

**Meeting of the Central Valley Flood Protection Board
December 18, 2015**

Staff Report – Encroachment Permit

**San Joaquin County
Victory Avenue Bridge Replacement, San Joaquin County**

1.0 – ITEM

Consider approval of Permit No. 19054. (Attachment B)

2.0 – APPLICANT

San Joaquin County

3.0 – LOCATION

The project is located approximately 3.5 miles northeast of the City of Escalon in a rural area of San Joaquin County.
(Lone Tree Creek, San Joaquin County, see Attachment A)

4.0 – PROJECT DESCRIPTION

San Joaquin County proposes to replace the existing Victory Avenue Bridge crossing Lone Tree Creek with a single span bridge 40 feet long and 31.5 feet wide. Additional associated activities include streambank scour protection, post-construction recontouring, erosion control seeding, and temporary access/falsework in Lone Tree Creek.

5.0 – AUTHORITY OF THE BOARD

California Water Code § 8534, 8590 – 8610.5, and 8700 – 8710

California Code of Regulations Title 23 (Title 23)

- § 6, Need for a Permit
- § 112, Streams Regulated and Nonpermissible Work Periods
- § 121 Erosion Control
- § 128, Bridges

6.0 – PROJECT ANALYSIS

San Joaquin County proposes to remove the existing Victory Avenue Bridge that crosses Lone Tree Creek and replace it with a one-span 40 foot long and 31.5 foot wide bridge. The rock slope protection (RSP) will be placed seven (7) feet and five (5) feet respectively from the upstream and downstream edges of the bridge deck. Lone Tree Creek is a regulated stream as listed in Title 23, Table 8.1 and it is considered a minor stream. There are no levees along Lone Tree Creek.

6.1 – Hydraulic Analysis

The 100-year peak flow discharge for Lone Tree Creek at Victory Avenue Bridge is 752 cubic feet per second. A HEC-RAS model was created in order to analyze the existing and proposed flow conditions for the Lone Tree Creek at the Victory Road Bridge.

The existing Victory Avenue Bridge constricts flow which causes the channel and bank to overtop into fields on the north and south side of the Lone Tree Creek. The bridge freeboard, with a proposed low chord elevation of 148.7 feet, is 2.11 feet at the upstream face of the proposed bridge. The HEC-RAS analysis showed all computed water surface elevation changes due to bridge replacement are negligible, with a slight decrease of 0.23 feet at the upstream of the proposed bridge. The velocity at the upstream of the proposed bridge is 3.39 feet per second (Attachment E). Under the proposed conditions the roadway approaches to the bridge are free from inundation for the 100-year event.

Based on Board staff's review the proposed project is expected to result in no significant adverse hydraulic impacts to the Lone Tree Creek channel or floodway and the project conforms to Title 23.

6.2 – Geotechnical Analysis

The proposed bridge is supported by two (2) abutments with foundation. The proposed abutment foundations consist of concrete piles that will be constructed to depths greater than the estimated maximum scour depth to prevent anticipated scour. The addition of the RSP scour remediation will render any potential local pier or contraction scour negligible.

Board staff has reviewed geotechnical information provided by San Joaquin County and has determined that the proposed project is expected to cause no adverse geotechnical impacts to the Lone Tree Creek channel or floodway due to the proposed abutments design and RSP.

7.0 – AGENCY COMMENTS AND ENDORSEMENTS

The comments and endorsements associated with the project are as follows:

- The U.S. Army Corps of Engineers (USACE) Sacramento District non-fed letter was received on November 2, 2015, and indicated that the USACE District Engineer has no comments or recommendations regarding flood control because the proposed work does not affect a federally constructed project. The letter has been incorporated into the permit as Exhibit A.
- San Joaquin County endorsed the project with conditions on May 15, 2015. The conditions have been incorporated into the permit.

8.0 – CEQA ANALYSIS

Board staff has prepared the following California Environmental Quality Act (CEQA) analysis:

The Board, as a responsible agency under CEQA, has reviewed the Initial Study/Mitigated Negative Declaration (IS/MND) (SCH Number: 2014092023, September, 2014) and Mitigation Measures for the Victory Avenue Bridge Replacement at Lone Tree Creek prepared by San Joaquin County as the lead agency.

These documents, including project design, may be viewed or downloaded from the Board website at <http://www.cvfpb.ca.gov/meetings/2015/12-18-2015.cfm> under a link for this agenda item. The documents are also available for review in hard copy at the Board and County offices.

San Joaquin County determined that the project would not have a significant effect on the environment and filed a Notice of Determination on December 11, 2014 with the County Clerk of San Joaquin County. 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 IS/MND and address impacts to biological resources, agriculture, air quality, biological resources, cultural resources and geology. The description of the mitigation measures are further described in the adopted IS/MND.

The documents and other materials which constitute the record of the Board's proceedings in this matter are in the custody of Leslie Gallagher, Executive Officer, Central Valley Flood Protection Board, 3310 El Camino Ave., Rm. 151, Sacramento, California 95821.

9.0 – CALIFORNIA WATER CODE § 8610.5 CONSIDERATIONS

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

The Board has considered all the evidence presented in this matter, including the application for Permit No. 19054, and all supporting hydraulic, geotechnical, and other technical documentation provided by San Joaquin County.

2. The best available science that related to the scientific issues presented by the Executive Officer, legal counsel, the Department of Water Resources 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. On the issue of hydraulic impacts San Joaquin County developed and applied a HEC-RAS hydraulic model. This model is considered one of the best available scientific tools for the purpose of evaluating water surface elevation changes developed by the proposed project.

3. Effects of the decision on the facilities of the State Plan of Flood Control (SPFC), and consistency of the proposed project with the Central Valley Flood Protection Plan as adopted by Board Resolution 2012-25 on June 29, 2012:

This project is well upstream of any State Plan of Flood Control facilities and is therefore expected to result in no adverse impacts on those facilities. The project is consistent with the adopted 2012 Central Valley Flood Protection Plan and current Title 23 standards because it is predicted to result in no adverse impacts to water surface elevations, channel velocities, or geotechnical impacts to SPFC facilities.

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

Staff does not anticipate any future projects that would impact the bridge structure and channel based on research of plans and other projects in the area.

10.0 – STAFF RECOMMENDATION

Board staff recommends that the Board:

- Adopt the CEQA findings;
- Approve Encroachment Permit No. 19054 in substantially the form provided; and,
- Direct the Executive Officer to take the necessary actions to execute the permit and file a Notice of Determination pursuant to CEQA with the State Clearinghouse.

11.0 – LIST OF ATTACHMENTS

A. Project Vicinity and Location Maps

B. Draft Permit No. 19054

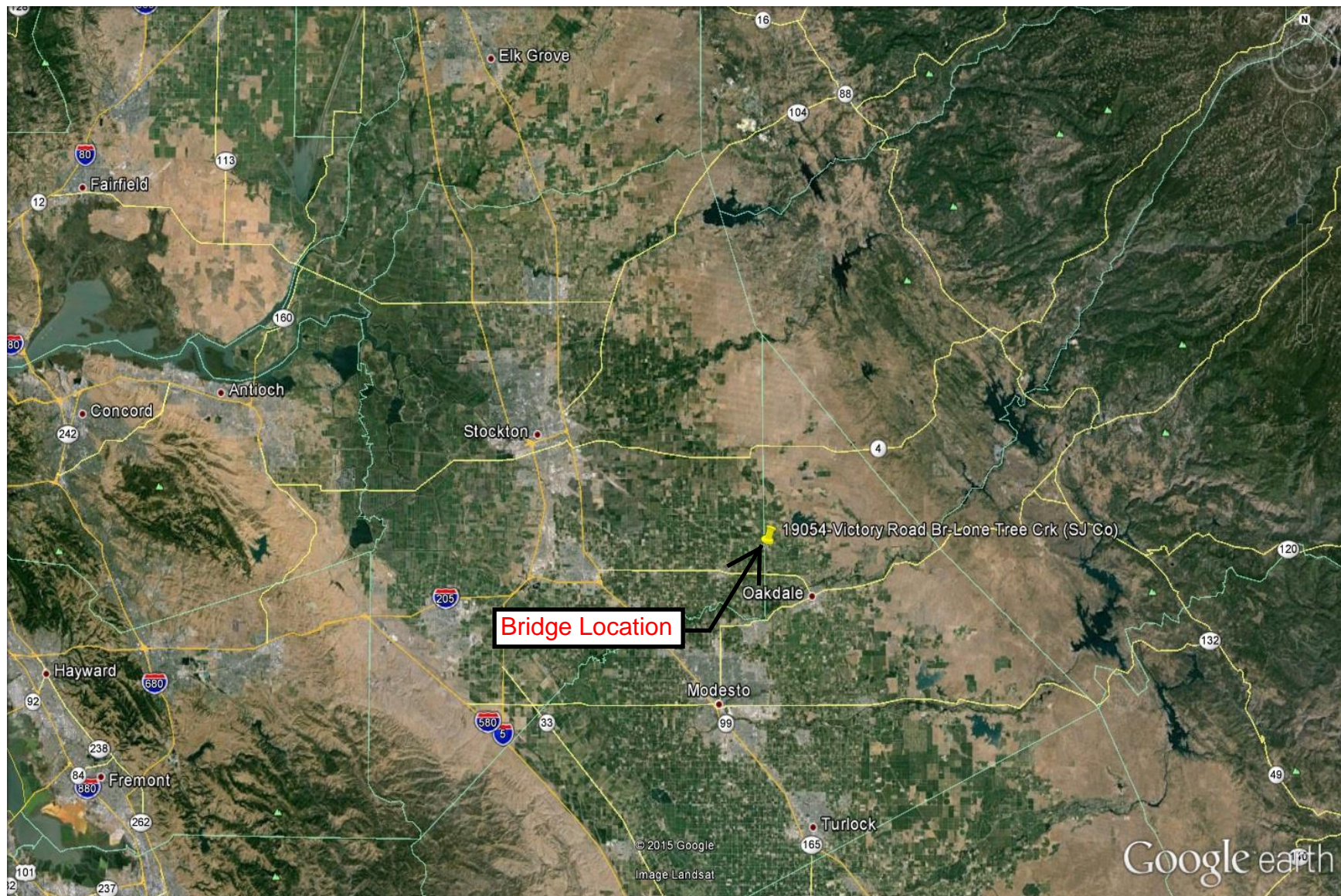
C. Project Drawings

D. Hydraulic Profile Information

Prepared by:	Sungho Lee, Engineer, Water Resources, Permitting Section
Document Review:	Ilene Wellman-Barbree, Senior Engineer, Permitting Section James Herota, Senior Environmental Scientist (Specialist) Gary Lemon, PE, Senior Engineer, Permitting Section Mitra Emami, PE, Operation Branch Chief
Legal Review:	Nicole Rinke, Attorney General

This page intentionally left blank.

Attachment A





DRAFT

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

PERMIT NO. 19054 BD**This Permit is issued to:**

San Joaquin County/Stanislaus County
1810 E. Hazelton Avenue
Stockton, California 95201

San Joaquin County proposes to replace the existing Victory Avenue Bridge crossing Lone Tree Creek with a singles pan bridge 40 feet long and 31.5 feet wide. Additional activities include streambank scour protection, post-construction recontouring, erosion control seeding, and temporary access/falsework in Lone Tree Creek.

The project is located on the Victory Avenue, approximately 3.5 miles northeast of City of Escalon. The bridge traverses the Lone Tree Creek at the south-eastern edge of San Joaquin County adjacent to Stanislaus County.
(Section 25 & 30, T1S, R9, 10E, MDB&M, San Joaquin County Flood Control and Water Conservation District, Lone Tree Creek, Stanislaus 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. 19054 BD

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

LIABILITY AND INDEMNIFICATION

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

FIFTEEN: The permittee shall defend, indemnify, and hold the Board, DWR, and their respective officers, agents, employees, successors and assigns, safe and harmless, of and from all claims and damages related to the Board's approval of this permit, including but not limited to claims filed

pursuant to the California Environmental Quality Act. The Board and DWR expressly reserve the right to supplement or take over their defense, in their sole discretion.

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

SEVENTEEN: The Board and DWR 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: If the permittee does not comply with the conditions of the permit and enforcement by the Board is required, the permittee shall be responsible for bearing all costs associated with the enforcement action, including reasonable attorney's fees. Permittee acknowledges that State law allows the imposition of fines in enforcement matters.

PERMITTING AND AGENCY CONDITIONS

NINETEEN: Board staff received a letter, dated November 2, 2015, from the U.S. Army Corps of Engineers (USACE) District Engineer stating that the District Engineer has no comments or recommendations regarding flood control. This letter is attached to this permit as Exhibit A and is incorporated by reference.

TWENTY: The permittee agrees to incur all costs for compliance with local, State, and Federal permitting. If any conditions issued by other agencies conflict with any of the conditions of this permit, then the permittee shall resolve conflicts between any of the terms and conditions that agencies might impose under the laws and regulations it administers and enforces.

PRE-CONSTRUCTION

TWENTY-ONE: The permittee shall contact the Board by telephone at (916) 574-0609, and submit the enclosed postcard to schedule a preconstruction conference. Failure to do so at least 20 working days prior to start of work may result in delay of the project.

TWENTY-TWO: Prior to commencement of work, the permittee shall create a photo record, including associated descriptions of project conditions. The photo record shall be submitted to the Board within thirty (30) calendar days of beginning the project.

TWENTY-THREE: The permittee shall provide construction supervision and inspection services acceptable to the Board.

TWENTY-FOUR: Thirty (30) calendar days prior to the start of any demolition and / or construction activities within the floodway or within the existing levee prism, the permittee shall submit two sets of

detailed plans and specifications and supporting geotechnical and / or hydraulic impact analyses to the Board's Chief Engineer, for any and all temporary, in channel, or levee prism work that may have an impact during the flood season from November 1 through April 15. The Board may request additional information as needed and will seek comment from the USACE and / or the local maintaining agency when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed thirty (30) working days.

CONSTRUCTION

TWENTY-FIVE: 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 work, other than that approved by this permit, shall be done in the project area without prior approval of the Board.

TWENTY-SIX: All addenda and contract change orders made to the approved plans and / or specifications by the permittee after the Board approval of this permit shall be submitted to the Board's Chief Engineer for review and approval prior to incorporation into the permitted project. The submittal shall include all supplemental plans, specifications, and necessary supporting geotechnical, hydrology and hydraulics, or other technical analyses. The Board shall acknowledge receipt of the addendum or change submittal in writing within ten (10) working days of receipt, and shall work with the permittee to review and respond to the request as quickly as possible. Time is of the essence. The Board may request additional information as needed and will seek comment from the USACE and / or local maintaining agencies when necessary. The Board will provide written notification to the permittee if the review period is likely to exceed forty five (45) calendar days. Upon approval of submitted documents the permit shall be revised, if needed, prior to construction related to the proposed changes.

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

TWENTY-EIGHT: All debris generated by this project shall be disposed outside of the Lone Tree Creek floodway.

TWENTY-NINE: No material stockpiles, temporary buildings, or equipment shall remain in the floodway during the flood season from November 1 to April 15.

THIRTY: The existing bridge to be replaced shall be completely removed and disposed of outside the limits of the floodway.

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

THIRTY-TWO: Density tests by a certified materials laboratory will be required to verify compaction of backfill within the Lone Tree Creek floodway.

THIRTY-THREE: Backfill material for excavations within the bank section and within 10 feet of bridge supports within the floodway shall be placed in 4- to 6-inch layers and compacted to a minimum of 90 percent relative compaction per ASTM Method D1557-91, or 97 percent per ASTM D 698-91, and

above optimum moisture content.

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

THIRTY-FIVE: The permittee shall be responsible for all damages due to settlement, consolidation, or heave from any construction-induced activities.

VEGETATION / ENVIRONMENTAL MITIGATION

THIRTY-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.

THIRTY-SEVEN: In the event that scour of channel bed injurious to the Lone Tree Creek floodway occurs as a result of the project, the permittee shall repair the eroded area and propose measures, to be approved by the Board, to prevent further erosion.

POST-CONSTRUCTION

THIRTY-EIGHT: The permittee shall be responsible for repair of any damages to the Lone Tree Creek floodway due to construction, operation, or maintenance of the proposed project.

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

OPERATIONS AND MAINTENANCE

FORTY: The permittee shall be responsible for repair of any damages to the levee, channel, banks, floodway, or any other flood control facilities due to construction, operation, or maintenance of the proposed project.

FORTY-ONE: The permittee shall maintain the permitted encroachment(s) within the utilized area in the manner required and as requested by the authorized representative of the Board, DWR, or any other agency responsible for maintenance.

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

FORTY-THREE: Drainage from the bridge shall not be discharged directly into Lone Tree Creek without proper erosion control measures in-place.

FORTY-FOUR: If the permitted structure results in any adverse hydraulic impact or scouring the

permittee shall provide appropriate mitigation measures subject to review and approval of the Board.

FORTY-FIVE: All debris that may accumulate around the bridge abutments within Lone Tree Creek shall be completely removed from the floodway following each flood season.

FORTY-SIX: The permitted encroachment(s) shall not interfere with the flood conveyance capability of the Lone Tree Creek floodway. If the permitted encroachment(s) are determined by any agency responsible for operation or maintenance of the Lone Tree Creek floodway to interfere, the permittee shall be required, at the permittee's cost and expense, to modify or remove the permitted encroachment(s) under direction of the Board. If the permittee does not comply, the Board may modify or remove the encroachment(s) at the permittee's expense.

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

PROJECT ABANDONMENT, CHANGE IN PLAN OF FLOOD CONTROL

FORTY-EIGHT: If the project works, or any portion thereof, is to be abandoned in the future, the permittee shall abandon the project under direction of the Board at the permittee's cost and expense.

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

END OF CONDITIONS



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

REPLY TO
ATTENTION OF

NOV -2 2015

Flood Protection and Navigation Section (19054)

Ms. Leslie M. Gallagher, Executive Officer
Central Valley Flood Protection Board
3310 El Camino Avenue, Room 151
Sacramento, CA 95821

Dear Ms. Gallagher:

We have reviewed permit application number 19054 submitted by San Joaquin County. This project includes replacing a 2 span, 22 foot long, 24.5 foot wide, existing Victory Road Bridge crossing Lone Tree Creek with a 1 span, 40 foot long, 31.5 foot wide bridge. The project also includes streambank scour protection; post-construction recontouring and erosion control seeding; and temporary access/falsework in Lone Tree Creek. The project is located approximately 3.5 miles northeast of the City of Escalon, at 37.820622°N 120.92415°W NAD83, San Joaquin County, CA.

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 application (SPK-2015-00206) is in process for this work.

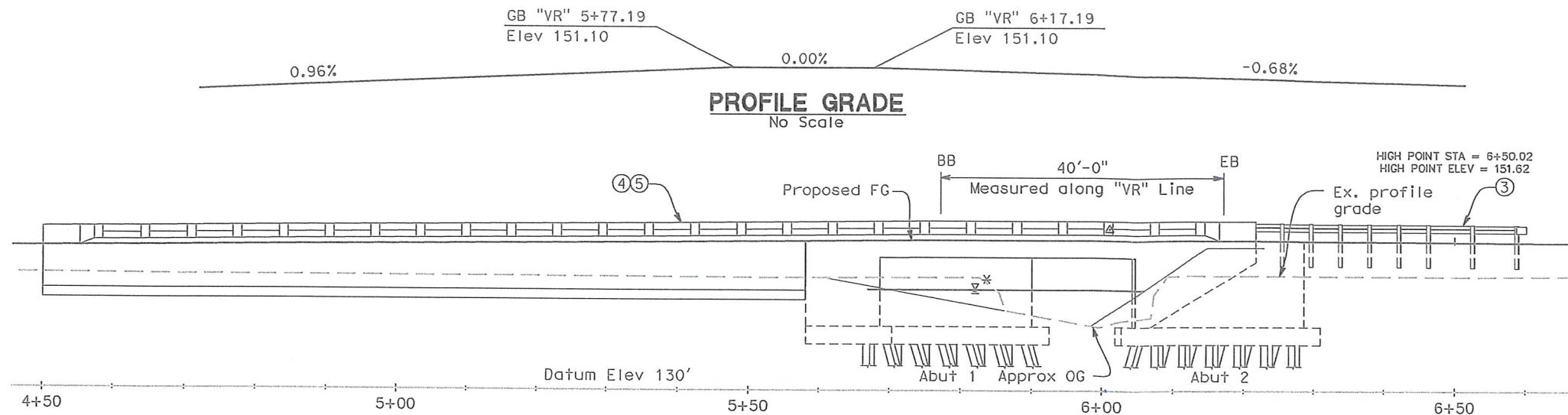
A copy of this letter is being furnished to Mr. Don Rasmussen, Chief, Flood Project Integrity and Inspection Branch, 3310 El Camino Avenue, Suite 200, Sacramento, CA 95821.

Sincerely,

A handwritten signature in blue ink, reading "Ryan Larson", is positioned above the printed name.

Ryan Larson, P.E.
Chief, Flood Protection and Navigation Section

This page intentionally left blank.



NOTE:
The Contractor shall verify all
controlling filed dimensions before
ordering or fabricating any materials.

NOTE:
1. For General Notes see
"DECK CONTOUR" sheet.
2. For Pile Data Table, see
"Foundation Plan" sheet.

LEGEND

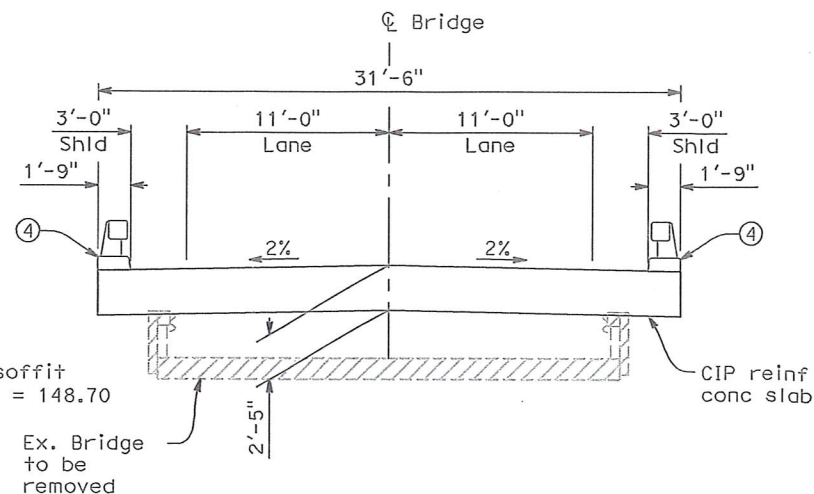
- ① Paint "Br. No. 29C-0356"
- ② Paint "Victory Road Bridge"
- ③ MBGR
- ④ Concrete Barrier Type 80
- ⑤ Concrete Barrier Type 80A
- ⑥ Approach Slab Type N(30D)
- Proposed Structure
- - - Existing Structure
- Direction of Flow
- Existing Bridge to be removed
- Indicates direction of traffic
- * FOR HYDROLOGIC SUMMARY, SEE
"FOUNDATION PLAN" SHEET

ELEVATION

1" = 10'-0"

QUANTITIES

BRIDGE REMOVAL	XX	LS
STRUCTURE EXCAVATION (BRIDGE)	XX	CY
STRUCTURAL EXCAVATION (RETAINING WALL)	XX	CY
STRUCTURE BACKFILL (BRIDGE)	XX	CY
STRUCTURE BACKFILL (RETAINING WALL)	XX	CY
FURNISH PILING (CLASS 200) ALT "X"	XX	FT
DRIVE PILES (CLASS 200) ALT "X"	XX	EA
STRUCTURAL CONCRETE, BRIDGE FOOTING	XX	CY
STRUCTURAL CONCRETE, BRIDGE	XX	CY
STRUCTURAL CONCRETE, RETAINING WALL	XX	CY
STRUCTURAL CONCRETE, APPROACH SLAB N(30D)	XX	CY
JOINT SEAL (MR = 1/2")	XX	FT
BAR REINFORCING STEEL (BRIDGE)	XX	FT
BAR REINFORCING STEEL (RETAINING WALL)	XX	FT
CONCRETE BARRIER (TYPE 80)	XX	FT
CONCRETE BARRIER (TYPE 80A)	XX	FT
GEOCOMPOSITE DRAIN	XX	SF
METAL BEAM GUARD RAILING	XX	LF

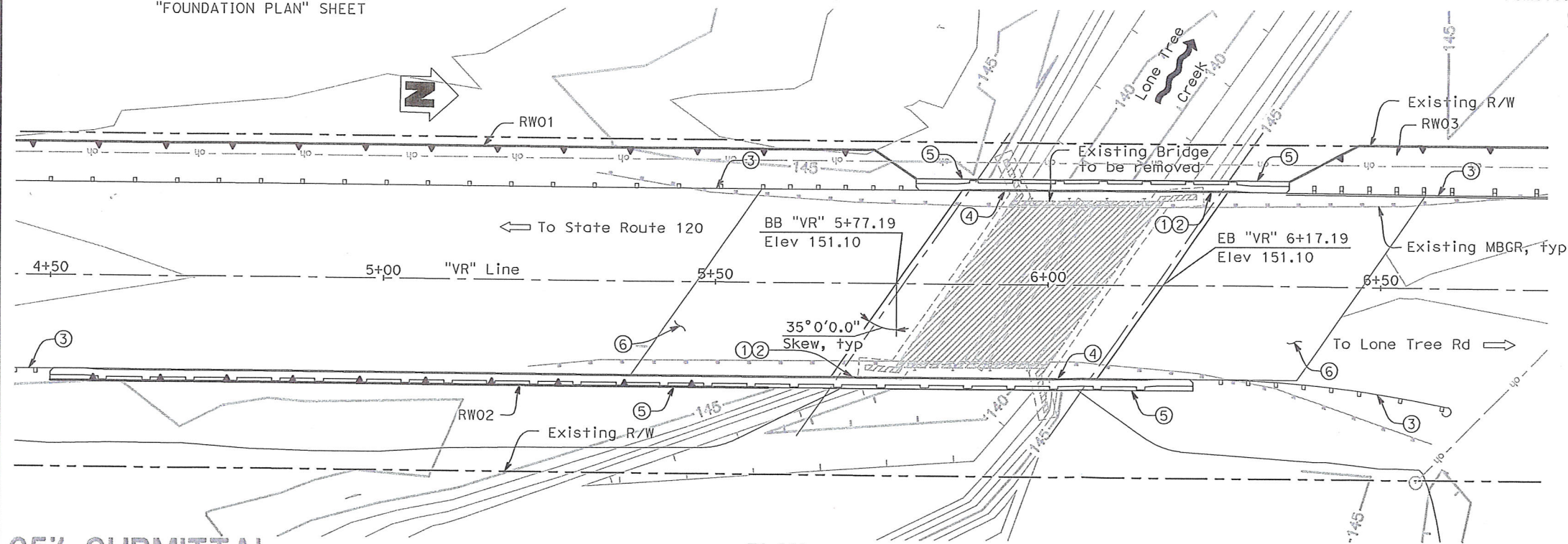


CAST-IN-PLACE REINFORCED SLAB TYPICAL SECTION

1" = 5'-0"

INDEX TO PLANS

Sheet No.	Title
1	GENERAL PLAN
2	DECK CONTOURS
3	FOUNDATION PLAN
4	ABUTMENT LAYOUT No. 1
5	ABUTMENT LAYOUT No. 2
6	ABUTMENT DETAILS No. 1
7	ABUTMENT DETAILS No. 2
8	TYPICAL SECTION
9	LONGITUDINAL DECK REINFORCEMENT
10	STRUCTURE APPROACH DRAINAGE DETAILS
11	STRUCTURE APPROACH TYPE N(30D)
12	ROCK SLOPE PROTECTION
13	RW01 GENERAL PLAN
14	RW02 GENERAL PLAN
15	RW03 GENERAL PLAN
16	LOG OF TEST BORINGS 1 OF 1



65% SUBMITTAL
NOT FOR CONSTRUCTION

PLAN

1" = 10'-0"

NIV5
BEYOND ENGINEERING

2405 NATOMAS PARK DR, FOURTH FLOOR,
916.6419100 TEL 916.6418222 FAX

SACRAMENTO, CA 95833
WWW.NIV5.COM

PLAN SCALE: AS NOTED
PROFILE SCALE: N/A
HORIZ: N/A
VERT: N/A

DESIGNED: L. KINNEBREW 12/14/2012
DRAWN: L. KINNEBREW 12/14/2012
CHECKED: C. SHENOY 12/14/2012
RECORD: C. SHENOY 12/14/2012
DRAWING: C. SHENOY 12/14/2012

CONTRACT NO.

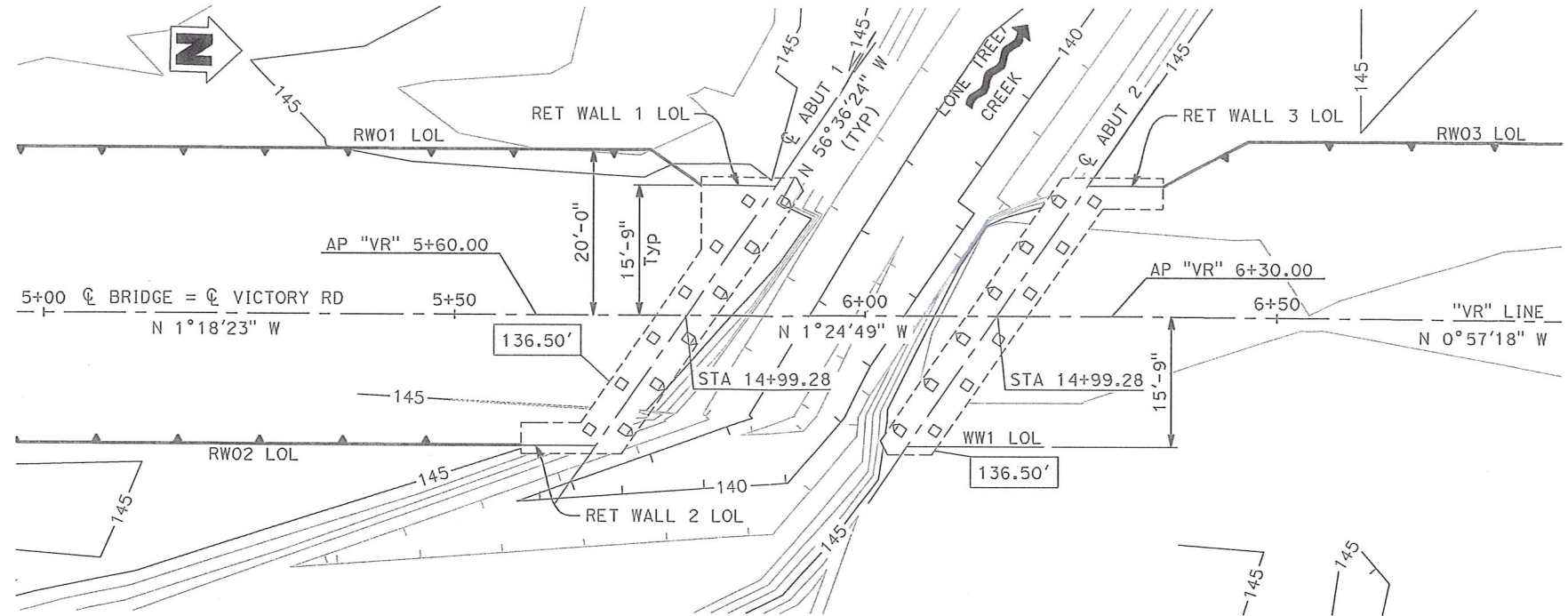
DEPARTMENT OF PUBLIC WORKS
SAN JOAQUIN COUNTY
VICTORY ROAD BRIDGE REPLACEMENT PROJECT
GENERAL PLAN



SHEET NO.
S1
OF
16

NOTE:
The Contractor shall verify all
controlling filed dimensions before
ordering or fabricating any materials.

- LEGEND:
- DENOTES BOTTOM OF FOOTING ELEVATION
 - & △ DENOTES CLASS 200 ALT "X" PILES
 - ← DENOTES DIRECTION OF FLOW



- NOTES:
1. CONTOUR GRADING SHALL BE PERFORMED AFTER BRIDGE REMOVAL.
 2. GROUND WATER ANTICIPATED BELOW ELEV 142.

BASIS OF COORDINATES

- THE HORIZONTAL DATUM IS BASED ON THE CALIFORNIA COORDINATE SYSTEM OF 1983 (NAD 83, ZONE 2, EPOCH 2002.00 IT IS BASED ON A GLOBAL POSITIONING SYSTEM (GPS) TECHNIQUES AND THE NOAA / NGS ONLINE POSITION SERVICE (OPUS). THE COORDINATES WERE DERIVED FROM THE FOLLOWING NGS CONTROL STATIONS: HS2265, AH9962, DE6246 AND AF9652.

VERTICAL DATUM

- THE VERTICAL DATUM IS DERIVED FROM GLOBAL POSITIONING SYSTEM (GPS) TECHNIQUES AND THE NOAA / NGS ONLINE POSITION SERVICE (OPUS). THE ELEVATIONS ARE DERIVED FROM THE FOLLOWING NGS CONTROL STATIONS: HS2265, AH9962, DE6246 AND AF9652.

HYDROLOGIC SUMMARY

DRAINAGE AREA: XX.XX SQUARE MILES		
	DESIGN FLOOD	BASE FLOOD
FREQUENCY (YEARS)	50	100
DISCHARGE (CUBIC FEET PER SECOND)	XXXX	752
WATER SURFACE (ELEVATION AT BRIDGE)	XXX.XX FT	146.6 FT

FLOOD PLAIN DATA IS 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 COUNTY OF SAN JOAQUIN OR NV5 AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.

PILE DATA TABLE

PILE LOCATION	PILE TYPE	DESIGN LOADING	NOMINAL RESISTANCE		DESIGN PILE TIP ELEVATION (FT)	SPECIFIED PILE TIP ELEVATION (FT)	NOMINAL DRIVING RESISTANCE REQUIRED (KIPS)
			COMPRESSION	TENSION			
ABUT 1 (NOTE 2)	CLASS 200 ALT "X"	80 KIPS	160 KIPS	0 KIPS	97.0' (A) 116.5' (B)	97.0'	200
ABUT 4 (NOTE 2)	CLASS 200 ALT "X"	80 KIPS	160 KIPS	0 KIPS	97.0' (A) 112.5' (B)	97.0'	200

- NOTES:
1. DESIGN TIP ELEVATION IS CONTROLLED BY THE FOLLOWING DEMANDS: (A) COMPRESSION, (B) LATERAL LOADS.
 2. PRE-DRILL THROUGH NEW EMBANKMENTS TO NATIVE SUBGRADE AT ALL ABUTMENT PILE LOCATIONS AND INSERT PILES IN PRE-DRILLED HOLES PRIOR TO DRIVING.

65% SUBMITTAL
NOT FOR CONSTRUCTION

NIV5
BEYOND ENGINEERING

2405 NATOMAS PARK DR, FOURTH FLOOR, SACRAMENTO, CA. 95833
916.641.9100 TEL 916.641.9222 FAX WWW.NIV5.COM

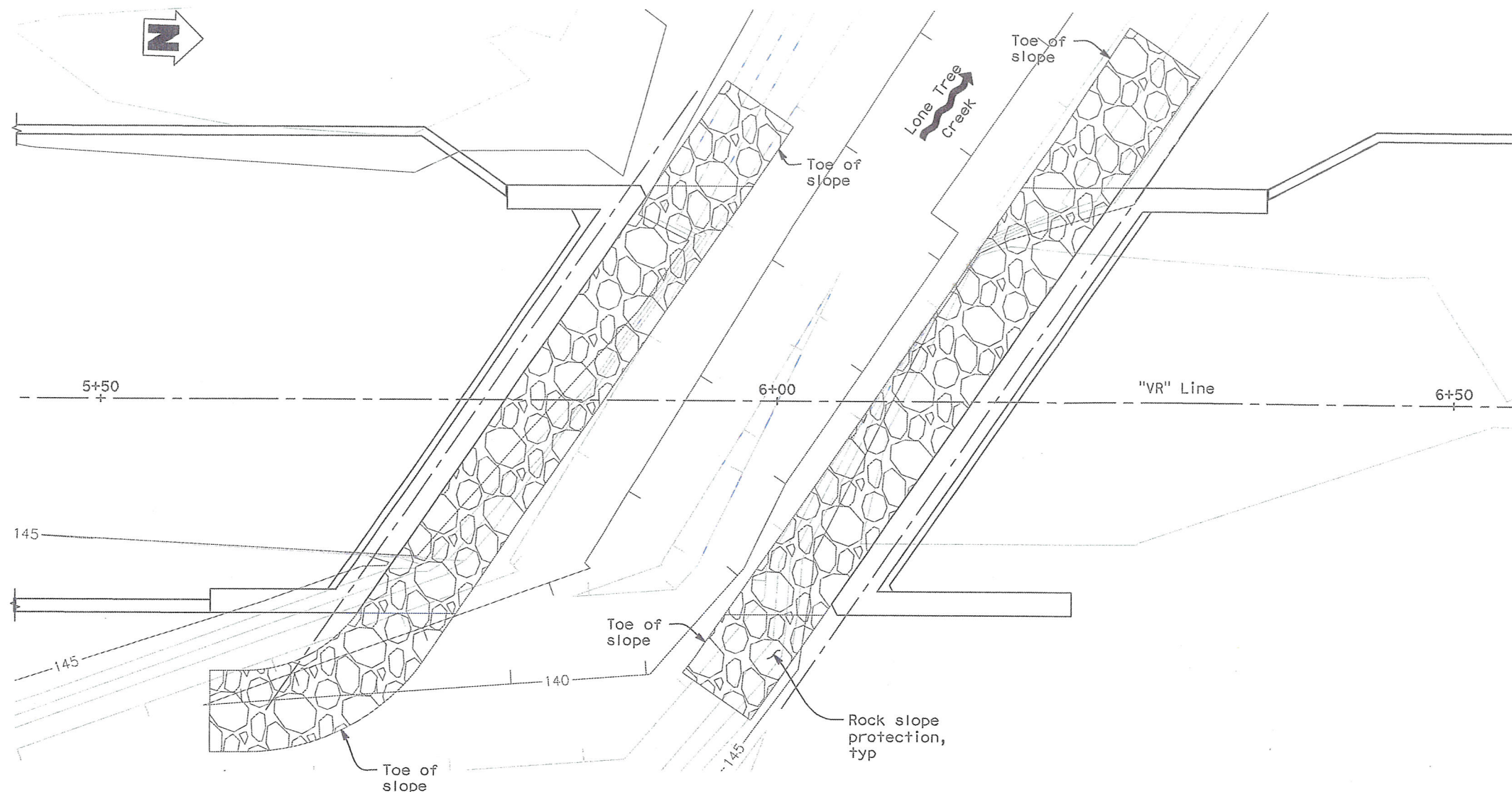
SAN JOAQUIN COUNTY
DEPARTMENT OF PUBLIC WORKS
VICTORY ROAD BRIDGE REPLACEMENT PROJECT
FOUNDATION PLAN



SHEET NO.
S3
OF
16

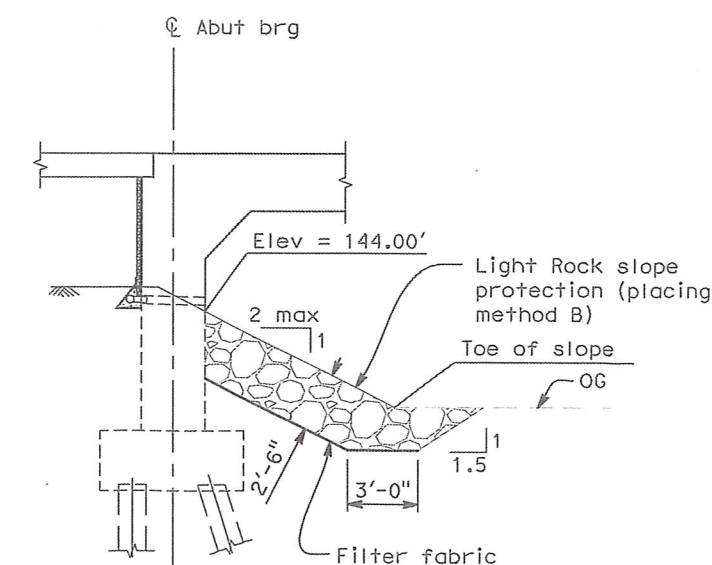
CONTRACT NO.
DESIGNED: L. KINNEBREW 12/14/2012
DRAWN: L. KINNEBREW 12/14/2012
CHECKED: C. SHENOY 12/14/2012
RECORD DRAWING:
PLAN SCALE: AS NOTED
PROFILE SCALE: N/A
HORIZ: N/A
VERT: N/A

NOTE:
The Contractor shall verify all
controlling filed dimensions before
ordering or fabricating any materials.



PLAN
1" = 5'-0"

NOTE:
1. For Grading information, see "CONTOUR GRADING PLAN" sheet.



TYPICAL SECTION
1/4" = 1'-0"

65% SUBMITTAL
NOT FOR CONSTRUCTION

N|V|5
BEYOND ENGINEERING

2495 NATOMAS PARK DR, FOURTH FLOOR,
916.841.9100 TEL. 916.841.9222 FAX
SACRAMENTO, CA 95833
WWW.NV5.COM

PLAN SCALE: AS NOTED
PROFILE SCALE:
HORIZ: N/A
VERT: N/A

DATE: 12/14/2012
DESIGNED: L. KINNEBREW
DRAWN: L. KINNEBREW
CHECKED: C. SHENOY
RECORD: C. SHENOY
DRAWING: C. SHENOY

CONTRACT NO.

DEPARTMENT OF PUBLIC WORKS
VICTORY ROAD BRIDGE REPLACEMENT PROJECT
ROCK SLOPE PROTECTION

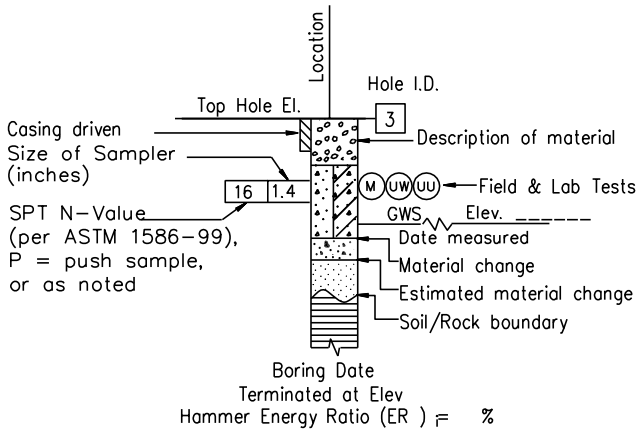


SHEET NO.
S12
OF
16

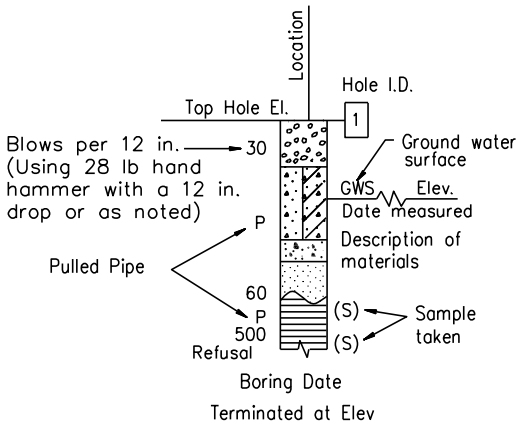
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
<div><div>Size</div><div></div></div>	A	Auger Boring (hollow or solid stem bucket)
<div><div>Size</div><div></div></div>	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
<div><div>Size</div><div></div></div>	R	Rotary drilled diamond core
<div><div>Size</div><div></div></div>	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
<div><div></div><div></div></div>	D	Dynamic Cone Penetration Boring
<div><div></div><div></div></div>	CPT	Cone Penetration Test (ASTM D 5778)
<div><div></div><div></div></div>	O	Other (note on LOTB)
Note: Size in inches.		

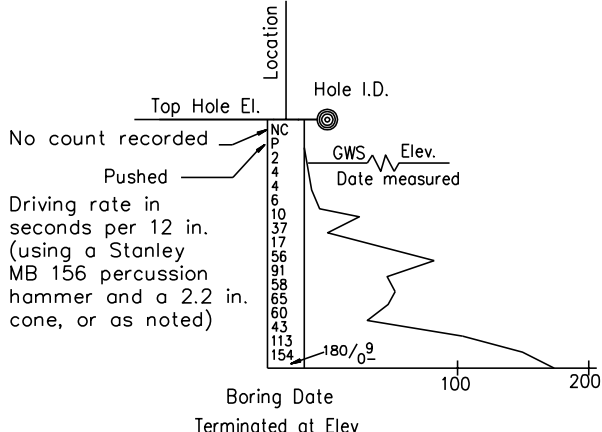
CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 – 0.25	0.25 – 0.5	0.12 – 0.25	0.12 – 0.25
Medium Stiff	0.25 – 0.5	0.5 – 1	0.25 – 0.5	0.25 – 0.5
Stiff	0.5 – 1	1 – 2	0.5 – 1	0.5 – 1
Very Stiff	1 – 2	2 – 4	1 – 2	1 – 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



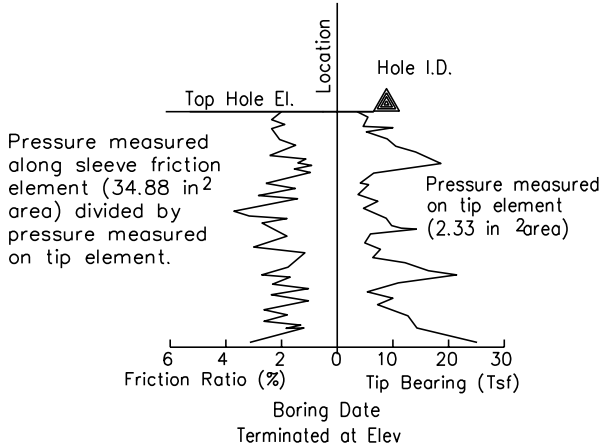
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

GROUP SYMBOLS AND NAMES					
Graphic/Symbol		Group Names		Graphic/Symbol	
	GW	Well-graded GRAVEL		CL	Lean CLAY
		Well-graded GRAVEL with SAND			Lean CLAY with SAND
	GP	Poorly-graded GRAVEL			Lean CLAY with GRAVEL
		Poorly-graded GRAVEL with SAND			SANDY lean CLAY
	GW-GM	Well-graded GRAVEL with SILT		CL-ML	SANDY lean CLAY with GRAVEL
		Well-graded GRAVEL with SILT and SAND			GRAVELLY lean CLAY
	GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY)			GRAVELLY lean CLAY with SAND
		Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)			
	GP-GM	Poorly-graded GRAVEL with SILT		ML	SILTY CLAY
		Poorly-graded GRAVEL with SILT and SAND			SILTY CLAY with SAND
	GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)			SILTY CLAY with GRAVEL
		Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)			SANDY SILTY CLAY
	GM	SILTY GRAVEL		OL	SANDY SILTY CLAY with GRAVEL
		SILTY GRAVEL with SAND			GRAVELLY SILTY CLAY
	GC	CLAYEY GRAVEL			GRAVELLY SILTY CLAY with SAND
		CLAYEY GRAVEL with SAND			
	GC-GM	SILTY, CLAYEY GRAVEL		OL	ORGANIC lean CLAY
		SILTY, CLAYEY GRAVEL with SAND			ORGANIC lean CLAY with SAND
	SW	Well-graded SAND			ORGANIC lean CLAY with GRAVEL
		Well-graded SAND with GRAVEL			SANDY ORGANIC lean CLAY
	SP	Poorly-graded SAND		CH	SANDY ORGANIC lean CLAY with GRAVEL
		Poorly-graded SAND with GRAVEL			GRAVELLY ORGANIC lean CLAY
	SW-SM	Well-graded SAND with SILT			GRAVELLY ORGANIC lean CLAY with SAND
		Well-graded SAND with SILT and GRAVEL			
	SW-SC	Well-graded SAND with CLAY (or SILTY CLAY)		MH	ORGANIC SILT
		Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)			ORGANIC SILT with SAND
	SP-SM	Poorly-graded SAND with SILT			ORGANIC SILT with GRAVEL
		Poorly-graded SAND with SILT and GRAVEL			SANDY ORGANIC SILT
	SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY)		OH	SANDY ORGANIC SILT with GRAVEL
		Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)			GRAVELLY ORGANIC SILT
	SM	SILTY SAND			GRAVELLY ORGANIC SILT with SAND
		SILTY SAND with GRAVEL			
	SC	CLAYEY SAND		OH	ORGANIC fat CLAY
		CLAYEY SAND with GRAVEL			ORGANIC fat CLAY with SAND
	SC-SM	SILTY, CLAYEY SAND			ORGANIC fat CLAY with GRAVEL
		SILTY, CLAYEY SAND with GRAVEL			SANDY ORGANIC fat CLAY
	PT	PEAT		OL/OH	SANDY ORGANIC fat CLAY with GRAVEL
					GRAVELLY ORGANIC fat CLAY
		COBBLES			GRAVELLY ORGANIC fat CLAY with SAND
		COBBLES and BOULDERS			

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 in.)
Very Loose	0 – 5
Loose	5 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% – 10%
Little	15% – 25%
Some	30% – 45%
Mostly	50% – 100%

PARTICLE SIZE		
Description		Size (in.)
Boulder		Greater than 12
Cobble		3 – 12
Gravel	Coarse	3/4 – 3
	Fine	1/5 – 3/4
Sand	Coarse	1/16 – 1/5
	Medium	1/64 – 1/16
	Fine	1/300 – 1/64
Silt and Clay		Less than 1/300

PRELIMINARY
NOT FOR CONSTRUCTION

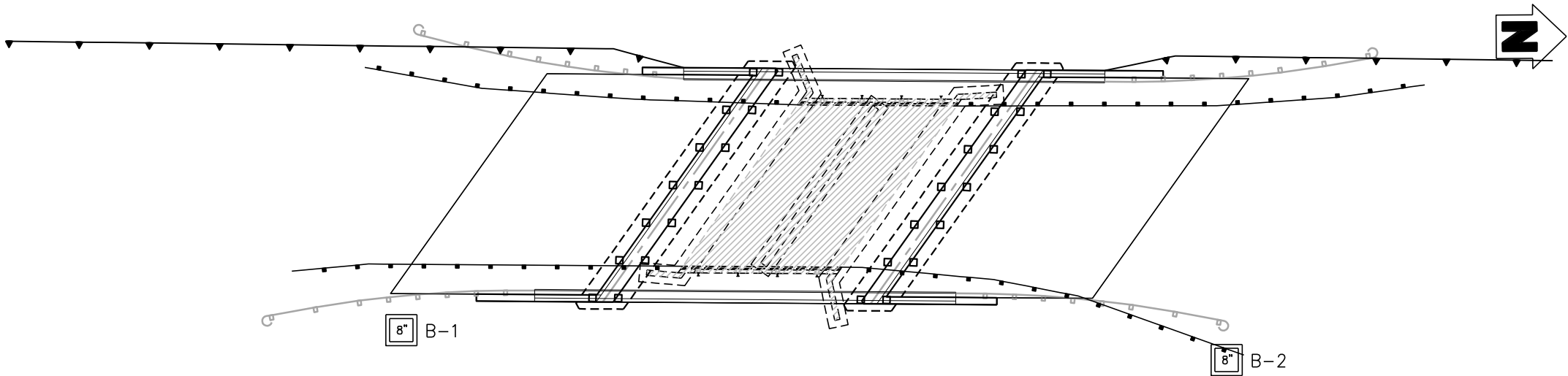


PLAN SCALE: N/A
PROFILE SCALE: N/A
HORIZ: N/A
VERT: N/A

DESIGNED: L. TRAN - CRUZ 06/04/2012
DRAWN: D. WANG 06/04/2012
CHECKED: D. WANG 06/08/2012
RECORD DRAWING:
CONTRACT NO. _____

SAN JOAQUIN COUNTY
VICTORY ROAD BRIDGE REPLACEMENT PROJECT
LOG OF TEST BORINGS
Victory Road Bridge Replacement Project

SHEET NO. _____
OF _____



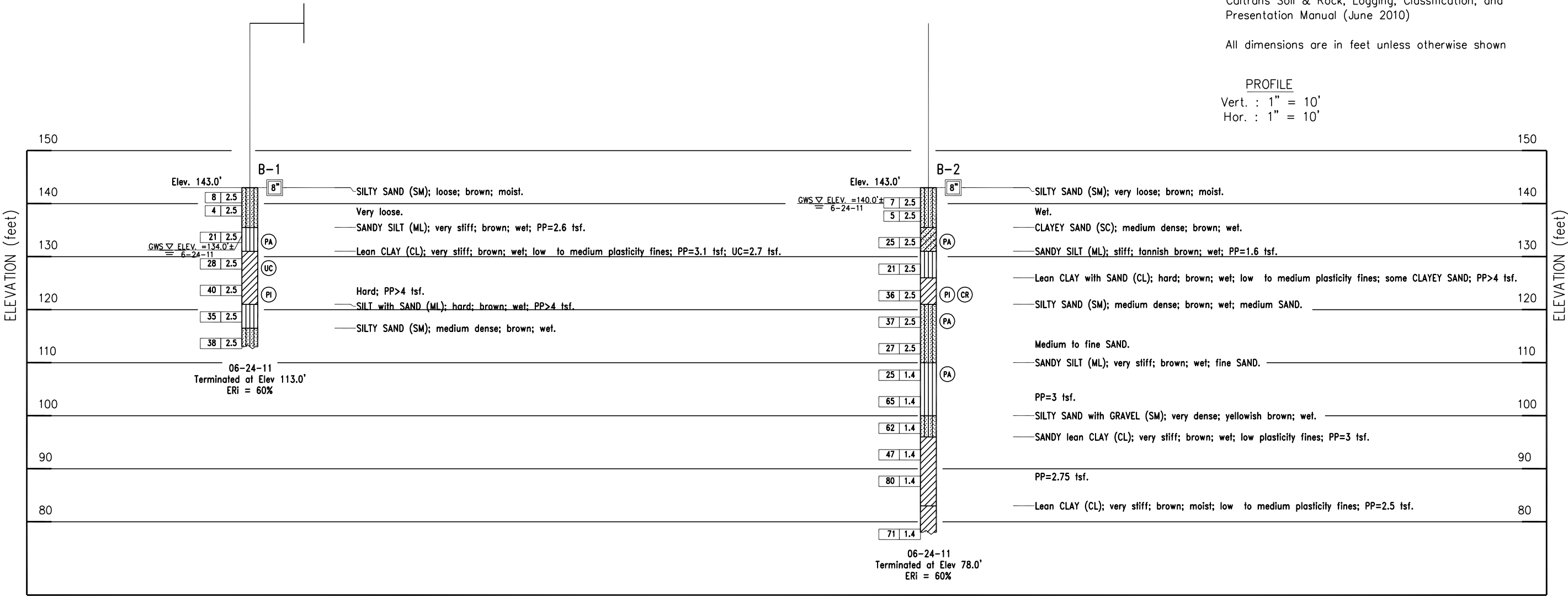
PLAN
1"=10'

Notes:
Standard Penetration Test Sampler: I.D. = 1.4"; O.D. = 2"
Modified California Sampler: I.D. = 2.5"; O.D. = 3"
Hammer Assembly: A 140 lb hammer with a 30" drop
(Automatic Hammer)

This LOTB sheet was prepared in accordance with the
Caltrans Soil & Rock, Logging, Classification, and
Presentation Manual (June 2010)

All dimensions are in feet unless otherwise shown

PROFILE
Vert. : 1" = 10'
Hor. : 1" = 10'



PRELIMINARY
NOT FOR CONSTRUCTION

NV5
NOLTE VERTICALFIVE
NOLTE ASSOCIATES, INC.

2495 NATOMAS PARK DR, FOURTH FLOOR, SACRAMENTO, CA. 95833
916.641.9100 TEL 916.641.9222 FAX WWW.NV5.COM

PLAN SCALE: 1"=10'
PROFILE SCALE: N/A
HORIZ: N/A
VERT: 1"=10'

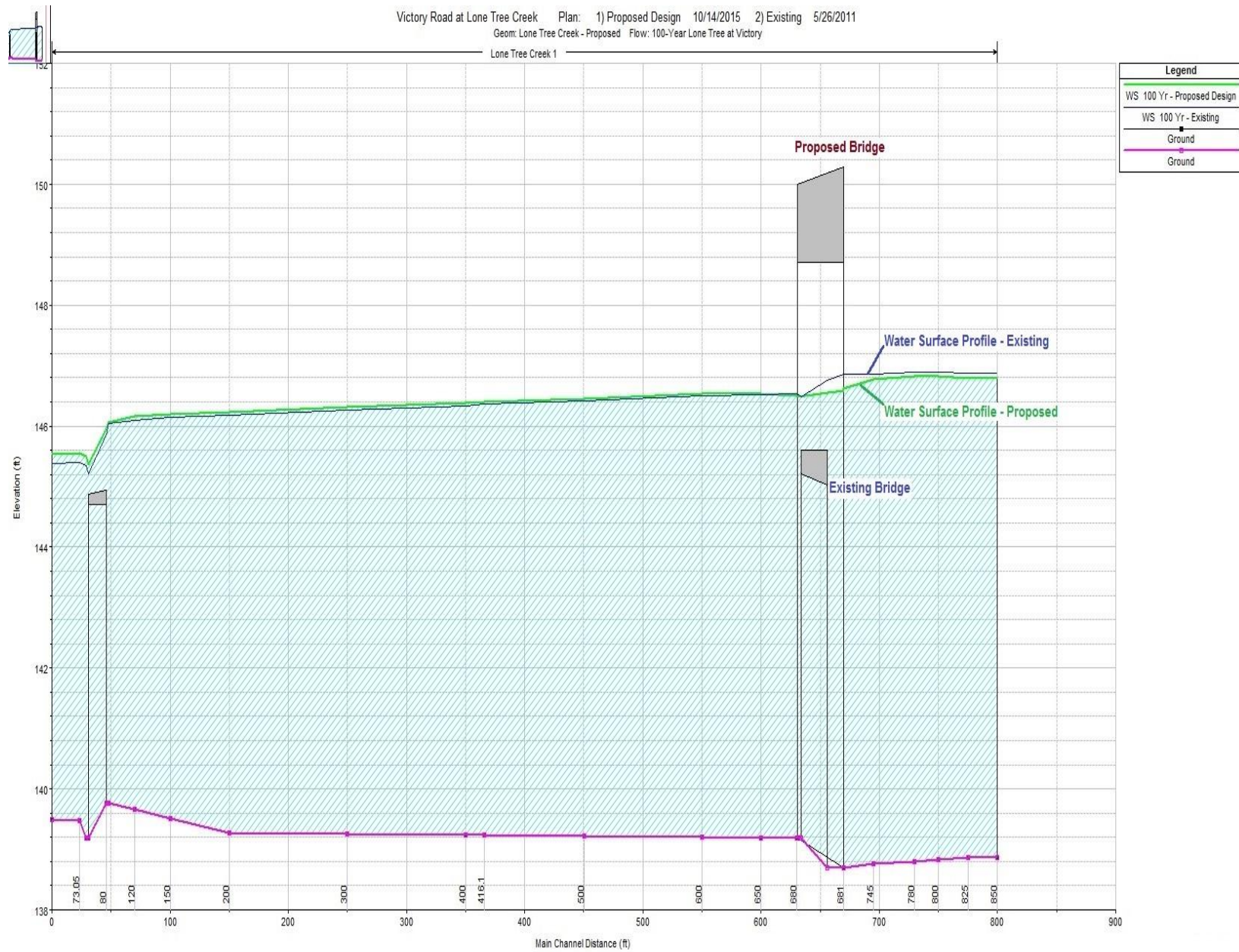
DESIGNED: L. TRAN-CRUZ 06/04/2012
DRAWN: D. WANG 06/04/2012
CHECKED: D. WANG 06/08/2012
RECORD DRAWING: _____

CONTRACT NO. _____

SAN JOAQUIN COUNTY
DEPARTMENT OF PUBLIC WORKS
VICTORY ROAD BRIDGE REPLACEMENT PROJECT
LOG OF TEST BORINGS

Victory Road Bridge Replacement Project

SHEET NO. _____
OF _____



Attachment D

Profile Output Table - Standard Table 1													
HEC-RAS River: Lone Tree Creek Reach: 1 Profile: 100 Yr													(Reload Data)
Reach	River Sta	Profile	Plan	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
1	850	100 Yr	Proposed Design	752.00	138.86	146.81	143.32	146.99	0.001702	3.48	224.44	68.00	0.27
1	850	100 Yr	Existing	752.00	138.86	146.88	143.32	147.05	0.001627	3.43	228.05	68.22	0.26
1	825	100 Yr	Proposed Design	752.00	138.86	146.80	143.31	146.94	0.001383	3.10	264.38	101.76	0.24
1	825	100 Yr	Existing	752.00	138.86	146.87	143.31	147.00	0.001306	3.04	270.30	102.30	0.24
1	800	100 Yr	Proposed Design	752.00	138.83	146.82	143.38	146.89	0.000752	2.26	364.01	121.11	0.18
1	800	100 Yr	Existing	752.00	138.83	146.89	143.38	146.96	0.000708	2.21	371.73	121.56	0.18
1	780	100 Yr	Proposed Design	752.00	138.80	146.82	143.51	146.87	0.000616	1.93	418.21	133.97	0.16
1	780	100 Yr	Existing	752.00	138.80	146.89	143.51	146.94	0.000577	1.89	427.20	134.23	0.16
1	745	100 Yr	Proposed Design	752.00	138.77	146.78	144.77	146.84	0.000962	2.37	376.10	165.61	0.19
1	745	100 Yr	Existing	752.00	138.77	146.85	144.77	146.92	0.000876	2.28	387.60	165.89	0.18
1	720	100 Yr	Proposed Design	752.00	138.70	146.63	143.19	146.80	0.001440	3.39	221.71	340.27	0.26
1	720	100 Yr	Existing	752.00	138.70	146.86	143.13	146.89	0.000435	1.86	598.18	340.27	0.14
1	681		Bridge										
1	680	100 Yr	Proposed Design	752.00	139.18	146.50	143.40	146.70	0.001690	3.59	209.30	306.96	0.28
1	680	100 Yr	Existing	752.00	139.18	146.53		146.60	0.001021	2.57	417.90	306.96	0.20
1	650	100 Yr	Proposed Design	752.00	139.19	146.54	144.10	146.59	0.000677	2.03	449.37	254.73	0.17
1	650	100 Yr	Existing	752.00	139.19	146.51	144.10	146.57	0.000708	2.06	441.67	254.73	0.17
1	600	100 Yr	Proposed Design	752.00	139.20	146.53		146.56	0.000353	1.48	579.29	347.79	0.12
1	600	100 Yr	Existing	752.00	139.20	146.50		146.53	0.000368	1.50	568.62	345.75	0.12
1	500	100 Yr	Proposed Design	752.00	139.22	146.45		146.51	0.000852	2.22	459.36	441.43	0.18
1	500	100 Yr	Existing	752.00	139.22	146.42		146.48	0.000909	2.28	447.20	440.29	0.19
1	416.1	100 Yr	Proposed Design	752.00	139.24	146.40		146.45	0.000582	2.05	521.97	440.24	0.16
1	416.1	100 Yr	Existing	752.00	139.24	146.36		146.41	0.000620	2.10	510.10	439.71	0.17
1	400	100 Yr	Proposed Design	752.00	139.24	146.38		146.43	0.000859	2.35	458.49	422.96	0.19
1	400	100 Yr	Existing	752.00	139.24	146.33		146.40	0.000923	2.42	445.78	422.30	0.20
1	300	100 Yr	Proposed Design	752.00	139.26	146.31		146.35	0.000682	2.15	519.88	458.76	0.17
1	300	100 Yr	Existing	752.00	139.26	146.26		146.31	0.000745	2.23	502.73	458.21	0.18
1	200	100 Yr	Proposed Design	752.00	139.28	146.24		146.28	0.000711	1.97	488.01	367.11	0.17
1	200	100 Yr	Existing	752.00	139.28	146.18		146.23	0.000774	2.04	471.61	365.24	0.18
1	150	100 Yr	Proposed Design	752.00	139.51	146.20		146.24	0.001240	1.74	482.47	331.61	0.14
1	150	100 Yr	Existing	752.00	139.51	146.14		146.18	0.001356	1.80	467.10	329.20	0.15
1	120	100 Yr	Proposed Design	752.00	139.66	146.16		146.20	0.001097	1.69	490.38	300.77	0.14
1	120	100 Yr	Existing	752.00	139.66	146.10		146.14	0.001190	1.74	475.77	297.95	0.14
1	98	100 Yr	Proposed Design	752.00	139.77	146.06	143.29	146.16	0.003447	2.81	324.19	253.60	0.23
1	98	100 Yr	Existing	752.00	139.77	146.04	143.46	146.11	0.002020	2.24	390.02	251.16	0.18