCATIONS OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
 - FOR COMPLETE RIGHT OF WAY AND ACCURATE ASSESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

LAYOUT
 SCALE: 1" = 50'

ATTACHMENT C

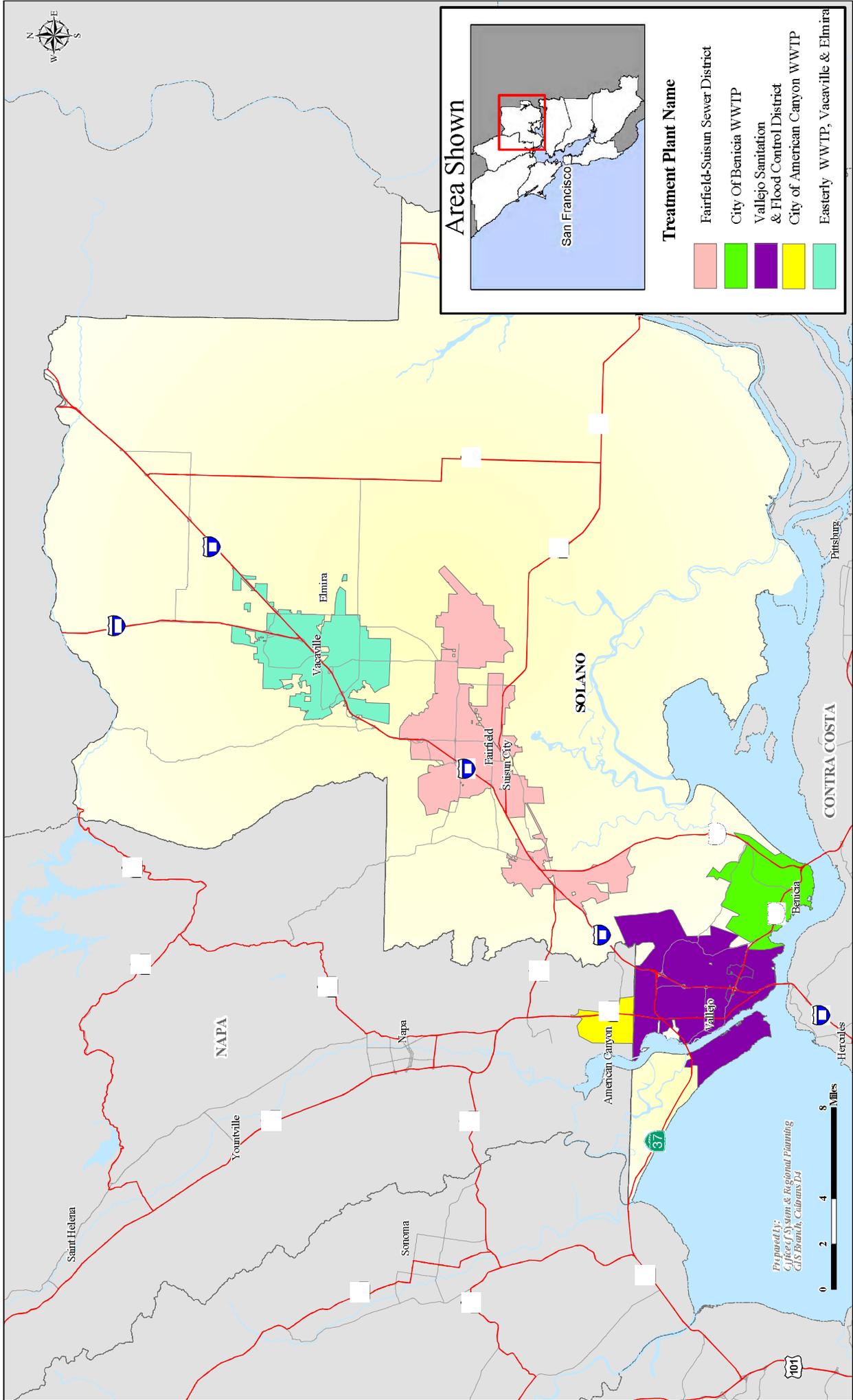
LIST OF PUBLICLY OWNED TREATMENT
WORKS (POTW) FACILITY

	City Discharger	Treatment Plant Name	Permit No.	Current Order No.	WDR Discharger Name	Discharger Contact Name	Contact Phone No.	Contact Email	Mail Address	Satellite / Regional	Ct Contact for Groundwater & De-Watering Discharges	Service Area of the POTW
95	Fairfield-Suisun Sewer District Subregional WWTP	Fairfield-Suisun Sewer District Subregional WWTP	CA0038024	98-077	Fairfield-Suisun Sewer District Subregional WWTP	Larry Bahr	707-429-8930	lbahr@fssd.com	James pritchard, Sewer Maintenance Manager, City of Fairfield, 420 Gregory St., Fairfield, CA 94533	R	Contact either Donna Dessoir or Dennis Ariza @ 707-429-8930. One year permit for \$100, and .05 per Gallon fee see 17 page fax of 6/28/04	Per Larry Bahr: "this is the treatment plant (with a few very minor exceptions) for the corporate limits of the cities of Fairfield and Suisun
96					City of Fairfield	James Pritchard	707-428-7415	jpritchard@ci.fairfield.ca.us	James pritchard, Sewer Maintenance Manager, City of Fairfield, 420 Gregory St., Fairfield, CA 94533	S	Same as Fairfield-Suisun - see line # A - 95	Sends their WW to Fairfield-Suisun - see Line # A -95
97					City of Suisun City	Gary Cullen	707-421-7340	gcullen@suisun.com	Gary Cullen, City Engineer, City of Suisun City, 701 Civic Center Blvd., Suisun City, CA 94585	S	Same as Fairfield-Suisun - see line # 95	Sends their WW to Fairfield-Suisun - see Line # A -95
98	City of Benicia WWTP	City of Benicia WWTP	CA0038091	01-096	City of Benicia WWTP	John Bailey	707-746-4336	bailey@ci.benicia.ca.us	John Bailey, 614 East 5th Street, Benicia, CA 94510	R	Contact: John Bailey @ 707-746-4294 (or Vicki Shidell (4295) or Peter Fong. Per J.B.: "case-by-case, but DO allow, willing to accommodate. Permit, testing, and sampling are all required	The City of Benicia - "possibly some small unincorporated areas of Solano Co. - but all of our customers have Benicia addresses..."
99	Vallejo Sanitation & Flood Control District	Vallejo Sanitation & Flood Control District	CA0037699	00-026	Vallejo Sanitary & Flood Control District	Daniel Tatolla	707-644-8949 x261	dtatolla@vsfcd.com	Daniel Tatolla, Environmental Services Director, 450 Ryder St., Vallejo, CA 94590	R	Contact Doug Scott @ 707-644-8949 x 260 Has worked with Ct on 37/29 project - "if uncontaminated can go to the storm sewer" Has permit and testing process - every situation is special	City of Vallejo, Mare Island, Hiddenbrooke Golf Course and "a few other small pockets"
100	Mare Island	Mare Island			City of Vallejo	John Cerini, Mark Akaba	707-648-4302	akaba@ci.vallejo.ca.us , cerini@ci.vallejo.ca.us	Mark Akaba, Utility Director, 555 Santa Clara St., Vallejo, CA 94590		Same as Vallejo Sanitary & Flood Control District - see Line # A - 99	Same as Vallejo Sanitary & Flood Control District - see Line # A - 99
	Vacaville	Easterly WWTP				Jacqueline McCall	707-469-6416		PO Box 220 Elmira		Jacqueline McCall	Vacaville

ATTACHMENT D

SOLANO COUNTY-POTW SERVICE AREA

Solano County - POTW Service Areas





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

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



August 31, 2012

Jeffrey G. Jensen
California Department of Transportation
111 Grand Avenue
Oakland CA 94623

Subject: Final Lake or Streambed Alteration Agreement
Notification No. 1600-2012-0148-R3
Interstate 80, Alamo Creek Bridge

Dear Mr. Jensen:

Enclosed is the final Streambed Alteration Agreement (“Agreement”) for the Alamo Drive On-ramp Widening Project (“Project”). Before the Department may issue an Agreement, it must comply with the California Environmental Quality Act (“CEQA”). In this case, the Department, acting as a lead agency, determined your project is exempt from CEQA and filed a notice of exemption (“NOE”) on August 31, 2012.

Under CEQA, filing a NOE starts a 35-day period within which a party may challenge the filing agency’s approval of the project. You may begin your project before the 35-day period expires if you have obtained all necessary local, state, and federal permits or other authorizations. However, if you elect to do so, it will be at your own risk.

If you have any questions regarding this matter, please contact Melissa Escaron, Staff Environmental Scientist, at (707) 339-0334 or mescaron@dfg.ca.gov.

Sincerely,

Craig J. Weightman
Acting Environmental Program Manager
Bay Delta Region

cc: Frances Malamud-Roam
Warden Shelton
Melissa Escaron

CALIFORNIA DEPARTMENT OF FISH AND GAME
BAY DELTA REGION
7329 SILVERADO TRAIL
NAPA, CALIFORNIA 94558
(707) 944-5520
WWW.DFG.CA.GOV



STREAMBED ALTERATION AGREEMENT
NOTIFICATION NO. 1600-2012-0148-R3
Alamo Creek

CALIFORNIA DEPARTMENT OF TRANSPORTATION
INTERSTATE 80, ALAMO DRIVE ONRAMP WIDENING PROJECT

This Streambed Alteration Agreement (Agreement) is entered into between the California Department of Fish and Game (DFG) and California Department of Transportation as represented by Mr. Jeffrey Jensen.

RECITALS

WHEREAS, pursuant to Fish and Game Code (FGC) section 1602, Permittee notified DFG on April 6, 2012 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 in Alamo Creek at the Interstate 80 bridge crossing, in the County of Solano, State of California.

PROJECT DESCRIPTION

The proposed Project will widen the Alamo Creek Bridge to the north by 10 feet. To accommodate this work the existing Alamo Creek Bridge abutments and piers walls will be widened by 10 ft.

The proposed bridge widening will employ the following construction methods:

- Establishing a temporary access road to allow foot and light vehicle traffic down to the creek area.
- Excavating the abutment areas using small equipment such as a small excavator or backhoe.
- Drilling 24" cast in drilled hole piles at the abutments and pouring concrete from the top of the bridge embankments.
- Installing a diversion dam between pier 2 and pier 3, if the creek has flowing water present.
- If necessary, installing a shoring system for deep excavation below the creek bed.
- Constructing a work platform using 12 x 12 foot mat, or adding rocks on top of filter fabric to support drilling equipment for both piers.
- Drilling piles, removing dirt, lowering steel cage and pouring piles by pumping concrete from above.
- Forming and pouring the pier walls using concrete pumps.
- Installing falsework to support the concrete bridge deck.
- Pouring bridge deck from the top.
- Removing falsework from the creek.
- Restoring temporary impact area to preconstruction contour and condition.

Schedule

Work in the creek is scheduled to occur between June 15 and October 15 and is anticipated to take 100 days.

Equipment

All clearing and grubbing will be completed either by hand using hand tools and/or small power tools, or by using backhoes and excavators. Other equipment to be used may include: a small bulldozer to grade the temporary access road; a backhoe, excavator, and front loader to collect debris and load into dump trucks for offsite disposal; drill augers; cranes; concrete mixer trucks and pump trucks to pump concrete for all cast-in-place structures.

PROJECT IMPACTS

Approximately 10 linear feet (800 square feet) of permanent impacts to the bed and bank of the creek and 30 linear feet (1,300 square feet) of temporary disturbance to the bed and bank of the creek will result from the bent excavation and installation, placement of a construction work platform and the temporary access road down to the creek.

Existing fish or wildlife resources the project could substantially adversely affect include:

- riparian habitat
- historic salmonid habitat
- aquatic invertebrates
- amphibians
- nesting birds
- Western pond turtles

The adverse effects the project could have on the fish or wildlife resources identified above include:

- increased shading
- permanent and temporary loss of natural bed and bank
- loss of habitat
- water quality degradation
- short-term release of contaminants
- tree removal
- disruption to nesting birds and other wildlife

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 biological monitors and all

supervisory personnel who will be working on the project at the project site on behalf of Permittee, including but not limited to contractors, subcontractors, and inspectors.

- 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, DFG shall contact Permittee to resolve any conflict.
- 1.4 Project Site Entry. Permittee agrees that DFG personnel may enter the project site at any time with notification to the Resident Engineer to verify compliance with the Agreement.

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 To minimize adverse impacts to fish and wildlife all work described in the project location and description shall be confined to the period of June 15 to October 15. Revegetation work is not confined to this time period.

2.2 At least 30-days prior to commencing project activities covered by this Agreement, the Permittee shall submit to DFG, for review and approval, the qualifications for a number of biologists (Qualified Biologists) that shall oversee the implementation of the conditions in this Agreement. At a minimum, the Qualified Biologists shall have a combination of academic training and professional experience in biological sciences and related resource management activities. The Qualified Biologists shall communicate to the Resident Engineer when any activity is not in compliance with this Agreement and the Resident Engineer shall immediately stop the activity that is not in compliance with this Agreement.

2.3 Within 48 hours prior to construction, a Qualified Biologist shall conduct a wildlife survey, at the appropriate time of day, focusing on presence of Western pond turtle (*Clemmys marmorata*) and Foothill yellow legged frog (*Rana boylei*). If any Western pond turtles or Foothill yellow legged frogs are found, the Permittee shall coordinate with the DFG to incorporate protection measures into the project.

2.4 Permittee shall conduct work defined in the above project description, and within the project area, during periods of dry weather. The project area is defined as the bed, bank, channel, and associated riparian habitat. The Permittee shall monitor forecasted precipitation. When $\frac{1}{4}$ inch or more of precipitation is forecasted to occur, the Permittee shall stop work before precipitation commences. No activity of the project may be started if its associated erosion control measures cannot be completed prior to the onset of precipitation. After any storm event, the Permittee shall inspect all sites currently under construction and all sites scheduled to begin construction within the next 72 hours for erosion and sediment problems and take corrective action as needed. Seventy-two hour weather forecasts from National Weather Service shall be consulted and work shall not start back up until runoff ceases and there is less than a 30% forecast for precipitation for the following 24-hour period.

2.5 Permittee shall utilize erosion control measures throughout all phases of operation where sediment runoff from exposed slopes threatens to enter waterways. At no time shall silt laden runoff be allowed to enter the stream or directed to where it may enter the stream. Erosion control installations shall be monitored for effectiveness and shall be repaired or replaced as recommended by the Qualified Biologist.

2.6 Permittee shall revegetate temporarily disturbed areas with native grasses, shrubs, and trees to provide cover and erosion control. Permittee shall submit a detailed Onsite Revegetation Plan to DFG for review and approval prior to start of construction.

2.7 The site shall be dewatered as necessary to provide an adequately dry work area. Any muddy or otherwise contaminated water shall be pumped to a settling tank prior to re-entering the creek. Work site dewatering can be accomplished using pumps and or siphons.

2.8 Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations.

2.9 The perimeter of the work site shall be adequately fenced using high visibility Environmentally Sensitive Area (ESA) fencing to prevent damage to adjacent riparian habitat. No construction activities, within the riparian zone, will be allowed within the habitat protected by the ESA fencing (this does not preclude activities from occurring on the bridge or deck work above the ESA area).

2.10 To protect nesting birds, no project activities shall occur from February 15 through August 31 unless nesting bird surveys have been completed by a Qualified Biologist. To prevent nest abandonment, a Qualified Biologist shall survey within 500 feet of the proposed Project for

nesting birds. If nests are found within the Project site or 500 feet from the Project then the Qualified Biologist shall establish a 50-foot buffer radius for nests of non-raptor bird species or a 300-foot buffer radius for raptor nests. The Qualified Biologist shall monitor the nesting birds and shall increase the buffer, through the Resident Engineer, if the Qualified Biologist determines the birds are showing signs of unusual or distressed behavior that may be the result of Project activities. To prevent encroachment, the established buffer(s) shall be clearly marked by high visibility material. Surveys shall be conducted during periods of peak activity (early morning, dusk) and shall be of sufficient duration to observe movement patterns. Identified nests shall be reported to DFG. The buffer area shall be fenced off from work activities and avoided until the young have fledged, as determined by a Qualified Biologist. During work, should birds indicate unusual or distressed behavior that could be indicative of future nest abandonment, the Qualified Biologist shall stop work immediately, through the Resident Engineer, and consult DFG on how to proceed.

2.11 If any wildlife is encountered during the course of project activities, said wildlife shall be allowed to leave the area unharmed and on their own volition.

2.12 Permittee shall comply with all applicable state and federal laws, including the California and Federal Endangered Species Act. This Agreement does not authorize the take of any state or federally endangered listed species. Liability for any take or incidental take of such species remains the responsibility of the Permittee for the duration of the project. Any unauthorized take of listed species may result in prosecution and nullification of the Agreement.

2.13 Concrete shall be excluded from surface water for a period of 30-days after it is poured/sprayed. During that time the concrete shall be kept moist and runoff from the concrete shall not be allowed to enter any water body. Commercial sealants may be applied to the concrete surface where difficulty in excluding flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is cured. If groundwater comes into contact with fresh concrete, it shall be prevented from flowing towards surface water.

2.14 Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located outside of the creek channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the creek shall be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream must be checked and

maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life.

2.15 Refueling of mobile construction equipment and vehicles shall not occur within 50 feet of any water body, or anywhere that spilled fuel could drain to a water body. Refueling of stationary equipment requiring breakdown and setup to move will remain in place. All equipment shall be refueled with appropriate drip pans, absorbent pads, and water quality Best Management Practices. Equipment and vehicles operating in the project area shall be checked and maintained daily to prevent leaks of fuels, lubricants, or other liquids.

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 At least 30-days prior to construction, Permittee shall submit a plan identifying an offsite mitigation location to DFG for review and approval. The mitigation plan shall mitigate permanent stream impacts at a minimum of a 3:1 ratio and temporary impacts at a 1:1 ratio. The Project will result in approximately 10 linear feet (800 square feet) of permanent impacts to the bed and bank of the creek and 30 linear feet (1,300 square feet) of temporary disturbance. Accordingly, mitigation for permanent impacts will be at least 30 linear feet (2400 square feet) and mitigation for temporary impacts will be 30 linear feet (1,300 square feet).

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:

Jeffrey G. Jensen, California Department of Transportation
111 Grand Ave.
Oakland, Ca 94623
Fax: 510.622.8729
Email: jeffrey_jensen@dot.ca.gov

To DFG:

Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, California 94558
Attn: Lake and Streambed Alteration Program – Melissa Escaron
Notification #1600-2012- 0148-R3
Fax (707) 944-5553
mescaron@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 31, 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.

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.

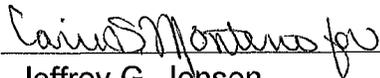
AUTHORIZATION

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

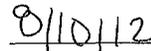
The undersigned accepts and agrees to comply with all provisions contained herein.

FOR CALIFORNIA DEPARTMENT OF TRANSPORTATION



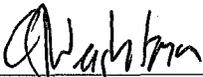
Jeffrey G. Jensen

Office Chief



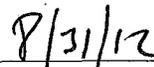
Date

FOR DEPARTMENT OF FISH AND GAME



Craig J. Weightman

Acting Environmental Program Manager



Date

Prepared by: Melissa Escaron
Staff Environmental Scientist

Date Sent: June 26, 2012
Revision Sent: August 10 2012

FOR DEPARTMENT USE ONLY

rec'd 5/15/12

Date Received	Amount Received	Amount Due	Date Complete	Notification No.
5/10/12	\$ 0	\$ 4482.75		1600-2012-0148-3



AK# 062-979329
CA Dept of Transportation

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME
NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Escaron
Shelton
Mason



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

1. APPLICANT PROPOSING PROJECT

Fish & Game

Name	Jeffrey G. Jensen			MAY 10 2012
Business/Agency	Department of Transportation (Caltrans) District 4			Yountville
Street Address	111 Grand Avenue, MS 8			
City, State, Zip	Oakland, CA 94612			
Telephone	(510) 622-0114	Fax	(530) 660-9214	
Email	jeffrey_jensen@dot.ca.gov			

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

Name	Frances Malamud-Roam		
Street Address	111 Grand Avenue, MS 8		
City, State, Zip	Oakland, CA 94612		
Telephone	(510) 286-5376	Fax	(510) 286-6374
Email	Frances_Malamud-Roam@dot.ca.gov		

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

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name		Alamo Drive On-Ramp Lengthening Project		
B. Agreement Term Requested		<input checked="" type="checkbox"/> Regular (5 years or less) <input type="checkbox"/> Long-term (greater than 5 years)		
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (year)	Ending (year)	Start Date (month/day)	End Date (month/day)	
2013	2014	06/15	10/15	
				200.00

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

5. AGREEMENT TYPE

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

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

6. FEES

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

	A. Project	B. Project Cost	C. Project Fee
1	Alamo Drive On-ramp Lengthening and Bridge Widening	\$2,000,000.00	\$4,482.75
2			
3			
4			
5			
		D. Base Fee (if applicable)	
		E. TOTAL FEE ENCLOSED	\$4,482.75

7. PRIOR NOTIFICATION OR ORDER

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

Yes (Provide the information below) No

Applicant: _____ Notification Number: _____ Date: _____

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

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

Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

8. PROJECT LOCATION

<p>A. Address or description of project location.</p> <p><i>(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)</i></p> <p>This proposed project is located in the city of Vacaville in Solano County, at the Alamo Drive on-ramp to westbound I-80 (post mile [PM] 24.8 to 25.2), at latitude 38 20'41.46" N, and longitude 122 00'06.38"W. See attached map and aerial image (Attachment 2).</p> <p>Driving directions: From Oakland: Merge onto I-80 E for 44 miles. Take exit 53 for Alamo Drive toward Merchant Street. Keep left at fork and merge onto Alamo Drive. Turn left onto Merchant Street and take the I-80 W on-ramp. From Sacramento: Merge onto I-80 W for 28 miles. Take Mason Street exit. Turn left onto Mason Street. Turn left onto Merchant Street and take the I-80 W on-ramp.</p> <p style="text-align: right;"><input type="checkbox"/> Continued on additional page(s)</p>				
B. River, stream, or lake affected by the project.		Alamo Creek		
C. What water body is the river, stream, or lake tributary to?		Ulatis Creek		
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown		
E. County	Solano			
F. USGS 7.5 Minute Quad Map Name		G. Township	H. Range	I. Section
Fairfield North		06N	01W	29
<input type="checkbox"/> Continued on additional page(s)				
K. Meridian (check one)		<input type="checkbox"/> Humboldt <input checked="" type="checkbox"/> Mt. Diablo <input type="checkbox"/> San Bernardino		
L. Assessor's Parcel Number(s)				
Caltrans Right of Way				
<input type="checkbox"/> Continued on additional page(s)				
M. Coordinates (If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes)				
Latitude/Longitude	Latitude: 38 20'41.46" N		Longitude: 122 00'06.38"W	
	<input checked="" type="checkbox"/> Degrees/Minutes/Seconds		<input type="checkbox"/> Decimal Degrees	<input type="checkbox"/> Decimal Minutes
UTM	Easting: 587241.7	Northing: 4244533.3		<input checked="" type="checkbox"/> Zone 10 <input type="checkbox"/> Zone 11
Datum used for Latitude/Longitude or UTM		<input type="checkbox"/> NAD 27 <input checked="" type="checkbox"/> NAD 83 or WGS 84		

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

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

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

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

10. PROJECT DESCRIPTION

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

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

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

Caltrans proposes to lengthen the westbound on-ramp onto I-80 at Alamo Drive in the City of Vacaville in Solano County. The existing Alamo Creek bridge is a 3-span bridge and will be widened by 10 feet on the north side of the ramp. Text continues in Attachment 1.

Continued on additional page(s)

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

Small mechanical tools, or backhoes and excavators for clearing; dozer to grade the temporary access road; a backhoe or excavator and a front loader will collect debris and load into dump trucks for offsite disposal; drill augers; cranes; concrete mixer trucks and pump trucks.

Continued on additional page(s)

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

Yes No (Skip to box 11)

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

Yes (Enclose a plan to divert water around work site)
 No

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

11. PROJECT IMPACTS

<p>A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.</p> <p>The impacts to aquatic and riparian habitat by the proposed project construction will be limited to 10 linear feet of permanent modification and 30 linear feet of temporary modification.</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Continued on additional page(s)</p>														
<p>B. Will the project affect any vegetation? <input checked="" type="checkbox"/> Yes (Complete the tables below) <input type="checkbox"/> No</p>														
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Vegetation Type</th> <th style="text-align: left;">Temporary Impact</th> <th style="text-align: left;">Permanent Impact</th> </tr> </thead> <tbody> <tr> <td style="padding: 2px;">Non-native grassland</td> <td style="padding: 2px;">Linear feet: <u> 600 </u> Total area: <u> 5,000 sq ft </u></td> <td style="padding: 2px;">Linear feet: <u> 600 </u> Total area: <u> 14,500 sq ft </u></td> </tr> <tr> <td style="padding: 2px;">riparian (grasses, small shrubs, non-native prunus & 1 small oak)</td> <td style="padding: 2px;">Linear feet: <u> 30 </u> Total area: <u> 1300 sq ft </u></td> <td style="padding: 2px;">Linear feet: <u> 10 </u> Total area: <u> 800 sq ft </u></td> </tr> </tbody> </table>	Vegetation Type	Temporary Impact	Permanent Impact	Non-native grassland	Linear feet: <u> 600 </u> Total area: <u> 5,000 sq ft </u>	Linear feet: <u> 600 </u> Total area: <u> 14,500 sq ft </u>	riparian (grasses, small shrubs, non-native prunus & 1 small oak)	Linear feet: <u> 30 </u> Total area: <u> 1300 sq ft </u>	Linear feet: <u> 10 </u> Total area: <u> 800 sq ft </u>					
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Tree Species	Number of Trees to be Removed	Trunk Diameter (range)												
Prunus dulcis	4	4-6 inch												
Quercus lobata	1	6 inch												
<p>C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?</p> <p><input checked="" type="checkbox"/> Yes (List each species and/or describe the habitat below) <input type="checkbox"/> No <input type="checkbox"/> Unknown</p> <p>While no listed fish species are present in the creek due to a downstream barrier, the project has been assessed for Essential Fish Habitat for Chinook salmon. +</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Continued on additional page(s)</p>														
<p>D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.</p> <p>CA Natural Diversity Database, U.S. Fish and Wildlife species list, NMFS technical assistance, historic observations of Chinook salmon in Ulatis Creek, but unconfirmed in Alamo Creek.</p> <p style="text-align: right;"><input checked="" type="checkbox"/> Continued on additional page(s)</p>														
<p>E. Has a biological study been completed for the project site?</p> <p><input checked="" type="checkbox"/> Yes (Enclose the biological study) <input type="checkbox"/> No</p> <p><i>Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.</i></p>														
<p>F. Has a hydrological study been completed for the project or project site?</p> <p><input checked="" type="checkbox"/> Yes (Enclose the hydrological study) <input type="checkbox"/> No</p> <p><i>Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.</i></p>														

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

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

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

Erosion control measures shall be used to address all disturbed soil areas (including temporary access paths). Measures proposed in the project include compost blanket, and compost incorporated in combination with hydroseeding. Sediment controls, including fiber rolls, will be used to retain sediments and to help control runoff into Alamo Creek.

Continued on additional page(s)

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

Construction in the riparian/stream habitat areas will be limited to the dry season, from June 15 to October 15.

A CDFG-approved biological monitor will be present to conduct preconstruction clearance surveys and to monitor initial ground-disturbing activities. Full discussion of avoidance and minimization measures continues in Attachment 1.

Continued on additional page(s)

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

Caltrans will plant 5 oaks (*Q. agrifolia*), tree pot-sized (10 in long), to replace the one oak that is removed. The slope above the bank that will be temporarily disturbed by the project construction will be hydroseeded to stabilize.

Continued on additional page(s)

13. PERMITS

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

- | | | | |
|----|---|---|--|
| A. | <u>U.S. Army Corps of Engineers 404 NWP 14 (non-reporting)</u> | <input checked="" type="checkbox"/> Applied | <input type="checkbox"/> Issued |
| B. | <u>RWQCB 401 Certification</u> | <input checked="" type="checkbox"/> Applied | <input type="checkbox"/> Issued |
| C. | <u>NOAA/NMFS Letter of Concurrence</u> | <input type="checkbox"/> Applied | <input checked="" type="checkbox"/> Issued |
| D. | Unknown whether <input type="checkbox"/> local, <input type="checkbox"/> state, or <input type="checkbox"/> federal permit is needed for the project. (Check each box that applies) | | |

Continued on additional page(s)

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

14. ENVIRONMENTAL REVIEW

<p>A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?</p> <p><input checked="" type="checkbox"/> Yes (Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each) <input type="checkbox"/> No (Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared)</p>			
<input checked="" type="checkbox"/> Notice of Exemption <input type="checkbox"/> Initial Study <input type="checkbox"/> Negative Declaration <input type="checkbox"/> THP/ NTMP	<input type="checkbox"/> Mitigated Negative Declaration <input type="checkbox"/> Environmental Impact Report <input type="checkbox"/> Notice of Determination (Enclose) <input type="checkbox"/> Mitigation, Monitoring, Reporting Plan	<input checked="" type="checkbox"/> NEPA document (type): <u>CE(Attachment 8)</u> <input checked="" type="checkbox"/> CESA document (type): <u>CE(Attachment 8)</u> <input checked="" type="checkbox"/> ESA document (type): <u>NO EFFECTS</u>	
<p>B. State Clearinghouse Number (If applicable)</p>			
<p>C. Has a CEQA lead agency been determined?</p>		<input checked="" type="checkbox"/> Yes (Complete boxes D, E, and F) <input type="checkbox"/> No (Skip to box 14.G)	
<p>D. CEQA Lead Agency</p>	<p style="text-align: center;">California Department of Transportation, District 4</p>		
<p>E. Contact Person</p>	<p>Wahida Rashid</p>	<p>F. Telephone Number</p>	<p>(510) 286-5935</p>
<p>G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.</p> <p>Not applicable.</p> <p style="text-align: right;"><input type="checkbox"/> Continued on additional page(s)</p>			
<p>H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?</p> <p><input type="checkbox"/> Yes (Enclose proof of payment) <input checked="" type="checkbox"/> No (Briefly explain below the reason a filing fee has not been paid)</p> <p>Not applicable, project is a CE.</p> <p><i>Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.</i></p>			

15. SITE INSPECTION

<p>Check one box only.</p> <p><input checked="" type="checkbox"/> In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.</p> <p><input type="checkbox"/> I request the Department to first contact (insert name) _____ at (insert telephone number) _____ to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.</p>
--

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

16. DIGITAL FORMAT

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

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

No

17. SIGNATURE

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

Carrie S. Montano

Signature of Applicant or Applicant's Authorized Representative

5/9/12

Date

Jeffrey G. Jensen, Office Chief

Print Name

NOTICE OF EXEMPTION

To: Office of Planning and Research
Post Office Box 3044
Sacramento, California 95812-3044

From: California Department of Fish and Game
Bay Delta Region
7329 Silverado Trail
Napa, California 94558

Project Title: Alamo Drive On-ramp Widening Project, Interstate 80

Specific Project Location: Interstate 80 at Alamo Creek Bridge

Project Location - City and County: Vacaville, Solano County

Description of Project: The proposed project will widen the Interstate 80 Alamo Creek Bridge by 10 feet to the north. To accommodate this widening, the existing abutments will be extended, new piles will be installed in the creek bed and the three existing pier walls will be extended. A temporary access road will be constructed on the creek bank and a temporary work pad will be built in the creek bed to accommodate the drill rig. If flows are present in the creek, they will be diverted around the work site. Onsite temporary impacts will be address through a regarding, slope stabilization, and revegetation effort, while permanent impacts will be mitigated offsite as approved by the Department of Fish and Game. Issuance of a Streambed Alteration Agreement Number 1600-2012-0148-R3 is pursuant to Fish and Game Code Section 1602.

Name of Lead Agency Approving Project: California Department of Fish and Game

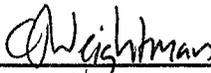
Name of Applicant, Person, or Agency Carrying Out Project: Jeffrey G. Jensen, California Department of Transportation

Applicant Address: 111 Grand Avenue, Oakland, CA 94623

Exempt Status - Class and Guidelines Section: Class 1 – Section 15301 et seq.

Reasons Why Project is Exempt: Existing facilities

Lead Agency Contact Person: Melissa Escaron, Staff Environmental Scientist, (707) 339-0334

Signature:  **Date:** August 31, 2012
Name: Craig J. Weightman, Acting Environmental Program Manager

Signed by Lead Agency

Date received for filing at OPR: _____

Signed by Applicant

State of California
Department of Transportation
Division of Engineering Services
Office of Design and Technical Services

Structures Hydraulics and Hydrology

Structures Final Hydraulic Report

ALAMO CREEK BRIDGE (WIDENING)

Located on Interstate 80 in Solano County

JOB:

Alamo Creek Bridge Widening
Bridge No. 23-0010
EA: 04-0A0900

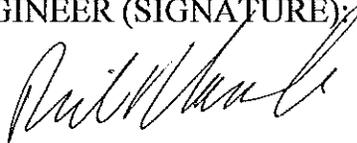
LOCATION:

04-SOL-080-PM 25.03

DATE:

August 26, 2011

REGISTERED CIVIL ENGINEER (SIGNATURE):



RICK R. MACALA, PE
Registration Number C67475

This report has been prepared under my direct supervision 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.

Hydrology/Hydraulic Report

GENERAL:

It is proposed to widen the existing Alamo Creek Bridge (Bridge No. 23-0010) by 8 feet 6 inches to 10 feet 6 inches along the Interstate 80 westbound edge of deck (in the upstream direction of the creek flow). The widening of Alamo Creek Bridge will accommodate the lengthening of the acceleration lane on Interstate 80 westbound onramp at Alamo Drive/Merchant Street.

See Figure 1 for a site map of the project location.

The existing structure is a continuous three span reinforced concrete slab with reinforced concrete diaphragm abutments. The support elements are reinforced pier walls on steel piles. The original right structure was built in 1936, a left structure was built in 1948, and in 1963 the two structures were connected with a median widening while also widening the whole structure in both the upstream and downstream edge of decks. The current bridge length is 72.5 feet and has a total width of 158 feet-4 inches.

The data and references of this hydraulic report are obtained from the following sources:

- Caltrans' Bridge Maintenance Records.
- "Preliminary Hydraulic Report – Widening of Alamo Creek Bridge" from Structure Hydraulics and Hydrology Branch, dated November 9, 2009.
- 1963 As-built General Plan, Foundation Plan, Abutment and Pier Details, and Log of Test Borings for the widening project of Alamo Creek Bridge (Br. No. 23-0010).
- 1963 As-built General Plan, Foundation Plan, and Abutment and Pier Details for the construction of the local bridge, Alamo Creek Frontage Road Bridge (Br. No. 23C-0042).
- General Plan for the proposed bridge widening from the Office of Bridge Design, Branch 8, dated April 14, 2011.
- Field topographical survey data provided by District 04 Survey Office and Structure Preliminary Investigations Branch, completed in June 2011.
- Field photo documentation dated August 2006 and October 2009.
- Historical cross sections at Alamo Creek Bridge dated October 1971, January 1994, August 2006, and October 2009.

Note: unless otherwise stated, all vertical elevations in this report are based from the North American Vertical Datum of 1988 (NAVD-88).

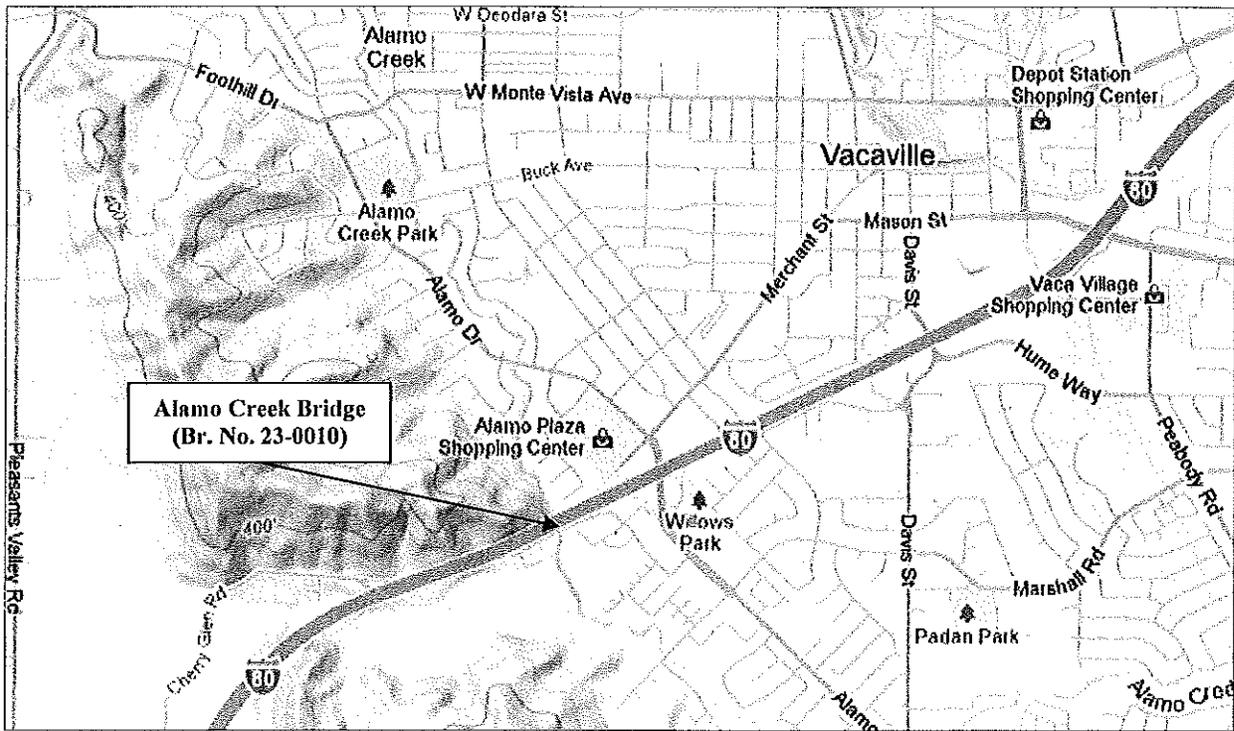


Figure 1: Site Map of Project Location.

DESIGN OBJECTIVES:

This hydraulic report addresses the introduced scour and hydraulic concerns of widening the existing Alamo Creek Bridge and its effects on the existing creek channel.

To achieve these objectives, a hydraulic model was developed using the U.S. Army Corps of Engineers' one-dimensional river analysis software HEC-RAS (v. 4.1.0). Two specific plans were modeled to cover all the aspects of the design and anticipated conditions:

1. Existing Conditions (no bridge widening) Plan, and
2. Proposed Conditions (10'-6" upstream widening) Plan.

Both design plans include the Alamo Creek frontage road/off-ramp Bridge. Just downstream of Alamo Creek Bridge (Br. No. 23-0010) is a local bridge, the Butcher Road off-ramp (Br. No. 23C-0042) from the eastbound Interstate 80. This local bridge needed to be included in both design plans due to the backwater effects caused by this bridge.

BASIN:

Alamo Creek drains a watershed of approximately 10.33 square miles above the bridge site at Interstate 80. Alamo Creek is a component of the Vaca Mountains drainage system that feeds the Ulatis Creek watershed and the Cache Slough system of the Sacramento River. Alamo Creek originates from the natural drainages of the eastern slope of the Vaca Mountains. Approximately

three miles north of Interstate 80, Alamo Creek flows out of the Vaca Mountains and flows south through the City of Vacaville.

The land use of the watershed includes dense suburban sprawl in the lower reaches to Needle-grass grasslands and sparse forests of oaks and Foothill pines in the upper watershed reaches. From its headwaters in the Vaca Mountains at an elevation of approximately 2,500 feet, Alamo Creek flows in a south easterly direction through Gates Canyon until it reaches the Vaca Valley floor at an elevation of approximately 180 feet near the project site. The watershed boundary is located within the USGS Quadrangle Maps for Mount Vaca and Fairfield North, from which these elevations were obtained. The channel bed upstream from the bridge site has a channel slope of approximately 0.33-percent.

The climate in the area is characterized by two well defined seasons of winter and summer. The winters are mild with frequent rain and summers are warm to hot with very little precipitation. Average annual precipitation over the watershed is approximately 29.4 inches. Temperatures for the area range between 37° F to 95° F with a mean annual temperature of about 61° F.

DISCHARGE:

Flood discharges for the Alamo Creek watershed in the vicinity of the Alamo Creek Bridge were estimated for the 50-year and 100-year flood frequencies. Table 1 provides the flood discharges for this project. These discharges are based on the most recent Federal Emergency Management Agency's (FEMA) Flood Insurance Study for Solano County¹.

Table 1: Design Discharges.

Flood Frequency	Peak Discharge (cfs)
50-Year	3,200
100-Year	3,400

STAGE, VELOCITY, AND FREEBOARD:

The 50-year and 100-year discharges were modeled through the Alamo Creek Bridge using the Existing Conditions Plan. Table 2 summarizes the hydraulic parameters at the upstream face of the bridge. Using the soffit elevation and the water surface elevations, the available freeboard was calculated. The existing conditions analysis provides a base comparison to the other design plan.

Table 2: Hydraulic Parameters for Alamo Creek Bridge under Existing Conditions.

Flood Frequency	Soffit Elevation (ft)	Water Surface Elevation (ft)	Average Velocity (fps)	Freeboard (ft)
50-Year	187.1	184.4	5.8	2.7
100-Year	187.1	185.3	5.6	1.8

¹ 2009 FEMA Flood Insurance Study for Solano County, California and Incorporated Areas (Flood Insurance Study Number 06095CV001A), Volumes 1-3, May 4, 2009.

Table 3 summarizes the hydraulic parameters after the upstream bridge widening (Proposed Conditions Plan). As can be seen from Table 3, the change in water surface elevation at the upstream face of bridge has increased by approximately 5.2-percent or an increase of 0.3-feet. This increase is very minimal and will not cause any backwater conditions that would adversely affect the channel to pass its flood discharges. All flood discharges are contained within the channel banks.

Table 3: Hydraulic Parameters for Alamo Creek Bridge under Proposed Conditions.

Flood Frequency	Soffit Elevation (ft)	Water Surface Elevation (ft)	Average Velocity (fps)	Freeboard (ft)	Δ Water Surface Elevation (ft)	Δ Average Velocity (fps)
50-Year	186.8	184.7	6.1	2.1	+0.3	+0.3
100-Year	186.8	185.6	5.9	1.2	+0.3	+0.3

STREAMBED AND CHANNEL SLOPES:

Subsurface conditions at the bridge site are based on the 1963 As-Built Log of Test Borings. Below the ground surface is approximately several feet of a fine sandy clayey silt to deeply weathered shale. This report assumes there is nothing unique about the soils supporting this structure that would prevent scour from reaching the predicted depths.

Field observations find the channel bed composed of loose sand and gravel from alluvium deposits. In addition, there is a significant amount of large 1/4-ton and larger riprap/rocks scattered in the channel bed upstream and under the bridge. These large rocks are most likely due to historical scour mitigation projects. The channel slopes near the bridge site and upstream appear to be stable with no signs of erosion.

DRIFT:

Field observations and photographic logs collected by Structure Maintenance and Investigations show heavy brush accumulation and small trees lining the slopes of this channel. The channel bed has no vegetation growth. Even with the heavy vegetation growth on the slopes, bridge maintenance records do not indicate any history of drift problems at the bridge site.

Structure Hydraulics does not expect to have any drift problems for any given flow condition.

SCOUR AND CHANNEL DEGRADATION:

Early bridge inspection reports have indicated that the original 1936 structure experienced scour levels at Pier 2 below the pile cap and exposure of the steel piles. At the time Pier 3's pile cap was exposed but no exposure of the steel piles. In 1946 the pile cap block at Pier 2 was extended by 2.0 feet and the scour hole on the right bank on the upstream side of the structure was filled with heavy rock riprap.

Since that time, there have been reports of pile cap exposure for Pier 2 but no reports regarding exposure of the steel piles. The extension of the pile cap and the deepening of the substructure components for all the widened portions of the bridge were designed deep enough to resist the ultimate scour elevations.

A total scour analysis was calculated for the proposed conditions, using the 100-year storm event, assuming only local pier scour with a hydraulic skew of 10-degrees. See Table 4 for a summary of the potential total scour elevations for the proposed bridge widening.

A site visit by Structure Hydraulics on October 2009 revealed that the bridge experiences an approximate 10-degree hydraulic skew at the pier walls. This confirms other site visits according to bridge maintenance records. In addition through historical cross-section analysis, the river channel just upstream of Alamo Creek Bridge appears to be vertically stable; therefore, the degradation component of total scour was not included.

With a bottom of footing elevation of approximately 164.5 feet (NAVD-88) for Piers 2 and 3, it should be noted the total scour elevations do not reach the bottom of either footing.

Table 4: Total Scour Conditions for the Proposed Bridge Widening.

Pier Location	Existing Approx. OG Elevation (ft)	Local Pier Scour Depth ¹ (ft)	Degradation ² (ft)	Total Scour Elevation (ft)
Pier 2	174.3	7.2	--	167.1
Pier 3	173.0	7.9	--	165.1

Notes:

1 – Local pier scour analysis included a 10-degree hydraulic skew.

2 – Total scour analysis did not include channel degradation. The channel is vertically stable under existing conditions.

REQUIRED WATERWAY:

Through hydraulic modeling it has been determined that Alamo Creek Bridge’s proposed widening is able to pass all flood discharges without soffit impact. The proposed bridge widening will have no significant impacts to the existing waterway at or near the bridge.

CONCLUSIONS / RECOMMENDATIONS:

- The proposed bridge widening of Alamo Creek Bridge was analyzed and determined not to cause any significant hydraulic or scour issues.
- The proposed bridge widening will raise the water surface elevation at the upstream edge of deck by approximately 0.3 feet.
- The soffit elevation of the proposed widening is approximately 186.8 feet.
- Predicted local pier scour elevations were calculated to be 167.1 feet for Pier 2 and 165.1 feet for Pier 3 during a 100-year storm event.

Summary Information for the Bridge Designer

All vertical elevations on this sheet are based on the NAVD 1988 vertical datum.

Minimum Soffit Elevation	186.8 ft
Anticipated Total Scour Elevation for Bents 2 and 3.	167.1 ft / 165.1 ft
Average Velocity (for 100-Yr Flood Frequency)	5.9 fps

HYDROLOGIC SUMMARY			
Drainage Area: 10.33 square miles			
	Design Flood	Base Flood	Overtopping Flood
Flood Frequency	50-Year	100-Year	>> 500-yr
Discharge	3,200 cfs	3,400 cfs	-
Water Surface Elevation at Bridge	184.7 ft	185.6 ft	-
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.			

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.



[Handwritten Signature]

REGISTERED CIVIL ENGINEER (SIGNATURE)

REGISTRATION NUMBER: C67475

DATE: August 26, 2011



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

REPLY TO
ATTENTION OF

June 25, 2012

Regulatory Division (SPK-2012-00543)

State of California
Department of Transportation
Attn: Mr. Jeffrey Jensen
111 Grand Avenue/P.O. Box 23660
Oakland, California 94623-0660

Dear Mr. Jensen:

We are responding to your June 8, 2012 request for a Department of the Army Nationwide Permit (NWP) verification for the Alamo Drive On-ramp Widening Project (EA 04-0A091). This approximately 0.01-acre project involves activities, including the discharge of dredged or fill material, into waters of the United States to widen the westbound I-80 overcrossing at Alamo Creek. The project is located at Alamo Creek, Section 36, Township 6 North, Range 2 West, Mount Diablo Meridian, Latitude 38.3448727125037°, Longitude -122.001695913979°, in Vacaville, Solano County, California.

Based on the information you provided, the proposed activity, resulting in the permanent loss of approximately 0.005 acres, and temporary impacts to approximately 0.03 acres of Alamo Creek, is authorized by Nationwide Permit Number 14, Linear Transportation Projects. However, until Section 401 Water Quality Certification for the activity has been issued or waived, our authorization is denied without prejudice. Once you have provided us evidence of water quality certification, the activity is authorized and the work may proceed subject to the conditions of certification and the Nationwide Permit.

Furthermore, 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 NEPA, the Endangered Species Act, the National Historical Preservation Act, and any other applicable federal laws. Your work must comply with the following General Conditions listed on the enclosed *Nationwide Permit Summary* sheet (specifically 2-4, 8, 9, 12-14, 18-21 and 25), the Regional Conditions listed on the enclosed *Final Sacramento District Regional Conditions for California, excluding Lake Tahoe Basin* (specifically 5-14), and the following special conditions:

Special Conditions

1. This permit is contingent upon the permittee applying for and being issued a Section 401 Water Quality Certification. Evidence of a water quality certification must be submitted to this office, prior to commencing work in Waters of the U.S. All terms and conditions of the Section 401 Water Quality Certification are expressly incorporated as conditions of this permit.
2. To ensure your project complies with the Magnuson-Stevens Fishery and Consultation Act, you must implement all of the mitigating measures and Essential Fish Habitat Recommendations identified in the enclosed National Marine Fisheries concurrence letter (NMFS# 2009/05582) dated, October 30, 2009.

3. The proposed avoidance and minimization measures outlined in the enclosed attachment entitled, *Avoidance & Minimization Measures to Protect Fish, Wildlife and Plant Resources*, submitted in your Pre-construction Notification dated, June 8, 2012, are incorporated by reference as a condition of this authorization except as modified by the following special conditions:

4. Prior to any work in waters of the U.S., you shall submit to this office for review and acceptance, your final de-watering and Environmentally Sensitive Areas (ESA) design plans and drawings. Plans, maps and/or drawings may be submitted electronically to regulatory-info@usace.army.mil.

You must sign the enclosed Compliance Certification and return it 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 Permit is modified, reissued, or revoked, whichever comes first. Failure to comply with the General and Regional Conditions of this Nationwide Permit, 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-2012-00543 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/Missions/Regulatory.aspx.

Sincerely,



Paul M. Maniccia
Chief, California South Branch

Enclosures

Copies Furnished without enclosures

Ms. Elizabeth Yee, Storm Water and Water Quality Certification Unit, Central Valley Regional Water Quality Control Board, 11020 Sun Center Drive #200, Rancho Cordova, California 95670-6114
Mr. Kent Smith, California Department of Fish and Game Region 2, 1701 Nimbus Drive, Rancho Cordova, California 95670-4599
Mr. Ken Sanchez, U.S. Fish and Wildlife Service, Endangered Species Division, 2800 Cottage Way, Suite W2605, Sacramento, California 95825-3901
Mr. Rodney R. McInnis, Regional Administrator, National Marine Fisheries Service, 650 Capitol Mall, Suite 5-100, Sacramento, California 95814-4706

COMPLIANCE CERTIFICATION

Permit File Number: SPK-2012-00543

Nationwide Permit Number: 14, Linear Transportation Projects

Permittee: California Department of Transportation
Jeffrey Jensen
111 Grand Avenue/P.O. Box 23660
Oakland, California 94623-0660

County: Solano

Date of Verification: June 25, 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, Regulatory Division
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

Memorandum

*Flex your power!
Be energy efficient!*

To: MS. OFELIA ALCANTARA
Office Chief
Office of Bridge Design West

Date: December 7, 2011

Attention: Brian Mori
Sameh Hegazi

File: 04-SOL-80-PM 24.8/25.2
04-0A0901
Alamo Creek Bridge (Widen)
Bridge No. 23-0010

From: MENG-HSI HUNG
Transportation Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

MH
H. Nikouei
HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Final Foundation Report for Alamo Creek Bridge (Widen)

This Final Foundation Report (FFR) is prepared in response to your request dated June 10, 2011 for the proposed three-span Alamo Creek Bridge widening (ACBW) project on westbound (WB) Route 80 near the Alamo Drive/Merchant Street interchange in the City of Vacaville, Solano County. Refer to 'Location Map' in Exhibit A.

1. SCOPE OF WORK

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

- Review of as-built Log of Test Boring (LOTB) plans of the existing bridge structures;
- Geologic literature study;
- Field geotechnical exploration, including drilling four exploratory borings at the project site, performing Standard Penetration Test (SPT) and Pocket Penetrometer (PP) Test, and collecting soil samples;
- Laboratory testing of selected samples, including particle gradation analysis, unit weight, moisture content, Atterberg Limits, unconfined compressive strength, and corrosion tests;
- Foundation design analysis; and
- Preparation of this FFR.

2. PROJECT DESCRIPTIONS

This project is located on westbound side of Route 80 near the Alamo Drive/Merchant Street Interchange in the City of Vacaville, Sonoma County. The main purpose of this project is to lengthen the acceleration lane on WB Route 80 On-ramp to a standard 1,067 feet that will

MS. OFELIA ALCANTARA
Attn: B. Mori / S. Hegazi
December 7, 2011
Page 2

provide the motorist a better merge length onto the highway. To serve the purpose, the left (north) side of the existing Alamo Creek Bridge needs to be widened an additional 8-½ feet to 10-½ feet to accommodate the extension of the on-ramp. The new widening structure will consist of continuous three spans reinforced concrete slab rested on top of reinforced concrete pier walls and reinforced concrete end diaphragm abutments. All are supported on pile foundations.

The vertical datum used in this report is NAVD 88. The horizontal datum is NAD 83.

3. EXCEPTION TO POLICY

There is no known exception to Department policy relating to the investigation or design of the proposed structures.

4. FIELD INVESTIGATION

The Office of Geotechnical Design West (OGDW) has conducted 4 new rotary borings, namely, RC-11-001, RC-11-002, RC-11-003, and RC-11-004, for the ACBW project in October 2011. It is worth noting that borings RC-11-002 and RC-11-003 were drilled through the deck of the existing bridge. A summary of all borings is shown in Table 1.

Table 1 Summary of Geotechnical Borings

Boring ID	Total Depth (ft)	Surface Elevation (ft)	Date of Completion
RC-11-001	50.0	191.1	10/12/2011
RC-11-002	65.5	180.0	10/13/2011
RC-11-003	72.5	177.3	10/11/2011
RC-11-004	55.0	187.8	10/03/2011

In all borings, Standard Penetration Tests (SPT) were conducted at 5-foot interval in soil strata except boring RC-11-003, and Pocket Penetrometer (PP) Tests were performed on soil samples showing apparent cohesion. Soil/rock samples were selected at various depths for laboratory tests to update soil/rock information. Refer to the LOTBs in the Structure Plans for more information.

5. LABORATORY TESTING PROGRAM

The laboratory testing program consisted of 30 moisture content tests, 7 mechanical (particle size distribution) analyses, 6 Atterberg Limits tests, 16 unconfined compression tests, and 2 corrosion tests.

MS. OFELIA ALCANTARA
Attn: B. Mori / S. Hegazi
December 7, 2011
Page 3

6. SITE GEOLOGY AND SUBSURFACE CONDITIONS

6.1 Topography and Drainage

Western Solano County consists of the Coast Ranges, with a maximum elevation of 2,819 feet above mean sea level (MSL). Most of the rest of the county is made up of the Sacramento valley floor, with an elevation of approximately 100 feet. About 1/3 of the county is drained southward toward Suisun Bay. The remainder of the county is drained south and east to the Sacramento River.

The project is located on the western side of the city of Vacaville, on the western edge of the Vaca Valley and the eastern edge of the Vaca Mountains, which is the eastern side of the Coast Ranges. The Vaca Valley is drained by Ulatis Creek on the eastern side and Alamo Creek on the western side. Both creeks drain east to a series of man-made canals to Cache Slough, then to the Sacramento River. The project site is on Alamo Creek. The elevation is approximately 200 feet above sea level.

6.2 Site Geology

The project site is located on the boundary of the Coast Range and Great Valley the Provinces. The Coast Ranges is a series of northwest trending mountains that were created by intense faulting, as the North American Plate and the Pacific Plate grind past one another. The nearest coastal mountain range is the Vaca Mountains to the east that climbs to an elevation of 2,818 ft above mean sea level, at Mt. Vaca. The Vaca Fault, with northwest trend, is located of approximately 1000 feet east of the project site. To the east of the site lies the Great Valley province. This province is one of the main features on the map of California stretching 450 by 50 miles. The valley is a large alluvial plain, with local sediments coming from the surrounding mountains, which have been and are currently being deposited since the Jurassic Period.

6.3 Subsurface Conditions

Based on the LOTBs shown in the Structure Plans, the soil/rock layers encountered can be generalized as follows:

- (1) Based on the LOTB of RC-11-001, which is located approximately 30 feet southwest to the proposed Abutment 1, the foundation soil consists of approximately 5 feet of hard fat clay underlain by approximately 9 feet of stiff to hard lean clay with sand. The sedimentary Mudstone Intermediate Geo-material (IGM), which is defined as a weak rock material with unconfined compressive strength (UC) in the range of 73 to 725 psi, approximately lies below elevation 177 feet. The PP of the lean clay with sand layer is estimated between 1.75

and 4.5 tsf. The UC of the Mudstone is estimated ranging from 36.0 psi to 263.3 psi; and the RQD is between 17% and 95%. Refer to the LOTB plans for details.

- (2) Based on the boring log of RC-11-002, which is located about 20 feet south to the proposed Pier 2, the foundation soil consists of approximately 13 feet of very stiff to hard lean clay/lean clay with sand underlain by approximately 1 foot of very dense silty sand. Alternate layers of sedimentary rocks, Sandstone and Mudstone, approximately lie below elevation 166 feet. The PP of the cohesive lean clay layers is estimated between 2.5 and 4.25 tsf. For rock/IGM, the UC is estimated to be between 27.9 psi and 12,134.0 psi; and the RQD is between 0% and 100%. Refer to the LOTB plans for details.
- (3) Based on the boring log of RC-11-003, which is located about 20 feet southeast to the proposed Pier 3, the foundation soil consists of approximately 6 feet of very stiff to hard lean clay with sand underlain by approximately 11 feet of very dense silty sand with SPT blow counts over 70. The sedimentary rock/IGM consisting of Sandstone (fresh, soft to hard and unfractured to slightly fractured) and Mudstone (fresh, soft to hard and unfractured to very intensely fractured) lies approximately below elevation 160 feet. The UC of the rock/IGM is estimated to be between 77.4 psi and 2,853.0 psi; and the RQD is between 38% and 100%. Refer to the LOTB plans for details.
- (4) Based on the boring log of RC-11-004, which is located about 20 feet northeast to the proposed Abutment 4, the foundation soil consists of approximately 16 feet of very stiff to hard sandy lean clay varying to very stiff lean clay with sand underlain by approximately 10 feet loose clayey gravel with sand varying to loose to medium dense clayey sand following approximately 4 feet of very stiff lean clay with gravel. The PP of the cohesive soil varies from 3.0 to 4.5 tsf. Moderately weathered, soft and moderately to intensely fractured sedimentary Mudstone IGM is estimated below elevation 159 feet. A thin layer of moderately to intensely weathered, soft and intensely fractured Sandstone IGM lies approximately between elevations 134 and 135 feet. The UC of the Mudstone IGM is estimated to be between 26.9 psi and 299.1 psi; and the RQD is between 8% and 83%. Refer to the LOTB plans for details.

6.4 Groundwater

Groundwater was measured at borehole RC-11-004 only for all 4 boring locations because of site restrictions and the natures of wash rotary drilling method. The measured water level was about 23 feet below the ground surface corresponding to elevation 164 feet. However, the groundwater level at the bridge site typically fluctuates with the season and correlates with local geology and topography. The water level in the river reflects approximately the groundwater elevation at the abutment and bent locations. According to the "Structures Final Hydraulic Report" (SFHR)

MS. OFELIA ALCANTARA
Attn: B. Mori / S. Hegazi
December 7, 2011
Page 5

prepared by Rick Macala of Structure Hydraulics and Hydrology, August 26, 2011, the estimated water surface elevations for the 50-year and 100-year events are 184.7 feet and 185.6 feet, respectively.

6.5 Liquefaction

Based on the “Final Seismic Design Recommendations” (FSDR) memo dated November 10, 2011, by Hossain Salimi, Senior Materials and Research Engineer of OGDW, the potential for liquefaction at this site during a seismic event is minimal.

7. SCOUR EVALUATION

Based on the SFHR prepared by Rick Macala, the total pier scour elevations during a 100-year storm event for Piers 2 and 3 are 167.1 feet and 165.1 feet, respectively.

8. CORROSION EVALUATION

Corrosion studies are conducted in accordance with the requirements of California Test Method No. 643. The Department considers the site to be corrosive to foundation elements if one or more of the following conditions exist for the representative soil samples taken at the site:

Chloride concentration is greater than or equal to 500 ppm, sulfate concentration is greater than or equal to 2000 ppm, or the pH is 5.5 or less.

Based on our laboratory corrosion test results, shown in Table 2, the soil at the project site is estimated to be non-corrosive.

Table 2 Soil Corrosion Test Summary

Location	SIC Number	Sample Depth (ft)	Min. Resistivity (ohm-cm)	pH
RC-11-001	C 633259	2 - 4	2038.5	7.88
RC-11-004	C 702980	18-21	2673.0	7.73

9. SEISMIC RECOMMENDATIONS

Please refer to the aforementioned FSDR by Hossain Salimi for the seismic recommendations.

10. BRIDGE FOUNDATION RECOMMENDATIONS

Based on provided structure loading and scour depth together with shallow bedrock surfaces at the job site, Cast-In-Drilled-Hole (CIDH) piles are recommended. According to current Caltrans Bridge Design Specifications, the abutments are designed using the Working Stress Design (WSD) method, and the LRFD design method is used to design the bents. Structure Design has also provided structure loads as shown in Tables 3.

Table 3 Foundation Design Data

Foundation Design Data														
Support No.	Pier Width (in)	Fixity Condition		Pile Type	Pile Dia (in)	Finished Grade Elev (ft)	Pile Cut-off Elev (ft)	Service-I Limit State (kips)			Strength Limit State (Controlling Group, kips)			
		Top	Bottom					Total Load (kips)		Permanent Loads	Compression		Tension	
								Per Support	Max Per Pile		Per Support	Per Support	Max Per Pile	Max Per Pile
Abut 1	Diaphragm Abut			CIDH	24	189.91	183.78	91	45	30	126	63	NA	NA
Pier 2	16	Pin	Pin	CIDH	24	174.50	162.25	239	119	141	325	162	NA	NA
Pier 3	16	Pin	Pin	CIDH	24	173.00	162.25	240	120	144	327	164	NA	NA
Abut 4	Diaphragm Abut			CIDH	24	188.71	182.58	91	46	31	126	63	NA	NA

10.1 Abutments 1 and 4

The approximate location, proposed pile type and number of piles to be constructed at Abutment 1 and Abutment 4 are shown in Table 4.

Table 4 Abutment Pile Information

Support	Approx. Location	Pile Type	No. of Piles
Abut 1	"ALN1" 393+28	24" CIDH	2
Abut 4	"ALN1" 394+04	24" CIDH	2

Note: Refer to Structure Plans for Exact Location.

The "Abutment Foundation Design Recommendations" are shown in Table 5.

Table 5 Abutment Foundation Design Recommendations

Abutment Foundation Design Recommendations								
Support	Pile Type	Cut-off Elevation (ft)	LRFD Service-I Limit State Loads per Support (kips)		LRFD Service-I Limit State Loads (kips) per Pile (Compression)	Nominal Resistance (kips)	Design Tip Elevations (ft)	Specified Tip Elevations (ft)
			Total	Permanent				
Abut 1	24" CIDH	183.78	91	30	45	90	155.2 (a) 165.2 (c)	155.2
Abut 4	24" CIDH	182.58	91	31	46	90	160.7 (a) 163.7 (c)	160.7

Notes:

- 1) Design tip elevations are controlled by: (a) Compression, (b) Tension, (c) Settlement, (d) Lateral Load.
- 2) The CIDH specified tip elevations shall not be raised.

10.2 Piers 2 and 3

Based on the subsurface and site conditions, 24-inch CIDH pile foundations are recommended for Piers 2 and 3. The approximate location, proposed pile type and number of piles to be constructed at Piers 2 and 3 are shown in Table 6.

Table 6 Pier Pile Information

Name	Approx. Location	Pile Type	No. of Piles
Pier 2	"ALN1" 393+53	24" CIDH	2
Pier 3	"ALN1" 393+80	24" CIDH	2

Note: Refer to Structure Plans for Exact Location.

Pile foundations at each pier are designed based on LRFD method. The "Pier Foundation Design Recommendations" are shown in Table 7.

Table 7 Pier Foundation Design Recommendations

Pier Foundation Design Recommendations											
Support Location	Pile Type	Cut-off Elev. (ft)	Service-I Limit State Loads per Support (kips)	Total Permissible Support Settlement (in)	Required Factored Nominal Resistance (kips)					Design Tip Elevations (ft)	Specified Tip Elevations (ft)
					Strength Limit		Extreme Event				
					Comp. ($\phi = 0.7$)	Tension ($\phi = 0.7$)	Comp. ($\phi = 1$)	Tension ($\phi = 1$)	Lateral ($\phi = 1$)		
Pier 2	24" CIDH	162.25	239	1	162	0	N/A	N/A	N/A	122 (a) 139 (c)	122
Pier 3	24" CIDH	162.25	240	1	164	0	N/A	N/A	N/A	127 (a) 138 (c)	127

Notes:

- 1) Design tip elevations are controlled by: (a) Compression, (b) Tension, (c) Settlement, (d) Lateral Load.
- 2) The CIDH specified tip elevations shall not be raised.

10.3 Pile Data Table

A summary of pile foundation design for the ACBW is presented in the "Pile Data Table" (Table 8).

Table 8 Pile Data Table

Pile Data Table					
Support Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)
		Compression	Tension		
Abut 1	24" CIDH	90	0	155.2 (a) 165.2 (c)	155.2
Pier 2	24" CIDH	230	0	122 (a) 139 (c)	122
Pier 3	24" CIDH	230	0	127 (a) 138 (c)	127
Abut 4	24" CIDH	90	0	160.7 (a) 163.7 (c)	160.7

Notes:

- 1) Design tip elevations are controlled by: (a) Compression, (b) Tension, (c) Settlement, (d) Lateral Load.
- 2) The CIDH specified tip elevations shall not be raised.

10.5 Settlement

Based on our estimate, the settlement for each support is less than 1 inch.

MS. OFELIA ALCANTARA
Attn: B. Mori / S. Hegazi
December 7, 2011
Page 9

10.6 Design Criteria

The following design criteria were used in foundation analysis.

- (1) A computer program "SHAFT 6.0" by Ensoft, Inc. was employed to calculate the axial capacity for each CIDH pile. This program is mainly based on the latest FHWA manual.
- (2) All CIDH pile (shaft) are designed as single shaft and if used in a group should maintain a minimum of 2.5 diameter center to center spacing as specified in the "Bridge Design Specifications (2003): Sec. 4.6.5.6.1.4. If shafts will be less than the required 2.5 diameter spacing, the Office of Geotechnical Design West should be notified.
- (3) We assumed that the capacity of each CIDH pile solely depends on its skin resistance.
- (4) We assumed that concrete slump is 6 inches, the rate of placement of concrete in the borehole should exceed 40 feet/hour (or about 0.67 feet/ minute), and the ratio of the maximum size of the coarse aggregate to the borehole diameter should be less than 0.02.
- (5) The Rock/IGM on the contact surface of the CIDH pile is considered as "smooth with open joints".

11. CONSTRUCTION CONSIDERATIONS

- (1) Difficult pile installation is anticipated due to the presence of sedimentary rock consists of Sandstone and Mudstone ranging from soft to very hard, slightly to very intensely weathered, and fresh to intensely fractured at depth. Therefore, conventional drilling equipment for drilling in soils may not be suitable in drilling holes for the CIDH piles
- (2) The contractor must submit shop drawings for a protective system per Standard Specifications (2010) 7-1.02K(6)(b) for excavations over 5 feet deep.
- (3) Groundwater may be encountered during structural excavation. Groundwater levels may occur at elevations different from those presented in this report due to seasonal conditions. The Contractor should be prepared to lower the groundwater level during construction as necessary to maintain a dry and stable condition during construction. Refer to the provisions in Section 19-3, "Structure Excavation and Backfill," of the Standard Specifications for details.
- (4) The OGDW should be invited to a pre-construction meeting.

MS. OFELIA ALCANTARA
Attn: B. Mori / S. Hegazi
December 7, 2011
Page 10

- (5) Difficult pile installation is anticipated due to the presence of localized zones of groundwater and caving soils. Therefore, "Guidelines for CIDH Piles Cast in Wet Conditions" shall be considered.
- (6) Prior to placement of concrete, the interior surface of the shaft including the bottom should be cleaned of residue from drilling operations.
- (7) The drilling of the CIDH piles, the placement of the rebar cage, and concrete pour shall be complete in a continuous operation.
- (8) The contractor shall submit the drilling logs for CIDH piles for review after the completion of drilling. The drilling log shall include penetration rate, material descriptions, estimated volume of cuttings (poor, good, excessive) and other information pertaining to the drilling process (loss of circulation, zones of caving, down pressure, etc.).
- (9) Excavated materials and drilling fluids shall be handled and disposed of in accordance with the contract plans.

12. DISCLAIMER

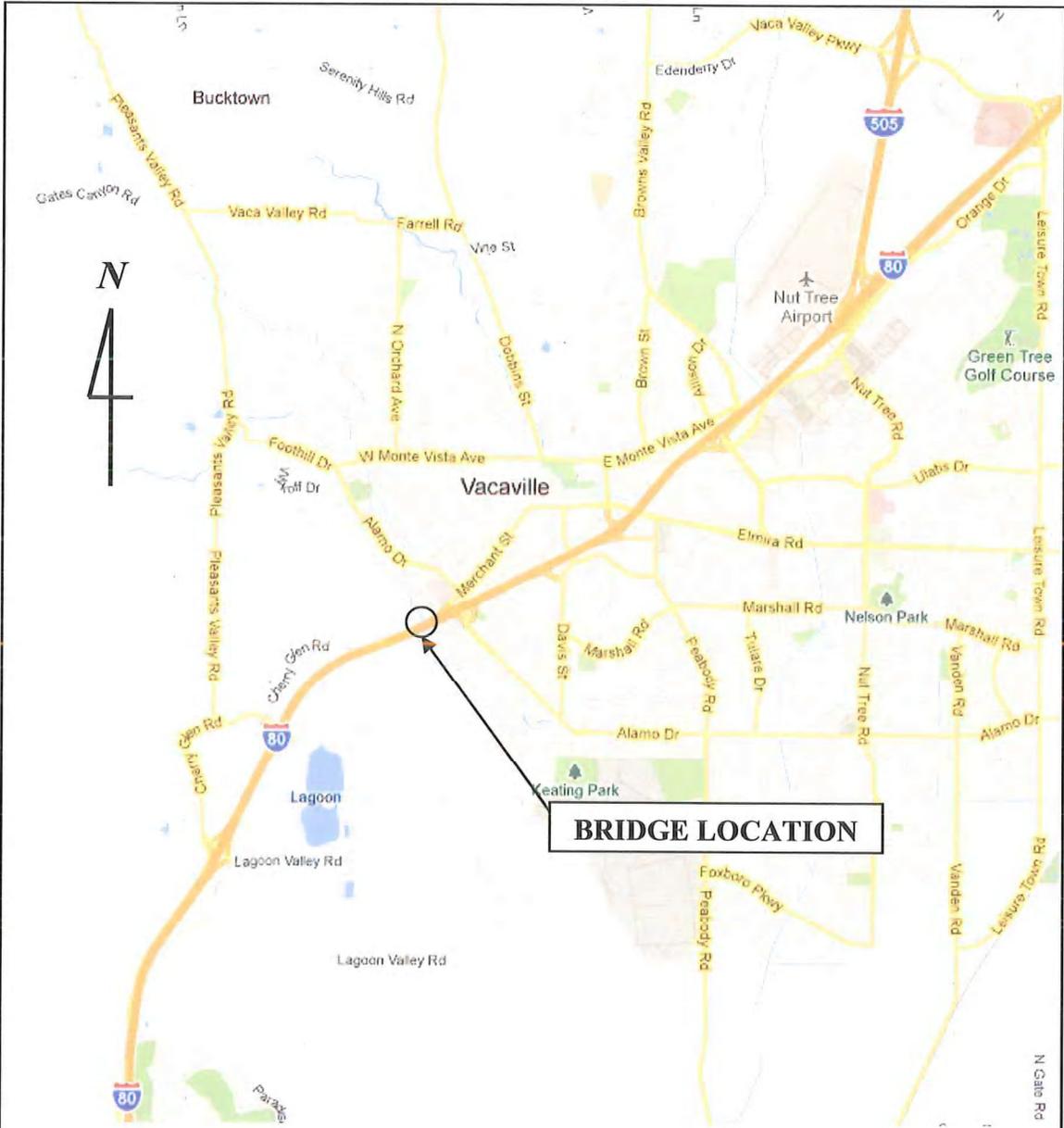
The recommendations contained in this report are based on specific project information regarding structure type, location, as well as design loads and criteria that have been provided by the Office of Bridge Design West. If any conceptual changes are made during final project design, the Office of Geotechnical Design-West, Branch A should review those changes to determine if these foundation recommendations are still applicable. Any questions regarding the above recommendations should be directed to the attention of Meng-Hsi Hung at 510-286-7245 or Hooshmand Nikoui at 510-286-4811, at the Office of Geotechnical Design-West, Branch A.

Attachments:

- c: TPokrywka, HNikoui, MHung, HSalimi, Daily File, Route File, Translab File
John Stayton, Specs and Estimate
Dwight Manlulu, PCE-PPRM
Sameer Khoury, Project Manager
Manny Caluya, District Design Chief

MHung/mm





Source: Google Maps
<http://maps.google.com>

NO SCALE



DIVISION OF ENGINEERING SERVICES
 Geotechnical Design West

EXHIBIT A: LOCATION MAP

04-SOL-80 PM 24.8/25.2
04-0A0901 DECEMBER 2011

ALAMO CREEK BRIDGE (WIDEN)

Central Valley Regional Water Quality Control Board

11 September 2012

James Hsiao
California Department of Transportation
111 Grand Avenue
Oakland, CA 9461200

CERTIFIED MAIL
7011 2970 0003 8939 2016

***CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY
CERTIFICATION; THE CALIFORNIA DEPARTMENT OF TRANSPORTATION, SOL 80
ALAMO CREEK BRIDGE REPLACEMENT PROJECT (WDID#5A48CR00112),
SOLANO COUNTY***

This Order responds to your 14 June 2012 application submittal for the Water Quality Certification of a roadway expansion project permanently impacting less than 0.01 acre/12 linear feet and temporarily impacting 0.0113 acre of waters of the United States.

This Order serves as certification of the United States Army Corps of Engineers' Nationwide Permit# 14 (SPK# 2012-00543) under § 401 of the Clean Water Act, and a Waste Discharge Requirement under the Porter-Cologne Water Quality Control Act.

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This Order serves as a Water Quality Certification (Certification) action that is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to § 13330 of the California Water Code and § 3867 of the California Code of Regulations.
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 § 3855(b) of the California Code of Regulations, and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial Certification action shall be conditioned upon total payment of the full fee required under § 3833 of the California Code of Regulations, unless otherwise stated in writing by the certifying agency.

4. This 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 § 404 of the Clean Water Act has expired.
5. All reports, notices, or other documents required by this Certification or requested by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) shall be signed by a person described below or by a duly authorized representative of that person.
 - (a) For a corporation: by a responsible corporate officer such as (1) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function; (2) any other person who performs similar policy or decision-making functions for the corporation; or (3) the manager of one or more manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
 - (b) For a partnership or sole proprietorship: by a general partner or the proprietor.
 - (c) For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official.
6. Any person signing a document under Standard Condition number 5 shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

ADDITIONAL TECHNICAL CERTIFICATION CONDITIONS:

In addition to the above standard conditions, The California Department of Transportation shall satisfy the following:

1. The California Department of Transportation shall notify the Central Valley Water Board in writing 7 days in advance of the start of any work within waters of the United States or State. The notification shall include the name of the project and the WDID number, and shall be sent to the Central Valley Water Board Contact indicated in this Certification.
2. Except for activities permitted by the United States Army Corps of Engineers 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. The California Department of Transportation shall maintain a copy of this Certification and supporting documentation (Project Information Sheet) at the Project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors) performing work on the proposed project shall be adequately informed and trained regarding the conditions of this Certification.
4. The California Department of Transportation shall perform surface water sampling: 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 monitoring requirements in Table 1 shall be conducted upstream out of the influence of the project, and 300 feet downstream of the work area. The sampling frequency may be modified for certain projects with written approval from Central Valley Water Board staff.

Table 1:

Parameter	Unit	Type of Sample	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	Grab ⁽¹⁾	Every 4 hours during in-water work	(2)
Settleable Material	mL/L	Grab ⁽¹⁾	Every 4 hours during in-water work	(2)
Visible construction related pollutants ⁽³⁾	Observations	Visual Inspections	Continuous throughout the construction period	—
Temperature ⁽⁴⁾	°F (or as °C)	Grab ⁽¹⁾	Every 4 hours during in-water work	(2)
pH ⁽⁴⁾	Standard Units	Grab ⁽¹⁾	Every 4 hours during in-water work	(2)
Dissolved Oxygen ⁽⁴⁾	mg/L & % saturation	Grab ⁽¹⁾	Every 4 hours during in-water work	(2)

⁽¹⁾ Grab sample shall not be collected at the same time each day to get a complete representation of variations in the receiving water.

⁽²⁾ Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant, method shall be approved by Central Valley Water Board staff.

⁽³⁾ Visible construction-related pollutants include oil, grease, foam, fuel, petroleum products, and construction-related, excavated, organic or earthen materials.

⁽⁴⁾ Temperature, pH, and dissolved oxygen water quality monitoring is required due to the occurrence of state and federally listed species habitat within the project area.

A surface water monitoring report shall be submitted to the Central Valley Water Board Contact indicated in this Certification within two weeks of initiation of sampling and every two weeks thereafter. In reporting the monitoring data, the California Department of Transportation shall arrange the data in tabular form so that the sampling locations, date, constituents, and concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the project complies with Certification requirements. The report shall include surface water sampling results and visual observations, laboratory reports, chain of custody records, and identification of the turbidity increase in the receiving water applicable to the natural turbidity conditions specified in the turbidity criteria below.

5. The Central Valley Water Board adopted a *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, Fourth Edition, revised October 2011 (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Turbidity, settleable matter, temperature, pH, and dissolved oxygen limits are based on water quality objectives contained in the Basin Plan and are part of this Certification as follows:

A. Activities shall not cause turbidity increases in surface water to exceed:

- i. where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTUs;
- ii. where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
- iii. where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
- iv. where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and
- v. 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 NTUs over background turbidity. 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 used with prior approval of the Central Valley Water Board staff.

B. Activities shall not cause settleable matter to exceed 0.1 mL/L in surface waters as measured in surface waters within 300 feet downstream of the project.

C. Activities shall not cause temperature in surface waters to increase more than 5°F above natural receiving water temperature for waters with designated COLD or WARM beneficial uses.

D. Activities shall not cause pH to be depressed below 6.5 nor raised above 8.5 in surface water.

- E. Activities shall not cause dissolved oxygen to be reduced below 5.0 mg/L for waters designated with the WARM beneficial use, and 7.0 mg/L for waters designated with the COLD or SPWN beneficial uses, in surface water.
6. The California Department of Transportation shall notify the Central Valley Water Board immediately if the above criteria for turbidity, settleable matter, temperature, pH, or dissolved oxygen or other water quality objectives are exceeded.
7. 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 receiving water. The California Department of Transportation shall notify the Central Valley Water Board immediately of any spill of petroleum products or other organic or earthen materials.
8. Activities shall not cause degradation of waters of the State.
9. The California Department of Transportation shall provide a copy of the California Department of Fish and Game Lake or Streambed Alteration Agreement within 14 days of the issuance of this Certification.
10. The California Department of Transportation shall comply with all California Department of Fish and Game requirements and recommendations, including, but not limited to, those requirements and recommendations described in Lake or Streambed Alteration Agreement No. 1600-2012-0148-R3.
11. The use of netting material (e.g., monofilament-based erosion blankets) that could trap aquatic dependent wildlife is prohibited within the project area, as indicated in the attached map (Figure 1).
12. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.
13. All areas disturbed by project activities shall be protected from washout or erosion.
14. In-stream work will occur during periods of low flow and no precipitation.
15. This Certification does not allow permanent water diversion of flow from the receiving water. This Certification is invalid if any water is permanently diverted as a part of the project.
16. Hydroseeding shall be performed with California native seed mix.

17. Refueling of equipment within the floodplain or within 300 feet of the waterway is prohibited. If critical equipment must be refueled within 300 feet of the waterway, strict spill prevention and countermeasures must be implemented to avoid spills. Refueling areas shall be provided with secondary containment including drip pans and/or placement of absorbent material. No hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related potentially hazardous substances should be stored within a floodplain or within 300 feet of a waterway. The California Department of Transportation must perform frequent inspections of construction equipment prior to utilizing it near surface waters to ensure leaks from the equipment are not occurring and are not a threat to water quality.
18. The California Department of Transportation shall develop and maintain onsite a project-specific Spill Prevention, Containment and Cleanup Plan outlining the practices to prevent, minimize, and/or clean up potential spills during construction of the project. The Plan must detail the project elements, construction equipment types and location, access and staging and construction sequence. The Plan must also address the potential of responding to a spill or prevention of spills occurring within the project site.
19. If temporary surface water diversions and/or dewatering are anticipated, the California Department of Transportation shall develop and maintain on-site a Surface Water Diversion and/or Dewatering Plan(s). The Plan(s) shall include the proposed method and duration of diversion activities. The Surface Water Diversion and/or Dewatering Plan(s) must be consistent with this Certification.
20. When work in a flowing stream is unavoidable and 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 beneficial uses of waters of the State below the dam. Construction, dewatering, and removal of temporary cofferdams shall not violate Technical Certification Condition 5 of this Certification.
21. 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 flow shall be temporarily diverted using gravity flow through temporary culverts/pipes or pumped around the work site with the use of hoses.
22. Raw cement, concrete (or washing thereof), asphalt, drilling fluids, lubricants, paints, coating material, oil, petroleum products, or any other substances which could be hazardous to fish and wildlife resulting from or disturbed by project-related activities, shall be prevented from contaminating the soil and/or entering waters of the United States or waters of the State.
23. Concrete must completely be cured before coming into contact with waters of the United States and/or waters of the State. Surface water that contacts wet concrete must be pumped out and disposed of at an appropriate off-site commercial facility which is authorized to accept concrete wastes.

24. During replacement of the bridge, a method of containment must be used below the bridge to prevent debris from falling into the water body.
25. During construction, silt fencing, straw wattles, or other effective management practices must be used along the construction zone to minimize soil or sediment along the embankments from migrating into the waters of the United States and/or waters of the State.
26. All materials resulting from the project shall be removed from the site and disposed of properly.
27. If unanticipated discharges to the waters of the State and/or waters of the United States and/or soil occur, the California Department of Transportation shall notify the Central Valley Water Board Contact indicated in this Certification in writing within 5 calendar days of occurrence. Unanticipated discharges may include, but are not limited to, any construction materials, hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, raw cement, concrete, asphalt, paint, coating material, drilling fluids, or other construction-related potentially hazardous substances.
28. The California Department of Transportation shall obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ for discharges to surface waters comprised of storm water associated with construction activity, including, but not limited to, demolition, clearing, grading, excavation, and other land disturbance activities of one or more acres, or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres.
29. The Conditions in this Certification are based on the information in the attached "Project Information Sheet." If the actual project, as described in the attached Project Information Sheet, is modified or changed, this Certification is no longer valid until amended by the Central Valley Water Board.
30. In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law. 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 Certification.
 - (a) If the California Department of Transportation or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Certification, or falsifies any information provided in the monitoring reports, the applicant is subject to civil liability, for each day of violation, and/or criminal liability.

- (b) In response to a suspected violation of any condition of this Certification, the Central Valley Water Board may require the California Department of Transportation 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) The California Department of Transportation shall allow the staff(s) of the Central Valley Water Board, or an authorized representative(s), upon the presentation of credentials and other documents, as may be required by law, 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.

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

CENTRAL VALLEY WATER BOARD CONTACT:

Trevor Cleak, Environmental Scientist
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-8114
tcleak@waterboards.ca.gov
(916) 464-4684

CALIFORNIA ENVIRONMENTAL QUALITY ACT:

The Central Valley Water Board has determined that this project meets the Categorical Exemption, under § 15301 of the California Code of Regulations, which exempts operation, repair, maintenance, permitting, leasing, licensing, or minor alterations of existing public or private structures, facilities, mechanical equipment, or topological features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination.

WATER QUALITY CERTIFICATION:

I hereby issue an Order certifying that any discharge from the California Department of Transportation, SOL 80 Alamo Creek Bridge Replacement Project (WDID#5A48CR00112) will comply with the applicable provisions of § 301 ("Effluent Limitations"), § 302 ("Water Quality Related Effluent Limitations"), § 303 ("Water Quality Standards and Implementation Plans"), § 306 ("National Standards of Performance"), and § 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)".

Except insofar as may be modified by any preceding conditions, all Certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in compliance with the conditions of this Certification, the California Department of Transportation'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 Basins*, Fourth Edition, revised October 2011.

Frederick I. Moss

for Pamela C. Creedon
Executive Officer

Enclosure: Project Information

Attachment: Figure 1 – Project Location Map

cc: Distribution List, page 13

PROJECT INFORMATION SHEET

Application Date: 14 June 2012

Applicant: James Hsiao
California Department of Transportation
111 Grand Avenue
Oakland, CA 94612

Applicant Representatives: Cyrus Vafai
California Department of Transportation
111 Grand Avenue
Oakland, CA 94612

Project Name: SOL 80 Alamo Creek Bridge Replacement Project

Application Number: WDID#5A48CR00112

Type of Project: Roadway Expansion Project

Timeframe of Project Implementation: January through December

Project Location: Section 29, Township 6 North, Range 1 West, MDB&M.
Latitude: 38°20'41.46"N and Longitude: 122°00'06.38" W

County: Solano County

Receiving Water(s) (hydrologic unit): Alamo Creek, Sacramento Hydrologic Basin, Valley
Putah-Cache Hydrologic Unit #511.10, Elmira HA

Water Body Type: Streambed, Riparian

Designated Beneficial Uses: The *Water Quality Control Plan for the Sacramento River and San Joaquin River*, Fourth Edition, revised October 2011 (Basin Plan) has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include, but are not limited to: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Industrial Supply (IND); Hydropower Generation (POW); Groundwater Recharge (GWR); Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Preservation of Biological Habitats of Special Significance (BIOL); Rare, Threatened, or Endangered Species (RARE); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction, and/or Early Development (SPWN); and Wildlife Habitat (WILD). A comprehensive and specific list of the Beneficial Uses applicable for the project area can be found at http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml.

303(d) List of Water Quality Limited Segments: Alamo Creek is the receiving water for the SOL 80 Alamo Creek Bridge Replacement Project. Alamo Creek is listed on the 303(d) list for fecal coliform. This project does not impact an already impaired water body. The most recent list of approved water quality limited segments can be found at:
http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

Project Description: The 1.01-acre SOL 80 Alamo Creek Bridge Replacement Project consists of widening the existing 3-span Alamo Creek Bridge, and lengthening the Alamo Drive on-ramp on Interstate 80. The project is located adjacent to Alamo Drive in Vacaville.

The bridge will be widened by 12-feet. The existing abutments and piers will also be widened by 12-feet. Excavations for the abutments will be 10-feet wide by 20-feet long by 5-feet deep and excavations for the piers will be 5-feet wide by 20-feet long by 8-feet deep. A shoring system such as a coffer dam will be used for deep excavation if necessary. A bioswale will be constructed on the east side of the bridge and a 300-foot long concrete barrier will be constructed on the west side of the creek. The concrete for the abutments and piles will be pumped from the top of the bridge embankments. A temporary access road will be constructed to allow equipment to reach the creek. An approximately 12-foot long by 12-foot tall false work will be installed to support the bridge during construction.

The project will increase the length of the existing Alamo Drive on-ramp from approximately 400-feet to 1,067-feet. This section of the project will not impact water quality.

Work in the creek will occur when the creek is dry, but if water does flow during construction cofferdams will be installed.

The project will permanently impact 0.0068 acre/12 linear feet and temporarily impact 0.0113 acre of waters of the United States.

Preliminary Water Quality Concerns: Construction activities may impact surface waters with increased turbidity, settleable matter, temperature, pH and dissolved oxygen.

Proposed Mitigation to Address Concerns: The California Department of Transportation will implement Best Management Practices to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. The California Department of Transportation will conduct turbidity, settleable matter, temperature, pH and dissolved oxygen testing during in-water work, stopping work if exceedance of Basin Plan criteria are exceeded or are observed.

Excavation/Fill Area: Approximately 10 cubic yards of concrete will be placed into 0.0068 acre/12 linear feet of waters of the United States.

Dredge Volume: Approximately 10 cubic yards of native soil will be dredged from 0.0068 acre/12 linear feet of waters of the United States.

United States Army Corps of Engineers File Number: SPK# 2012-00543

United States Army Corps of Engineers Permit Type: Nationwide Permit# 14

California Department of Fish and Game Lake or Streambed Alteration Agreement:
1600-2012-0148-R3.

Possible Listed Species: Central Valley spring run chinook salmon, Conservancy fairy shrimp, Vernal pool fairy shrimp, Central Valley steelhead, Valley elderberry longhorn beetle, Vernal pool tadpole shrimp, California tiger salamander, California red-legged frog, Sacramento splittail, and California freshwater shrimp.

Status of CEQA Compliance: The Central Valley Water Board has determined that this project meets the Categorical Exemption, under § 15301 of the California Code of Regulations.

The Central Valley Water Board filed a Notice of Exemption with the State Clearinghouse with 5 days of the date of this Certification.

Compensatory Mitigation: The Central Valley Water Board is not requesting compensatory mitigation for the SOL 80 Alamo Creek Bridge Replacement Project.

Application Fee Provided: Total fees of \$1,108.00 have been submitted to the Central Valley Water Board as required by § 3833(b)(3)(A) and § 2200(a)(3) of the California Code of Regulations.

DISTRIBUTION LIST

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401 Certification and Wetlands Unit Chief

Jason A. Brush (Electronic copy only)
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United States Environmental Protection Agency

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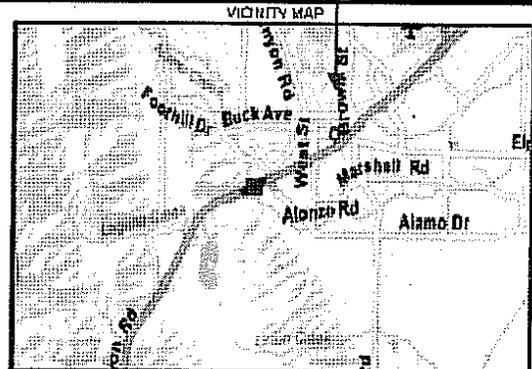


Figure 1 – Project Location Map



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

OCT 30 2009

In response refer to:
2009/05582

Jeffrey G. Jensen
District Office Chief
California Department of Transportation
P.O. Box 23660
Oakland, California 94623-0660

Dear Mr. Jensen:

This letter is in response to your October 7, 2009, letter initiating consultation with NOAA's National Marine Fisheries Service (NMFS) concerning the Alamo Drive Onramp Lengthening project located in Solano County, California. Specifically, the California Department of Transportation (Caltrans) has determined that the Alamo Drive Onramp project will not 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.

Caltrans proposes to lengthen the Alamo Drive on-ramp to westbound Interstate 80 in the City of Vacaville at post mile 24.8 to 25.2. The project area will include the on-ramp and the bridge that spans Alamo Creek. The project action area is the area in which activities may result in adverse affects to EFH. The proposed project will widen the north side of Alamo Creek Bridge by approximately 8 to 11 feet. This will involve extending the existing two piers and abutments, and driving piles within the creek bed to support the increased load. The existing guardrails at Alamo Creek Bridge will be removed and new guardrails will be installed at the widened bridge and at the retaining wall. In addition, two bioswales will be constructed on either side of the bridge for stormwater treatment. The work within Alamo Creek will be conducted during the summer months (June 15 through October 15) when the creek is dry.

EFH Consultation

The proposed project area has been identified as EFH for Pacific 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]). NMFS has reviewed this project for impacts to EFH for Pacific salmon and determined that implementation of the proposed project will not adversely affect EFH for Pacific salmon. Therefore, EFH Conservation Recommendations are not being provided at this time beyond the standard best management practices that have been previously proposed and implemented by Caltrans on similar bridge repair projects. However, if there is substantial revision to the action, 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. Because the proposed project is designed to avoid environmental impacts to aquatic habitat within the action area, NMFS has no additional FWCA comments to provide at this time.

Please contact Monica Gutierrez at (916) 930-3657, or via e-mail at Monica.Gutierrez@noaa.gov if you have any questions or require additional information concerning this project.

Sincerely,


Rodney R. McClinnis
Regional Administrator

cc: Copy to File ARN # 151422SWR2009SA00509
NMFS-PRD, Long Beach, CA
Bryant Chesney, Long Beach, CA