Meeting of the Central Valley Flood Protection Board
May 25, 2012
Staff Report – Encroachment Permit No. 18720
California Department of Transportation, District 10
Caltrans Duck Creek South Branch Bridge Widening at Munford Avenue, San Joaquin County

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1.0 – ITEM

Consider approval of Permit No. 18720.

2.0 – APPLICANT

California Department of Transportation (Caltrans), District 10.

3.0 – LOCATION

The project site (Munford Ave Bridge at Duck Creek South Branch) is located in the San Joaquin County. The site has a latitude of 37.929698° N and a longitude of -121.227059 ° E (see Attachment A for Site Location Map).

4.0 – DESCRIPTION

The proposed project is a part of the Caltrans overall plan to widen the existing State Route 99 in San Joaquin County from PM 15.0 to 18.6. The project described in this report is to widen the existing Munford Ave Bridge at Duck Creek South Branch (Caltrans Bridge No. 29C-0377) which falls within the Caltrans overall widening plan. The existing Munford Ave Bridge at Duck Creek South Branch is a three-span continuous reinforced concrete (RC) slab bridge on reinforced concrete column caps over column piles (4 piles per bent) with reinforced concrete diaphragm type abutments. The proposed bridge widening will be a three-span cast-in-place (CIP) RC Slab bridge on pile extension structures. The proposed project consists of widening the north and south side of the bridge by 7.19 feet. Up to 5 feet of excavation beyond the abutment will be required for this project which will be filled with approximately 33 cubic yard (cy) of structural backfill (see Attachment C for Project Plan and Profile). The length of the bridge will be approximately 55 feet and the width will be approximately 44 feet. No rock slope protection or slope paving of any kind were proposed at this bridge location. However, native vegetation will be planted for erosion control. All elevations in this

report are based on the NGVD29 vertical datum, and all horizontal coordinates are based on the NAD83 horizontal datum, unless otherwise noted.

5.0 – PROJECT ANALYSIS

The project site (the Munford Ave Bridge at Duck Creek South Branch) is located within the Board designated regulated streams as per Table 8.1 of Title 23. The site is also a part of the Federal Project, "Duck Creek Project San Joaquin County, California". In the Duck Creek O&M manual, this channel is referred to as Branch Creek and it extends about 4,000 feet from Highway 99 upstream to Mariposa Road. There are no project levees at or close to the site. The nearest project levee is approximately 2.5 miles (13,210 feet) north of the site. Based on the staff's review, the following analyses were made.

5.1 – HYDRAULIC ANALYSIS

The hydraulic analysis for the Munford Ave Bridge at Duck Creek South Branch was performed using the one-dimensional hydraulic analysis software, HEC-RAS. The analysis was performed primarily to calculate the water surface elevation (WSE) and the velocity at the proposed bridge location. The Manning’s roughness coefficient used in the analysis was 0.034. The analysis was conducted for 100-year discharge of 237 cubic-feet-per-second (cfs) for both the existing and with-project conditions.

Based on the analysis, the WSE and average velocity for the existing condition at River Station 1980 (upstream of bridge site) are 26.04 feet and 3.79 feet-per-second (fps), respectively. The WSE and average velocity for the with-project condition at River Station 1980 (upstream of bridge site) are 26.06 feet and 3.75 fps, respectively. Based on the above data, no significant hydraulic impact due to the project is noticed.

The clearance/freeboard for the 100-year flood event at River Station 1980 (upstream of bridge site) was estimated to be 2.54 feet which conforms to the minimum clearance /freeboard requirement of 2 feet for a minor stream as per Title 23. Also as per Title 23, simply widening a bridge does not require meeting the clearance/freeboard requirement as long as the bottom soffit member of the widened portion is at the same elevation of the bottom soffit member of the existing bridge.

The scour potential was assessed in accordance with FHWA Technical Advisory T5140.23, "Evaluating Scour at Bridges", and within current Caltrans guidelines. The existing bridge was determined to be not scour critical. The estimated potential local

pier scour was calculated to be 3.0 ft for Piers 2 through 4 at an elevation 20 feet which has been included in the design.

5.2 – GEOTECHNICAL ANALYSIS

The project site is located within the Sacramento Valley of the Great Valley Geomorphic Province. Sediments eroded from the Sierra Nevada and the Coast Ranges were deposited on the floodplains and bottomlands as the mountain streams greatly decreased their velocity in the long flat valley (Harden, 1998). According to the "Geologic Map of the San Francisco-San Jose Quadrangle, California," the area was mapped as the Modesto Formation (Qm), which is predominantly composed of Pleistocene sand, clay and silt alluvium deposited by streams and rivers.

The subsurface soils encountered during the 2010 field investigation for the Munford Ave Bridge at Duck Creek South Branch (Caltrans Bridge No. 29C-0377) generally consisted of both granular and cohesive soils. The granular soils consisted of medium dense to very dense poorly graded sand, well graded sand. The cohesive soils consisted of stiff, very stiff and hard fat clay, lean clay, lean clay with sand, sandy lean clay, silt and sandy silt. The groundwater elevation measured during the subsurface investigation was -20.8 feet. In addition to the 2010 subsurface investigation, the As-Built LOTB sheet (subsurface investigation of which was completed in August 1963) was also considered during the preparation of the foundation recommendations.

The nearest known active fault to the site is the Great Valley Fault (Fault ID No. 25) which is capable of producing an earthquake magnitude of 6.7 Mw. This fault is located southwest of the bridge site with the rupture distance of approximately 22 miles. This fault is referred to as a reverse fault with a dip of 15 degrees. The estimated peak ground motion acceleration for 5 percent probability of exceedance in 50 years (equivalent return period of 975 years) was 0.29g. Based on the subsurface soils, ground water level and the calculated ground motion acceleration, the potential for liquefaction at the site was determined minimal. Based on the analysis, the potential for ground rupture due to fault movement was also determined insignificant.

Geotechnical analyses recommended that the proposed Munford Ave Bridge at Duck Creek South Branch may be supported on driven 16-inch open-ended pipe piles at all support locations. This pile design included the 3.0 feet of local scour estimated by the hydraulic analysis. The geotechnical analyses also indicated that the site soils were determined to be non-corrosive to the foundations.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with this project, from all pertinent agencies are shown below:

- The U.S. Army Corps of Engineers 208.10 comment letter has not been received for this application. Staff anticipates receipt of a letter indicating that the USACE District Engineer has no objection to the project, subject to conditions. Upon receipt of the letter, staff will review to ensure conformity with the permit language and incorporate it into the permit as Exhibit A.

- The San Joaquin County Flood Control & Water Conservation District has endorsed this application with conditions which has been incorporated in the permit as Exhibit B.

7.0 – CEQA ANALYSIS

Board staff has prepared the following CEQA findings:

The Board, as a responsible agency under CEQA, has reviewed Draft Environmental Impact Report/Environmental Assessment (DEIR) (SCH Number: 2002022027, March 2008) and the Final Environmental Impact Report/Environmental Assessment with Finding of No Significant Impact (FEIR) (September 2008) and Mitigation Measures for the South Stockton Six-Lane Project prepared by the lead agency, Caltrans. These documents, including project design, may be viewed or downloaded from the Central Valley Flood Protection Board website at http://www.cvfpb.ca.gov/meetings/2012/05-25-2012.cfm under a link for this agenda item. These documents are also available for review in hard copy at the Board and the Caltrans District offices.

Caltrans has determined that the project would not have a significant effect on the environment, certified the project on October 28, 2008 and subsequently filed a Notice of Determination on November 3, 2008 with the State Clearinghouse. Board staff finds that although the proposed project could have a potentially significant effect on the environment, there will not be a significant effect in this case because revisions to the project have been made by or agreed to by the project proponent. The project proponent has incorporated mandatory mitigation measures into the project plans to avoid identified impacts or to mitigate such impacts to a point where no significant impacts will occur. These mitigation measures are included in the project proponent's FEIR and address impacts to aesthetics, biological resources, paleontological resources, hazards and hazardous materials, emergency services, water quality and

storm water runoff, traffic and transportation. The description of the mitigation measures are further described in the adopted FEIR.

8.0 – SECTION 8610.5 CONSIDERATIONS

1. Evidence that the Board admits into its record from any party, State or local public agency, or nongovernmental organization with expertise in flood or flood plain management:

   The Board will make its decision based on the evidence in the permit application and attachments, this staff report, and any other evidence presented by any individual or group.

2. The best available science that related to the scientific issues presented by the executive officer, legal counsel, the Department or other parties that raise credible scientific issues.

   The accepted industry standards for the work proposed under this permit as regulated by Title 23 have been applied to the review of this permit.

3. Effects of the decision on the entire State Plan of Flood Control:

   This project does not have significant impacts on the State Plan of Flood Control, as the project does not impair the structural or hydraulic functions of the system.

4. Effects of reasonable projected future events, including, but not limited to, changes in hydrology, climate, and development within the applicable watershed:

   There are no foreseeable projected future events that would impact this project.

9.0 – STAFF RECOMMENDATION

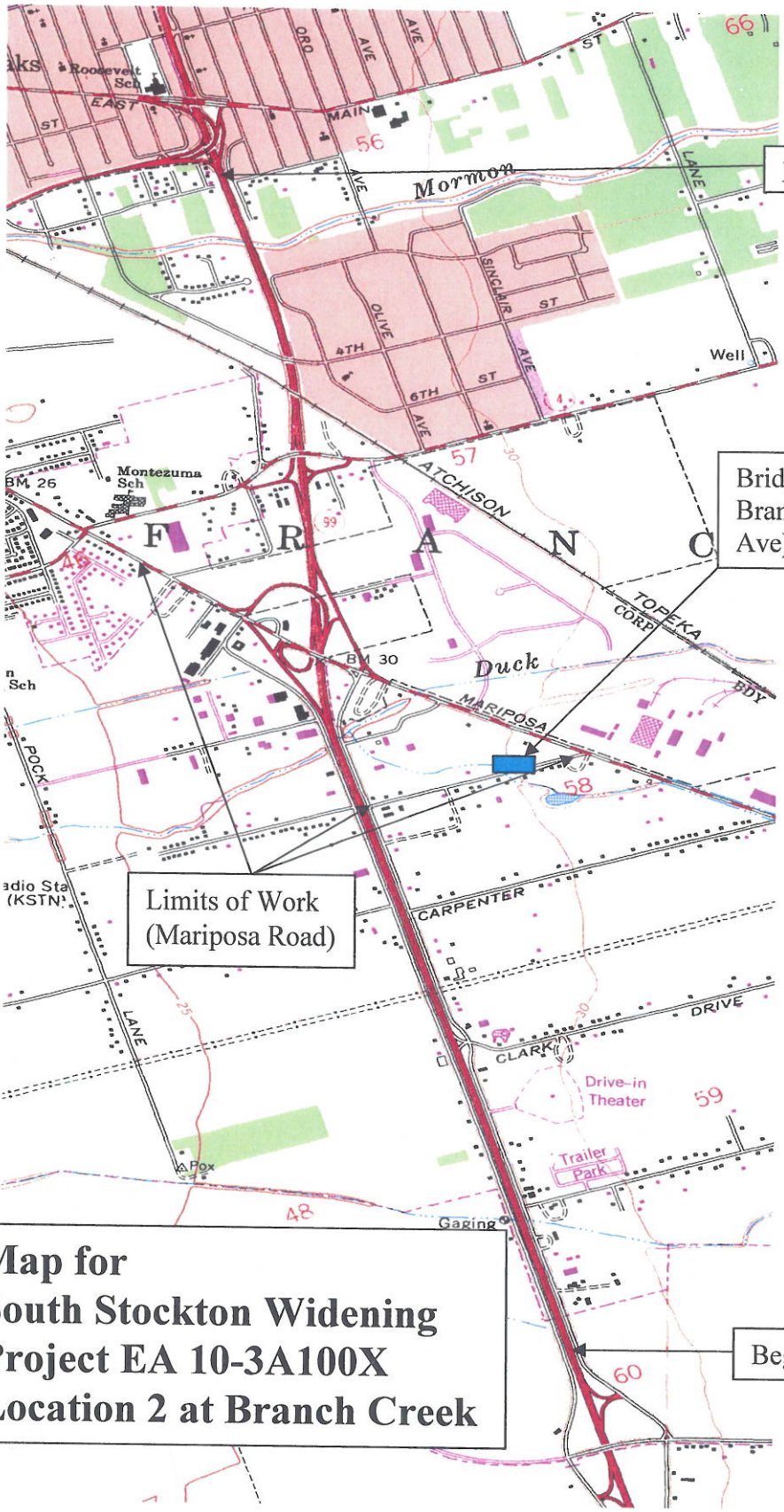
Staff recommends that the Board adopt the CEQA findings and approve the permit, conditioned upon receipt of a U.S. Army Corps of Engineers comment letter indicating that the District Engineer has no objection to the project, subject to conditions, and direct staff to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

A. Site Location Map
B. Draft Permit No. 18720
C. Project Plan and Profile

Technical Review:	Deb Biswas, PhD, PE
Technical Review Assistant:	Sergio Guillen, PE, Atkins
Environmental Review:	James Herota, ES
	Andrea Mauro, ES
Document Review:	David R. Williams, PE – Senior Engineer
	Len Marino, PE – Principal Engineer

ATTACHMENT - A



ATTACHMENT - B

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18720 BD

This Permit is issued to:

Caltrans
2015 E. Shields Avenue, Ste. 100
Fresno, California 93726

The proposed project consists of widening the existing three-span cast-in-place (CIP) RC Slab bridge at Munford Ave over Duck Creek South Branch (Caltrans Bridge No. 29C-0377). The project consists of widening the north and south side of the bridge by 7.19 feet. Up to 5 feet of excavation beyond the abutment will be required for this project which will be filled with approximately 33 cubic yard (cy) of structural backfill. The length and width of the bridge will be approximately 55 feet and 44 feet, respectively. No rock slope protection or slope paving of any kind are proposed at this bridge location. However, native vegetation will be planted erosion control. The Project is located at the Munford Avenue crossing of Duck Creek South Branch, east of State Highway Route 99, in San Joaquin County. (Section , T , R , MDB&M, San Joaquin County Flood Control and Water Conservation District, Duck Creek, San Joaquin County).

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

(SEAL)

Dated: _____

_____
Executive Officer

GENERAL CONDITIONS:

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

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

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

other land.

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

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

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

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

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

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

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

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

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

SPECIAL CONDITIONS FOR PERMIT NO. 18720 BD

THIRTEEN: This permit is not valid and no construction shall occur until the Central Valley Flood Protection Board receives written confirmation from the Army Corps of Engineers pursuant to 33 CFR Section 208.10 that the Corps has no objection to the project. The letter shall be incorporated into this permit as Exhibit A and all conditions shall be incorporated into this permit as if fully set forth herein.

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

FIFTEEN: The permittee is responsible for all liability associated with construction, operation, and maintenance of the permitted facilities and shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California; including its agencies, departments, boards, commissions, and their respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages arising from the project undertaken pursuant to this permit, all to the extent allowed by law. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

SIXTEEN: The permittee shall defend, indemnify, and hold the Central Valley Flood Protection Board and the State of California, including its agencies, departments, boards, commissions, and their

respective officers, agents, employees, successors and assigns (collectively, the "State"), safe and harmless, of and from all claims and damages related to the Central Valley Flood Protection Board's approval of this permit, including but not limited to claims filed pursuant to the California Environmental Quality Act. The State expressly reserves the right to supplement or take over its defense, in its sole discretion.

SEVENTEEN: The mitigation measures approved by the CEQA lead agency and the permittee are found in the Final Initial Study/Mitigated Negative Declaration adopted by the CEQA lead agency. The permittee shall implement all such mitigation measures.

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

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

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

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

TWENTY-TWO: Temporary staging, formwork, stockpiled material, equipment, and temporary buildings shall not remain in the floodway during the flood season from November 1 to April 15.

TWENTY-THREE: Prior to start of any demolition and/or construction activities within the floodway, the applicant shall provide the Central Valley Flood Protection Board with two sets of layout plans for any and all temporary, in channel cofferdam(s), gravel work pad(s), work trestle(s), scaffolding, piles, and/or other appurtenances that are to remain in the floodway during the flood season from November 1 through April 15.

TWENTY-FOUR: Debris that may accumulate on the permitted encroachment(s) and related facilities shall be cleared off and disposed of outside the floodway after each period of high water.

TWENTY-FIVE: All debris generated by this project shall be disposed of outside the floodway.

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

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

TWENTY-EIGHT: Backfill material for excavations shall be placed in 4- to 6-inch layers and

compacted to at least the density of the adjacent, firm, undisturbed material.

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

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

THIRTY-ONE: The permittee shall provide supervision and inspection services acceptable to the Central Valley Flood Protection Board.

THIRTY-TWO: The permittee shall submit as-built drawings to the Department of Water Resources' Flood Project Inspection Section upon completion of the project.

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

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

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

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

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

THIRTY-EIGHT: The bridge piers and bents shall be constructed parallel to the direction of streamflow.

THIRTY-NINE: Drainage from the bridge shall not be discharged into the streambank.

FORTY: Plans showing all construction facilities such as temporary staging, coffer dams, and falsework which shall remain in a floodway during November 1 to April 15, must be submitted to the board for approval prior to installation of these facilities.

ATTACHMENT - B

FORTY-ONE: All construction facilities such as temporary staging, coffer dams, and falsework must be designed to prevent bank erosion during normal streamflows and maintain maximum channel capacity during November 1 to April 15.

FORTY-TWO: The soffit of the widened bridge shall be no lower than that of the existing bridge.

FORTY-THREE: Bridge piers and bents placed within the floodway to support a widened portion of the existing bridge shall be constructed in line with the existing bents and piers.

FORTY-FOUR: The permittee shall comply with all conditions set forth in the letter from the San Joaquin County Flood Control & Water Conservation District dated December 20, 2011, which is attached to this permit as Exhibit B and is incorporated by reference.

EXHIBIT - B

SAN JOAQUIN COUNTY
FLOOD CONTROL & WATER CONSERVATION DISTRICT
P. O. BOX 1810
1810 EAST HAZELTON AVENUE
STOCKTON, CALIFORNIA 95201
TELEPHONE (209) 468-3000
FAX NO. (209) 468-2999

THOMAS M. GAU
DIRECTOR OF PUBLIC WORKS
FLOOD CONTROL ENGINEER

December 20, 2011

Central Valley Flood Protection Board
3310 El Camino Avenue
Sacramento, California 95821

Attention: Floodway Protection Section

SUBJECT: CENTRAL VALLEY FLOOD PROTECTION BOARD PERMIT APPLICATION OF THE CALIFORNIA STATE DEPARTMENT OF TRANSPORTATION (CALTRANS) TO WIDEN MUNFORD AVENUE BRIDGE CROSSING DUCK CREEK SOUTH BRANCH EAST OF STATE HIGHWAY ROUTE 99 ADJACENT TO ASSESSOR'S PARCEL NOS. 179-550-12 AND 179-560-11

Gentlemen:

Reference is made to the Central Valley Flood Protection Board (Board) Permit Application (Permit) of the Caltrans (Permittee) to widen the existing cast-in-place reinforced concrete slab bridge (Bridge No. 29C-0377) crossing Duck Creek South Branch at Munford Avenue (Project). The Project consists of: (a) widening the north and the south side of the bridge 7.19 feet for a total bridge width of 46.95 feet; (b) total bridge thickness of 1.1 feet; (c) five-feet-long embankments for the beginning and the end of bridge, which have been included in the HEC-RAS modeling.

The Project is located the at the Munford Avenue crossing of Duck Creek South Branch, east of State Highway Route 99, in San Joaquin County, adjacent to Assessor's Parcel Nos. 179-550-12 and 179-560-11.

The San Joaquin County Flood Control and Water Conservation District (District) has reviewed the Board's Permit Application of the Permittee and endorses the Project subject to the following conditions:

1. The District shall not be responsible for the maintenance of the facilities specified in this Permit.

2. The District shall not be held liable for damage(s) to the permitted encroachment(s) due to the District's operation, maintenance, flood fight, inspection, or emergency repairs.

3. The Permittee or the Successors-in-Interest shall be responsible for the modification or possible removal of the facilities, as requested by the District, if required for any future flood control plans at the sole cost and expense of the Permittee or the Successors-in-Interest.

4. The Permittee shall be liable for any damage to Duck Creek South Branch that may occur as a result of this Project.

5. The Project shall be constructed in accordance with the plans submitted with the application on November 14, 2011. Any revisions to the Project will require the submittal of the revised plans to the District for review and approval.

EXHIBIT - B

6. No work shall be allowed in the Duck Creek South Branch channel between November 1st and April 15th without prior approval of the Central Valley Flood Protection Board and the District.

7. The Permittee or Successors-in-Interest shall keep the encroachments properly maintained in accordance with applicable current or future local, State, and Federal standards.

8. Stockpiled materials, coffer dams, and construction equipment shall be removed from the floodway prior to November 1st.

9. The Permittee shall clean the channel of Duck Creek South Branch under the bridge and to a minimum of 50 feet upstream and downstream of the bridge before and after construction.

10. District approved access gates shall be installed at right angles across the banks of the Duck Creek South Branch to replace the existing gates. The gates shall be set back a minimum of 60 feet from the back of the sidewalk.

11. Access roads shall be kept open for maintenance at all times.

12. The Permittee shall restore the Duck Creek South Branch's invert and banks to the condition that existed prior to commencement of work.

13. Future maintenance of the improvements free from obstructions, erosion, and/or siltation shall be the ongoing responsibility of the Permittee or Successors-in-Interest.

14. Upon completion of the Project, the Permittee shall submit a hard copy and an electronic copy in AutoCAD and PDF format of the as-built drawings to:

    San Joaquin County Flood Control and Water Conservation District
    1810 East Hazelton Avenue
    Stockton, CA 95205

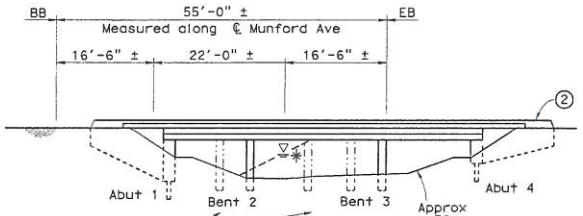
If there are any questions regarding these comments, please contact me at (209) 953-7617.

Sincerely,

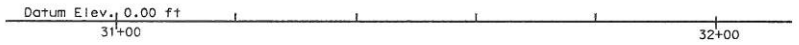
JOHN I. MAGUIRE
Engineering Services Manager

JIM:SS:to
FM-11019-T3

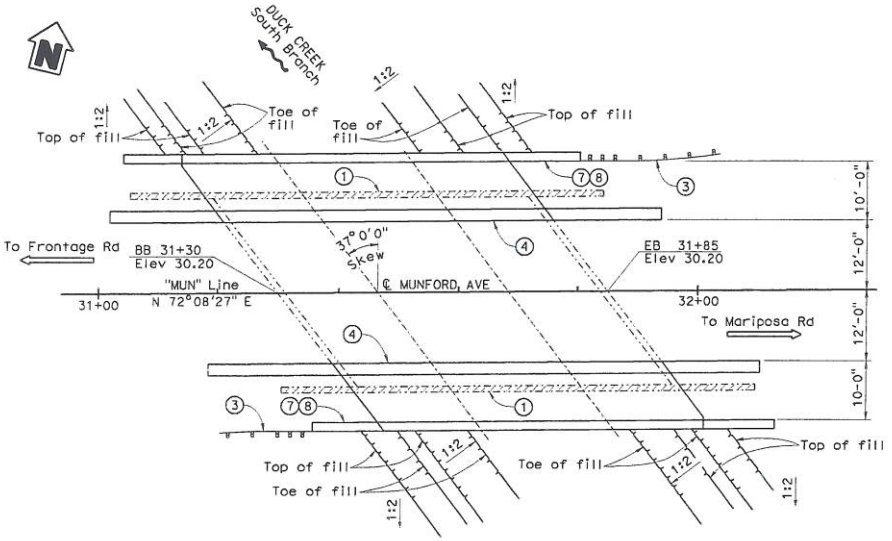
ATTACHMENT - C



Note:
Not all Piles are shown for clarity



ELEVATION
1" = 10'

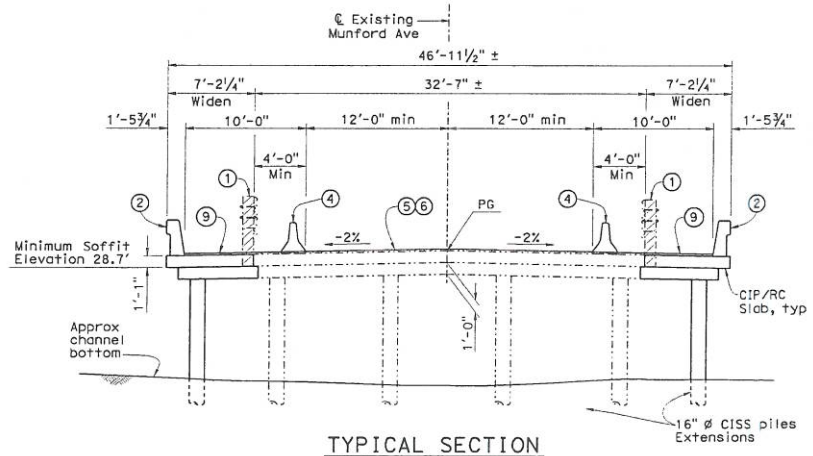


PLAN
1" = 10'

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LEGEND

- Existing structure.
- New structure.
- Denotes limits of removal of existing barrier and upper 3' of wing wall. Bridge removal (Portion), LOCATION K.
- ✳ 100 Year HW Elev = 26.3 ft For Hydrologic summary, see "FOUNDATION PLAN" sheet.
- Indicates direction of flow.



TYPICAL SECTION
1" = 5'

Notes:

1. Remove Existing Metal Beam Guard Rail
2. Concrete Barrier, Type 736
3. MBGR see "ROAD PLANS"
4. Temporary Railing, Type K.
5. Existing 2"± AC overlay to be removed.
6. ¾" polyester concrete overlay.
7. Paint "MUNFORD AVE BRIDGE".
8. Paint "Br No 29C-0377".
9. Match existing grade and cross slope.
10. For General Notes and Pile Data Table, see "GENERAL NOTES" sheet.
11. Construction specified between April 15 and October 1.

QUANTITIES

REMOVE ASPHALT CONCRETE SURFACING	1,792	SQFT
PREPARE CONCRETE BRIDGE DECK SURFACE	2,420	SQFT
BRIDGE REMOVAL (PORTION), LOCATION K	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	52	CY
STRUCTURE BACKFILL (BRIDGE)	29	CY
FURNISH 16" CAST-IN-STEEL SHELL CONCRETE PILING	330	LF
DRIVE 16" CAST-IN-STEEL SHELL CONCRETE PILE	8	EA
STRUCTURAL CONCRETE, BRIDGE	102	CY
DRILL AND BOND DOWEL	89	LF
FURNISH POLYESTER CONCRETE OVERLAY	162	CF
PLACE POLYESTER CONCRETE OVERLAY	2,420	SQFT
BAR REINFORCING STEEL (BRIDGE)	14,639	LB
CONCRETE BARRIER (TYPE 736)	169	LF

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4, 99	R19.5/R20.1, 15.0/18.6		

Chris V. Udarbe 11-04-11
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER — Chris V. Udarbe — No. C62985 — Exp. 06-30-2012 — CIVIL — STATE OF CALIFORNIA

DESIGN	BY R. Coria	CHECKED Phuong M. Vu	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	
DETAILS	BY L. Wang	CHECKED R. Coria	LAYOUT	BY R. Coria	CHECKED C. Udarbe
QUANTITIES	BY R. Coria	CHECKED Phuong M. Vu	SPECIFICATIONS	BY V. Renganathan	PLANS AND SPECS COMPARED X

Gary Joe
DESIGN ENGINEER

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN
DESIGN BRANCH 17

BRIDGE NO. 29C-0377
POST MILE 0.3 mi East of SR 99

SOUTH STOCKTON WIDENING
MUNFORD AVE BRIDGE (WIDEN)
GENERAL PLAN

UNIT: 3586
PROJECT NUMBER & PHASE: 10000004091
CONTRACT NO.: 10-3A1001

DISREGARD PRINTS BEARING EARLIER REVISION DATES →

REVISION DATES				SHEET	OF
05-01-08		05-01-11	9-6-11	1	13

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)

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