Meeting of the Central Valley Flood Protection Board
July 22, 2011
Draft Staff Report – Encroachment Permit
California Department of Transportation, District 10
Lone Tree Creek on State Route (SR) 99 in San Joaquin County

1.0 – ITEM

Consider approval of Permit No. 18662

2.0 – APPLICANT

California Department of Transportation, District 10

3.0 – LOCATION

The Lone Tree Creek project site is located along SR 99 about 1,650 feet north of French Camp Road (Turner Station) in San Joaquin County, California. The approximate site coordinates are 37.8645 degrees north latitude, 121.2189 degrees west longitude (See Attachment A for Site Location Map). The Lone Tree Creek is a regulated stream with no project levee at or close to the site.

4.0 – PROJECT DESCRIPTION

The SR99 Manteca Widening Project under the permit number 18662 (Attachment B) will consist of a new widened bridge structure which will be constructed to close the median gap between the existing left (southbound) and right (northbound) bridges. The new median widening structure will consist of a 3-span, concrete flat-slab bridge, approximately 35.3 feet wide and 68.7 feet long. The right bridge will also be widened on the east side to accommodate a new northbound onramp structure. The on-ramp structure will also consist of a 3-span, concrete flat-slab bridge, about 68.7 feet long, and 35.9 feet wide at Abutment 1 (south) to 29.8 feet wide at Abutment 4 (north). The left bridge will also be widened on the west side to accommodate a new southbound off-ramp structure. The off-ramp structure will also consist of a 3-span, concrete flat-slab bridge, about 61 feet long and 27 feet wide. All bridge structures will consist of pile

supported abutments and bents, similar to the existing bridge structures (See Attachment C for a Typical Section).

To protect abutment piles from scour, the existing concrete slope paving with cutoff wall will be repaired (or rehabilitated) within the median, and along the channel slopes. New fill will be placed in the floodway for approach ramp which will vary from about 2 feet to 5 feet above the existing grades.

5.0 – PROJECT ANALYSIS

The following project analyses have been made based on the review of the available technical information.

5.1 – Hydraulic Analysis

The hydraulic model was developed by HDR using the United States Army Corps of Engineers HEC-RAS program version 3.1.3 in 2009 and version 4.0 in 2010. The model included the existing bridge features along with the proposed design features. The model incorporated detailed survey cross sections from the topographic survey data performed by KSN (Oct. 2005). The peak flows used in the model were obtained from the FEMA FIS for the San Joaquin County (December 16, 2005). The peak flows did not account for planned future development upstream or downstream of the project site.

As per HDR, the surveyed bridge low cord elevation by KSN was lower than the bridge low cord elevation depicted on the FEMA FIS profile plots (approximately 1.26 feet for Lone Tree Creek). As stated in a memorandum by KSN, the low cord elevation discrepancy was primarily due to the changes in the published NGVD 29 benchmark elevations that had occurred over time. Similarly, the stream invert elevations used for the hydraulic model were also lower than the stream invert elevations depicted on the FEMA FIS profile plots by up to 5 feet. KSN recommended additional research to determine the reason for the vertical shift that was revealed. However, no additional research has been conducted so far. Because of that, the hydraulic model was developed using the updated topographic data from KSN within the project location including a notable datum shift from the FEMA profiles dated December 16, 2005.

The bridge flow skew angle used in the model for Lone Tree Creek was 22 degree. A flow skew of 18 degree was applied to the new offramp bridge over Lone Tree Creek. A pier skew, otherwise known as hydraulic skew or angle of attack of flow of 0 degree was applied to all crossings for both existing and proposed conditions because the existing and proposed piers were aligned parallel to flow within the channels.

Based on the hydraulic model, the minimum soffit clearance between the 100-year water surface elevation (WSE) and the bridge soffit is 1.67 feet. Soffit clearance is defined as the vertical distance between the top of the WSE and the bottom-most member of the soffit. Although the three new bridges will be constructed, the three new bridges will be tied to the existing left and right bridges. Therefore, the three new bridges may be considered as a part of the existing left and right bridge widening. Under such circumstances, the California Code of Regulations CCR Title 23 does not have any requirement for the minimum soffit clearance. However, based on the Title 23, the WSE with the new structures cannot be higher than the design WSE. Since there is no design WSE available at the Lone Tree Creek, there is no way to check whether the WSE with the new structure will be higher or lower than the design WSE.

Total potential scour at a bridge usually consists of long term stream aggradation/ degradation, contraction scour, and local scour. Other forms of scour such as bend scour, planiform changes, and scour due to formation of dunes were assumed to be negligible. Based on the field reconnaissance, it was assumed that the stream in this project was relatively stable. No evidence of stream channel lateral movement, streambed aggradations or degradation was observed. Therefore, the streambed degradation was assumed to be zero. Contraction scour at a bridge occurs due to constriction of active flow by roadway embankments. Structures placed in a flowing channel may interact with existing forces to contribute to increased local sediment transport that leads to local scour. The analysis predicted the potential contraction at the bridges and local scour at the bridge pier and abutments. The estimated local scour was 3.6 feet and total scour was 4.45 feet. The effect of the debris on scour depths was not modeled at this bridge. HDR had contacted the San Joaquin County Department of Public Works and was informed that the existing bridge did not have any history of significant debris potential. The existing soil conditions were obtained from the Blackburn Consulting geotechnical report. According to the report, the D_{50} particle size ranged from 0.008 mm to 0.015 mm. The report used an assumed value of 0.010 mm to be conservative.

5.2 – Geotechnical Analysis

Board staff reviewed the geotechnical report prepared by Blackburn Consulting Inc. (BCI). Board staff finds no issues with the geotechnical report regarding the bridge design at the Lone Tree Creek.

6.0 – AGENCY COMMENTS AND ENDORSEMENTS

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

- A non-Fed letter from the U. S. Army Corps of Engineers (USACE) has been received stating that the USACE has no comments or recommendations regarding this project which has been incorporated in 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 and Final Initial Study/Mitigated Negative Declaration (IS/MND, SCH Number: 2009112045, November 2009, March 2010) and the Mitigation Monitoring Plan for the State Route 99 Manteca Widening 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/2011/7-22-2011.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 10 offices.

Caltrans has determined that the project would not have a significant effect on the environment and adopted the IS/MND on March 18, 2010 and subsequently filed a Notice of Determination on March 26, 2010 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 in 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 Mitigation Monitoring Plan and address impacts to biological resources, hazards and hazardous materials, and noise. The description of the mitigation measures are further described in the adopted Mitigation Monitoring Plan.

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:

   Climate change issues have not been taken into account; however, it is assumed to be inland past the point tidal influence raises WSE. There are no other foreseeable projected future events that would impact this project.

9.0 – STAFF RECOMMENDATION

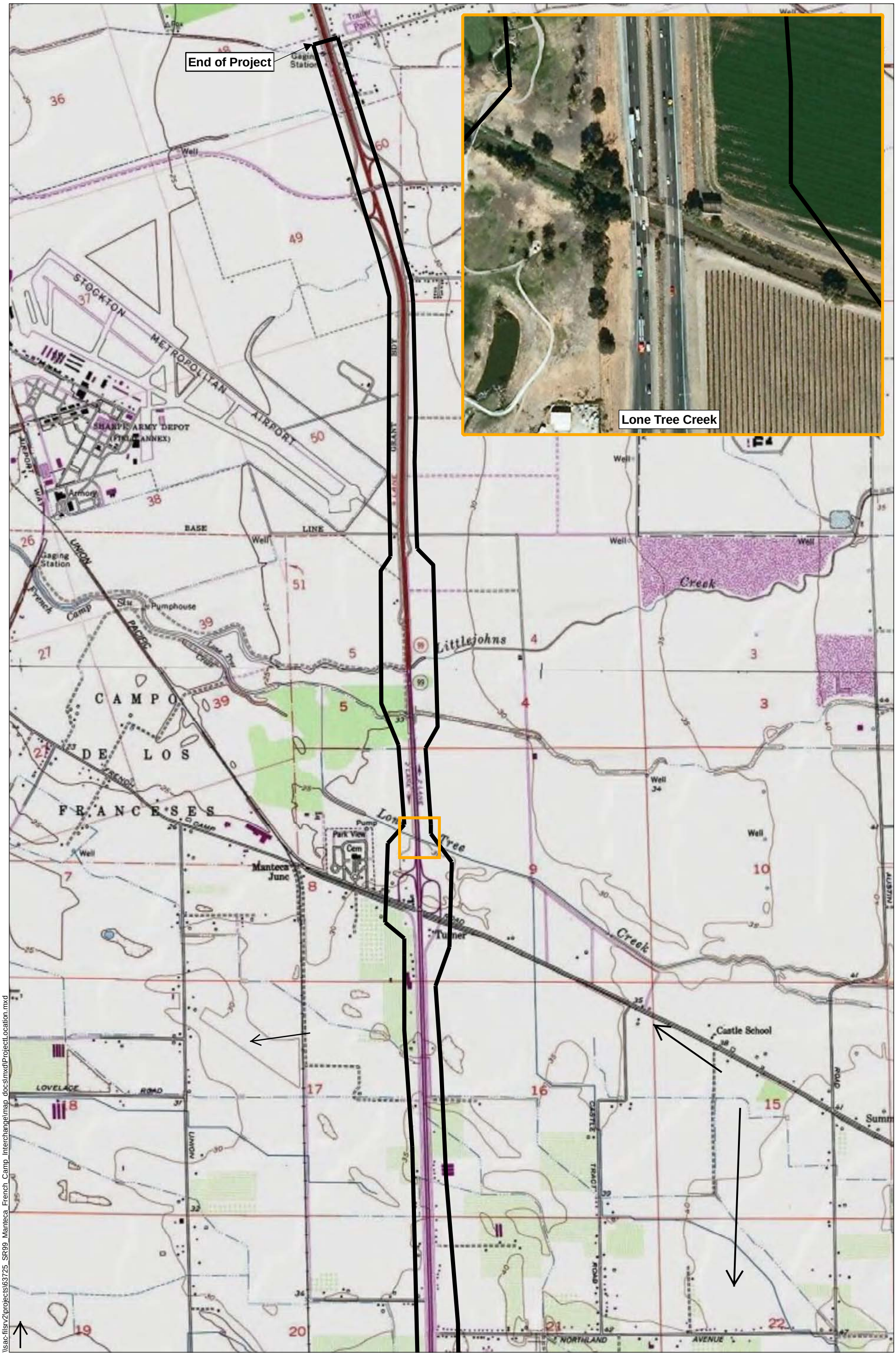
Staff recommends that the Board adopt the CEQA findings, approve Permit No. 18662, and direct the Executive Officer to take necessary actions to execute the permit and to file a Notice of Determination with the State Clearinghouse.

10.0 – LIST OF ATTACHMENTS

A. Location Map
B. Draft Permit No. 18662
C. Typical Foundation Plan and Cross-section

Reviewed by:	Deb Biswas, Ph.D., P.E.
Environmental Review by:	Andrea Mauro, E.S. and James Herota E.S.
Final Reviewed by:	Curt Taras, PE, Dan Fua, P.E.
	Len Marino, P.E.

ATTACHMENT - A



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Project Study Area

N

0 1,400 2,800 4,200 5,600 Feet

1 inch = 2,000 feet

Project Location Map

Figure 2A - Lone Tree Creek

HDR
ONE COMPANY | *Many Solutions*™

DRAFT

STATE OF CALIFORNIA
THE RESOURCES AGENCY

THE CENTRAL VALLEY FLOOD PROTECTION BOARD

PERMIT NO. 18662 BD

This Permit is issued to:

California Department of Transportation
2015 East Shields Avenue, Suite 100-A
Fresno, California 93726-5428

To widen the existing bridge crossing over Lone Tree Creek by 35 ft 4 in within the median to provide an additional 12 ft lane and 10 ft shoulder in each direction of travel, separated by a concrete barrier (Type 60A Modified). The median barrier will have communication conduit installed within its base. The bridge will also be widened by 30 ft on the east side to accommodate the northbound on-ramp of the French Camp Road Interchange. The existing concrete slope protection at the abutments will remain undamaged for the median bridge widening. For the east side widening, concrete slope protection (20 CY) will be placed within the north and south abutments, approximately 3 ft to 8 ft beyond the outer edge of the structure extension. The Southbound Off-Ramp Bridge will provide a new crossing over Lone Tree Creek, which will consist of a 26 ft 10 in wide structure with a 12 ft lane and paved shoulders with concrete barriers (Type 732). Concrete slope protection will be placed within the north and south abutments (27 CY total). Within the south abutment, the concrete slope protection will extend approximately 12 ft beyond the east structure edge. Within the north abutment, the concrete slope protection will extend 9 ft beyond the east structure edge and between 5 ft and 10 ft beyond the west structure edge. The concrete slope protection will have a cut off wall depth of 4 ft 6 in below original ground. Lone Tree Creek and SR99 (Section 29, T1S, R7E, W, San Joaquin County Flood Control and Water Conservation District, Lone Tree 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)

ATTACHMENT - B

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. 18662 BD

THIRTEEN: 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.

FOURTEEN: 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.

FIFTEEN: 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.

SIXTEEN: 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.

SEVENTEEN: 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.

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

NINETEEN: 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: The permittee shall contact the Department of Water Resources by telephone, (916) 574-1206, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 10 working days prior to start of work may result in delay of the project.

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

TWENTY-TWO: 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 July 15.

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

TWENTY-FIVE: 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 July 15.

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

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

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

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

THIRTY-TWO: In the event that levee or 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-THREE: 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-FOUR: 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-FIVE: 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-SIX: 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-SEVEN: The abandoned or dismantled bridge shall be completely removed and disposed of outside the limits of the levee section and floodway.

THIRTY-EIGHT: Piers, bents, and abutments being dismantled shall be removed to at least 1 foot below the natural ground line and at least 3 feet below the bottom of the low-water channel.

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

FORTY: Drainage from the bridge shall not be discharged into the streambank.

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

FORTY-TWO: 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 July 15.

FORTY-THREE: The soffit of the bridge shall be no lower than that of the replaced bridge.

FORTY-FOUR: 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-FIVE: A letter from the U. S. Army Corps of Engineers dated July 11, 2011 indicating that the project does not impact a federally constructed project is attached to this permit for reference as Exhibit A.

FORTY-SIX: The permittee shall comply with all conditions set forth in the letter from the San Joaquin County Flood Control & Water Conservation District dated January 12, 2011, which is attached to this permit as Exhibit B and is incorporated by reference.

EXHIBIT - A

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

REPLY TO
ATTENTION OF

Flood Protection and Navigation Section (18662)

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

JUL 11 2011

Dear Mr. Punia:

We have reviewed a permit application by the California Department of Transportation (application number 18662). This project includes widening the existing Highway 99 bridge over Lone Tree Creek. The project is located at 37.8645°N 121.2189°W NAD83, San Joaquin County, California.

The District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project.

A Section 10 and/or Section 404 permit (2009-1109) has been issued for this work.

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

Sincerely,

Meegan G. Nagy, P.E.
Chief, Flood Protection and Navigation Section

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 R. FLINN
DIRECTOR OF PUBLIC WORKS
FLOOD CONTROL ENGINEER

January 12, 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 CALTRANS AT THE STATE HIGHWAY ROUTE 99 CROSSING OF LONE TREE CREEK

Gentlemen:

Reference is made to the Central Valley Flood Protection Board Permit Application of the California Department of Transportation to widen State Highway Route 99 bridge over Lone Tree Creek. The existing four-lane bridge will be widened within the median to add two lanes, and expanded to the east of the existing structure to add a northbound on-ramp. Twenty-two piles will be placed to support the proposed median and on-ramp. The project is located at the State Highway Route 99 crossing of Lone Tree Creek, 1,700 feet north of French Camp Road, in San Joaquin County, in Section 29, Township 1 South, Range 7 East, Mount Diablo Base and Meridian.

The San Joaquin County Flood Control and Water Conservation District (District) has reviewed the Central Valley Flood Protection Board Permit application of the City of Stockton 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 Permittee's sole cost and expense.

4. The Permittee shall be liable for any damage to Lone Tree Creek that may occur as a result of this project.

5. The project shall be constructed in accordance with the plans, dated June 11, 2010, submitted with the application, dated October 6, 2010. Any revisions to the project will require the submittal of the revised plans to the District for review and approval.

6. No work shall be allowed in the Lone Tree Creek channel between November 1st and April 15th without prior approval of 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. The piles shall be constructed parallel to the direction of flow, and inline with the existing supports.

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

10. The Permittee shall restore the Lone Tree Creek's invert and banks to the condition that existed prior to commencement of work

11. 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:

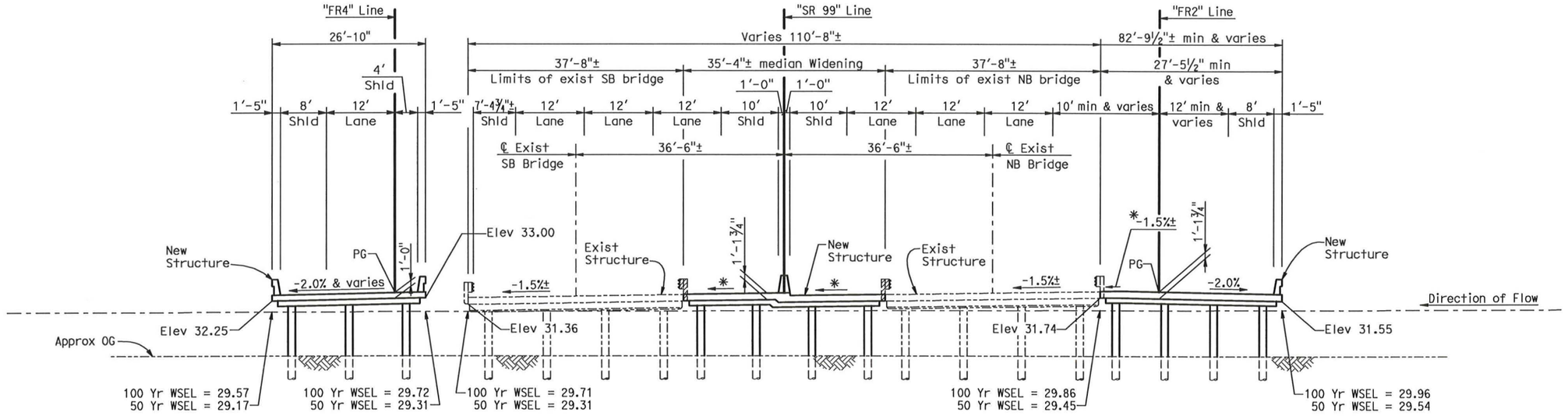
    San Joaquin County Flood Control and Water Conservation District
    1810 East Hazelton Avenue
    Stockton, CA 95205

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

Sincerely,

BARRY O'REGAN, P.E.
Acting Engineering Division Manager

BO:SS:mk
FM-10L038-M3



* Match existing PG and cross slope.

TYPICAL SECTION AT LONE TREE CREEK

1" = 10'

REGISTERED PROFESSIONAL ENGINEER
LANCE M. JOAB
68374
Expires 9/30/2011
CIVIL
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
SHARIQ PERVAIZ
C 67068
EXP. 9-30-12
CIVIL
STATE OF CALIFORNIA

HDR

HDR Engineering, Inc.

ATTACHMENT - C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
10	SJ	99			

REGISTERED CIVIL ENGINEER 6-24-11 DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER SHARIQ PERVAIZ No. C67068 Exp. 9-30-12 CIVIL STATE OF CALIFORNIA

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.

SAN JOAQUIN COUNCIL OF GOVERNMENTS
555 E. WEBER AVE.
STOCKTON, CA 95202

HDR ENGINEERING, INC.
2365 IRON POINT ROAD, SUITE 300
FOLSOM, CA 95630

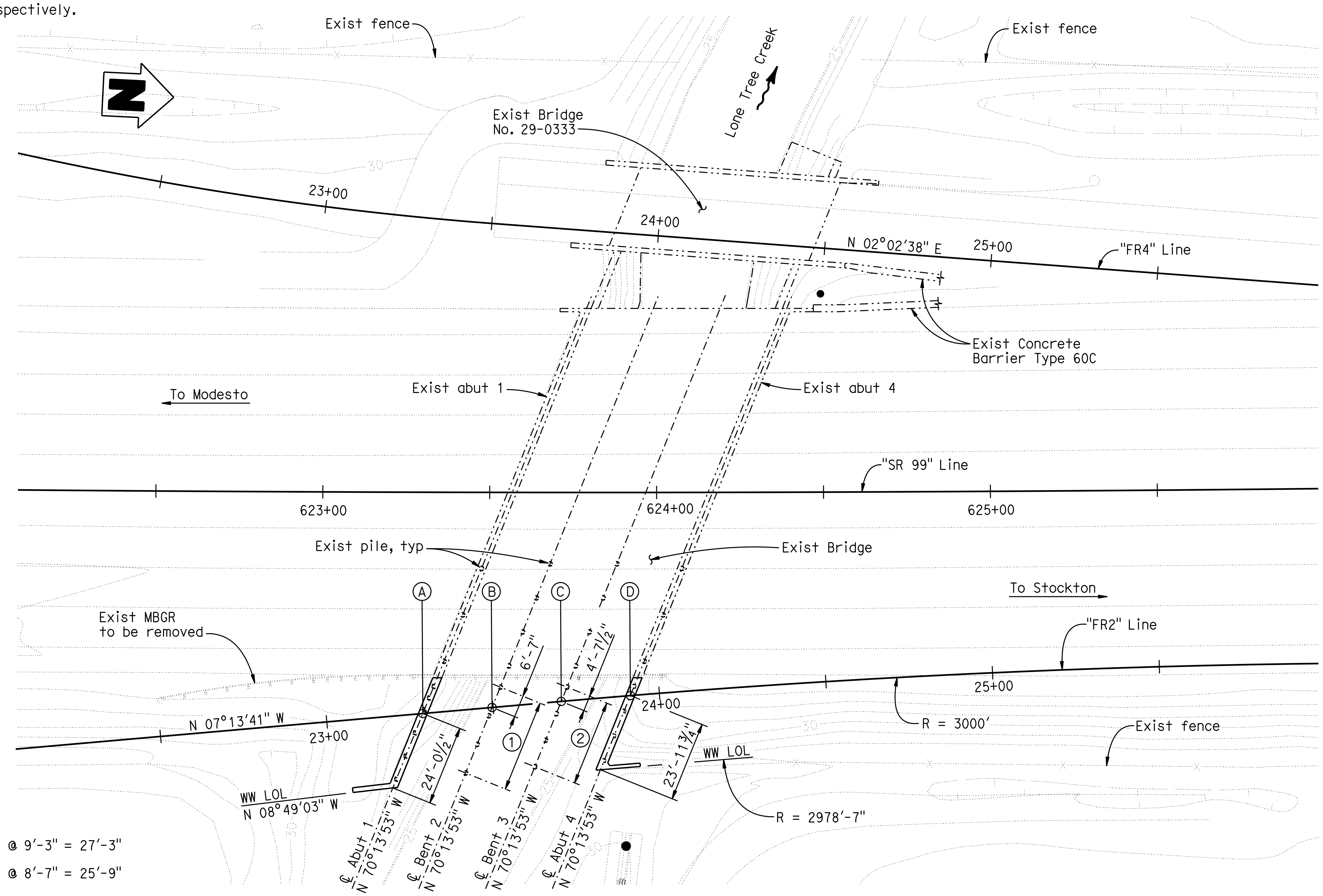
PILE DATA TABLE

Location	Pile Type	Nominal Resistance		Design Tip Elevations (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)
		Compression (kips)	Tension (kips)			
Abut 1	Class 90 Alt 'X'	140	0	-5.0 (a)	-5.0	140
Bent 2 & 3	PC/PS Conc Pile Class 140	280	0	-23.0 (a)(b)	-23.0	310
Abut 4	Class 90 Alt 'X'	140	0	-5.0 (a)	-5.0	140

Design tip elevations for Abutments are controlled by: (a) Compression.
Design tip elevations for Bents are controlled by: (a) Compression (Strength Limit), (b) Scour, respectively.

ABUTMENTS & BENTS ℄ STATIONS

(A) "FR2" Line Sta 23+28.88
(B) "FR2" Line Sta 23+49.70
(C) "FR2" Line Sta 23+70.51
(D) "FR2" Line Sta 23+91.29



(1) 3 spaces @ 9'-3" = 27'-3"
(2) 3 spaces @ 8'-7" = 25'-9"

PLAN
1" = 20'

Note:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any materials.

HYDROLOGIC SUMMARY TABLE

Drainage Area: 86.0 Square Miles

	Design Flood	Base Flood	Overtopping Flood
Frequence (Years)	50	100	N/A
Discharge (Cubic Feet per Second)	840	955	2855
Water Surface Elevation at Bridge (Feet)	29.58	30.00	N/A

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.

BENCH MARKS

BENCHMARK# 658 ELEV. 33.00 Ft
DESCRIPTION: KSN CONTROL POINT, ½" REBAR WITH YELLOW CAP STAMPED "KSN CONTROL", LOCATED AT APPROXIMATE CENTERLINE STATION 625+67, ON THE NORTHBOUND MAINLINE, ON THE OUTSIDE SHOULDER, 1' EAST OF THE EDGE OF PAVEMENT, 205' NORTH OF THE END OF THE CENTERLINE OF LONE TREE CREEK.
NGVD 29, N2138213.81, E6354203.76.

BENCHMARK# 699 ELEV. 31.83 Ft
DESCRIPTION: KSN CONTROL POINT, ½" REBAR WITH YELLOW CAP STAMPED "KSN CONTROL", LOCATED APPROXIMATE CENTERLINE STATION 625+50, ON THE SOUTHBOUND MAINLINE, ON THE OUTSIDE SHOULDER, 3' WEST OF THE EDGE OF PAVEMENT, 140' NORTH OF THE CENTERLINE OF LONE TREE CREEK.
NGVD 29, N2138191.62, E6354088.62.

NOTES:
1. See "ROAD PLANS" for type and locations of all existing and proposed utilities.
2. Location of existing utilities shown are approximate. The Contractor shall verify locations of all affected utilities prior to performing any excavation.
3. Not all piles shown here.

LEGEND:
-·-·- Indicates existing structure.
Indicates driven piles at abutments.
Indicates driven piles at bents.

GEOTECHNICAL PROFESSIONAL 6-20-11 APPROVAL DATE

DESIGN OVERSIGHT
SIGN OFF DATE

SCALE: 1" = 40'	VERT.DATUM NGVD29	HORZ.DATUM NAD1983
PHOTOGRAMMETRY AS OF: 08/09/2007	ALIGNMENT TIES	
SURVEYED BY AERIAL PHOTOMAPPING SERVICES	DRAFTED BY KSN	
FIELD CHECKED BY KRIS F. NEHMER	CHECKED BY KRIS F. NEHMER	

	BY	CHECKED
DESIGN	S PERVAIZ	P CHENG
DETAILS	J VOUGHT	P CHENG
QUANTITIES	K SANFORD	E GAHAN

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

JOHN A. KLEMUNES, JR.
PROJECT ENGINEER

BRIDGE NO. 29-0023
POST MILE 11.80

LONE TREE SLOUGH BRIDGE (WIDEN)
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV.7/16/10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

UNIT: 1455
PROJECT NUMBER & PHASE: 10000204411
CONTRACT NO.: 10-0E6121

DISREGARD PRINTS BEARING EARLIER REVISION DATES
REVISION DATES: 5-3-10 2-4-11 5-19-11 6-24-11
SHEET 3 OF 19

FILE => 29-0023-e-fp01.dgn

USERNAME => jvought DATE PLOTTED => 23-JUN-2011 TIME PLOTTED => 14:18