

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	901	1012

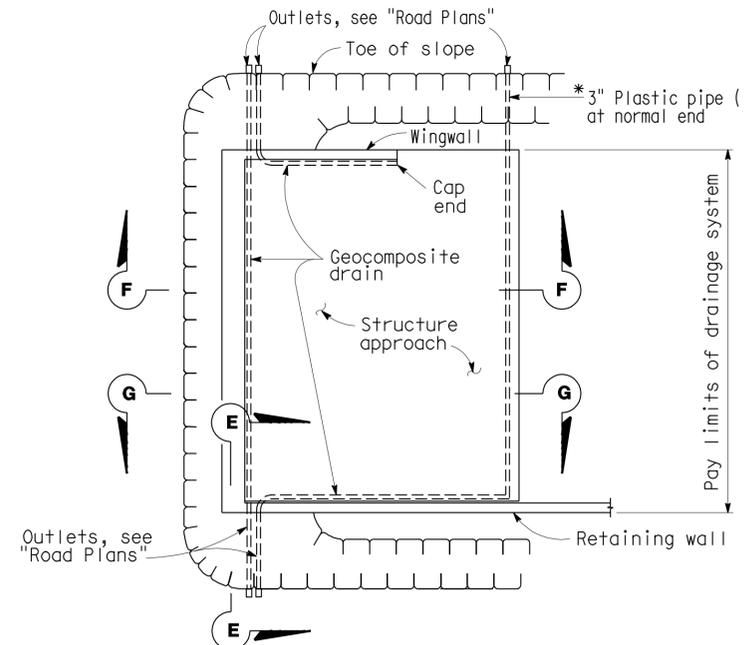
  

<i>Eric Watson</i> 3/29/10	
REGISTERED ENGINEER - CIVIL	Eric Watson
	No. 64273
	Exp. 6-30-11
	CIVIL
STATE OF CALIFORNIA	

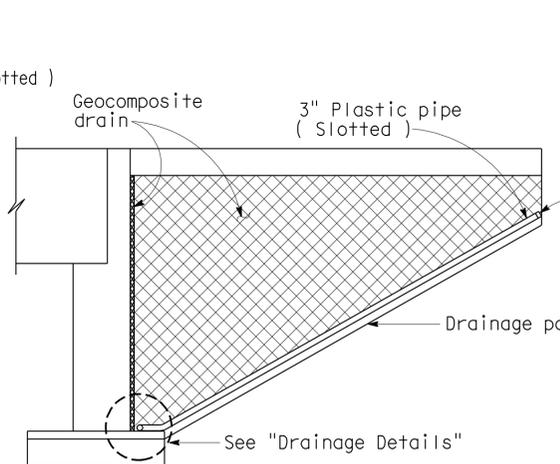
9-7-10
PLANS APPROVAL DATE

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.

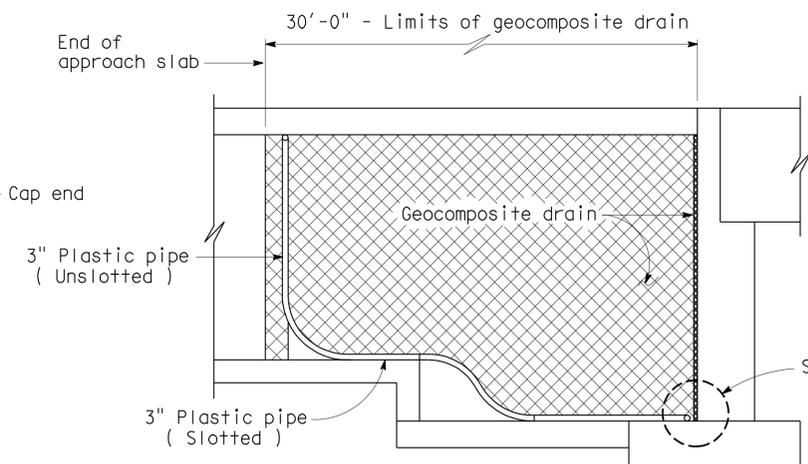


**TYPICAL PLAN**  
1" = 10'

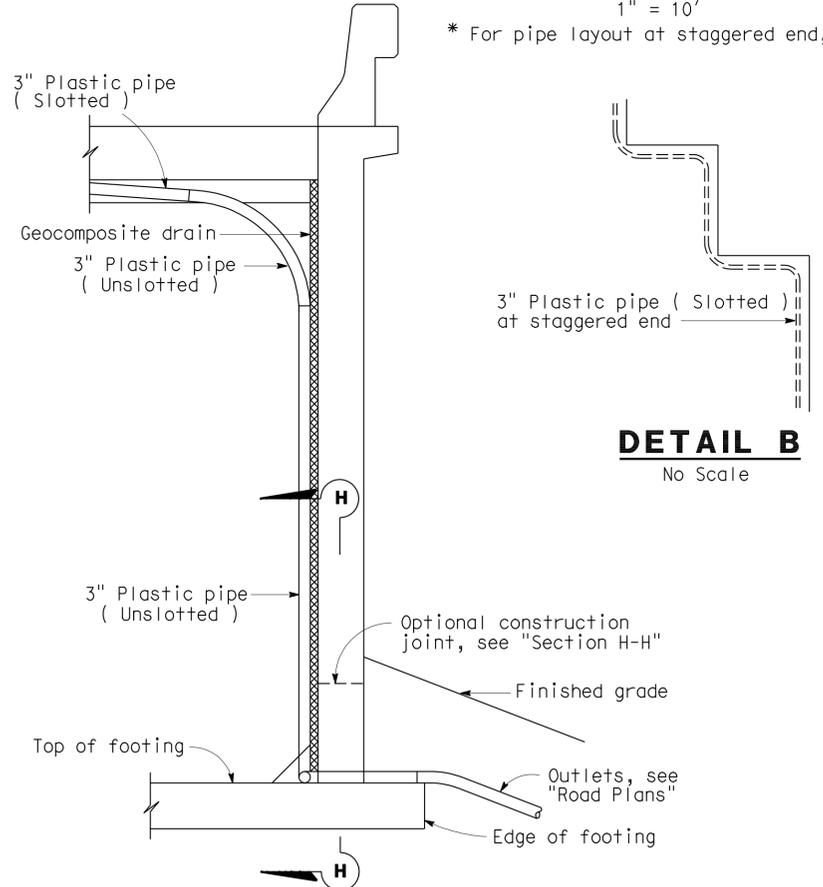
\* For pipe layout at staggered end, see "Detail B."



**CANTILEVER WINGWALL SECTION F-F**  
1/4" = 1'-0"

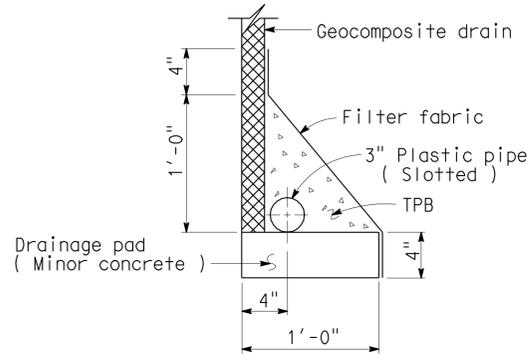


**RETAINING WALL WINGWALL SECTION G-G**  
1/4" = 1'-0"

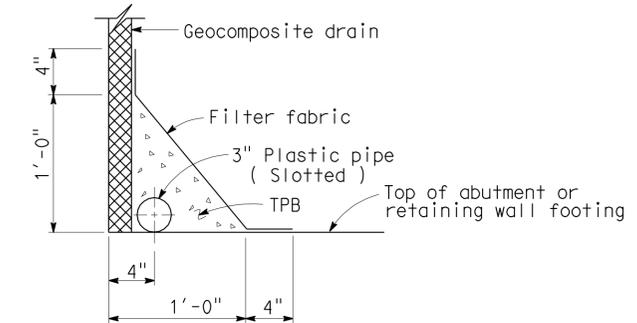


**SECTION E-E**  
1/2" = 1'-0"

Note: Bends and junctions in 3" plastic pipe are 30" radius min.

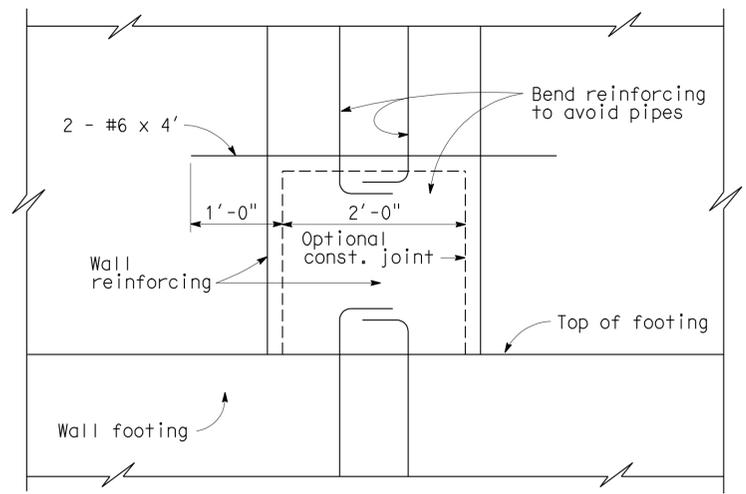


**WITHOUT FOOTING**



**WITH FOOTING**

**DRAINAGE DETAILS**  
1 1/2" = 1'-0"



**SECTION H-H**  
1" = 1'-0"

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

STANDARD DRAWING			
FILE NO. <b>XS 22-17</b>	DESIGN BY <b>M. TRAFFALIS</b>	CHECKED <b>E. THORKILDSEN</b>	APPROVAL-RECOMMENDED BY <i>Richard D. Ford</i>
DESIGN DATE <b>8 / 92</b>	DETAILS BY <b>R. YEE</b>	CHECKED <b>E. THORKILDSEN</b>	DESIGN SUPERVISOR
	SUBMITTED BY <b>M. HA</b>		

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

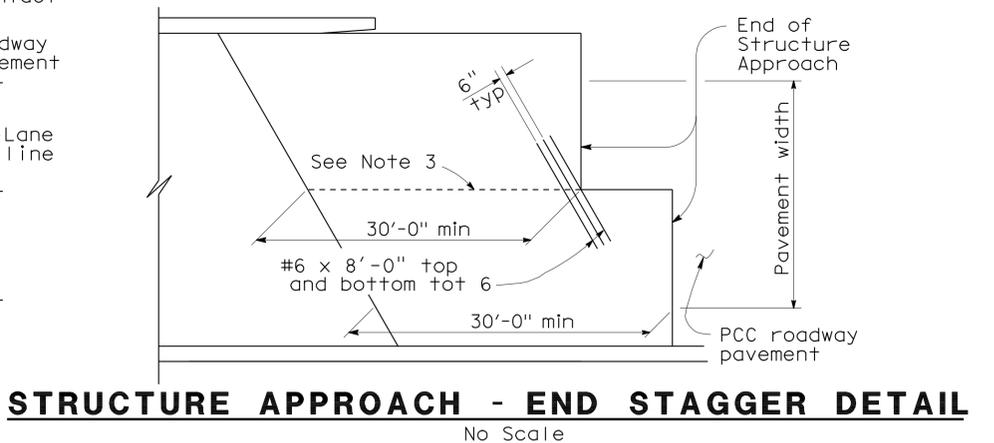
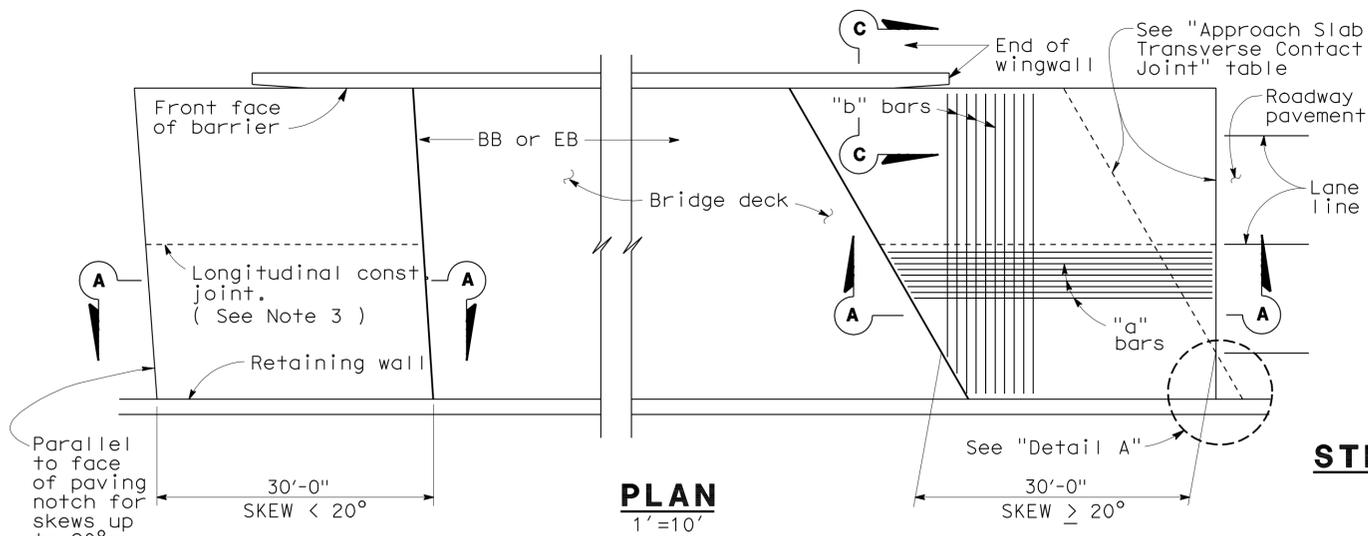
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO. 24-0193L	<b>DEL PASO PARK OVERHEAD (WIDEN)</b>
POST MILE 9.0	
<b>STRUCTURE APPROACH DRAINAGE DETAILS</b>	

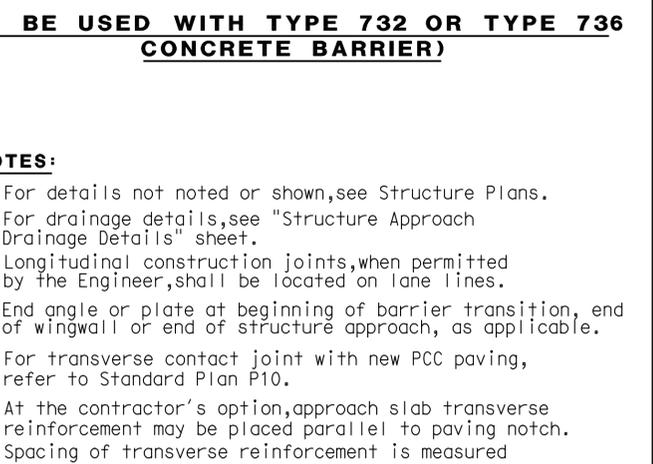
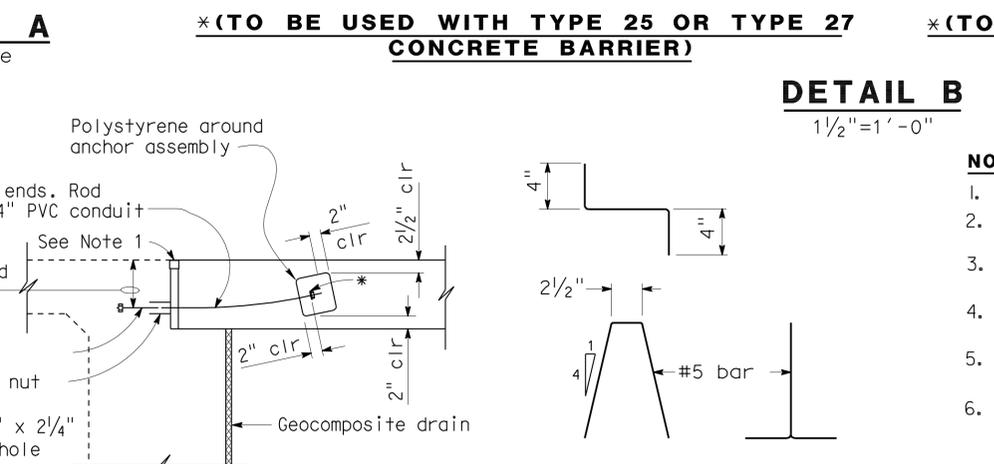
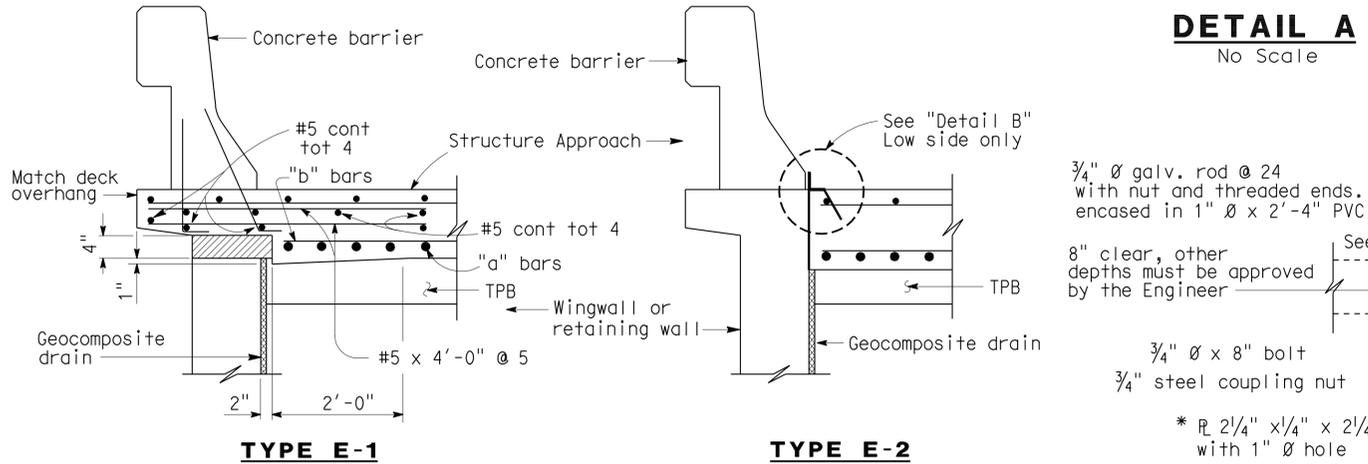
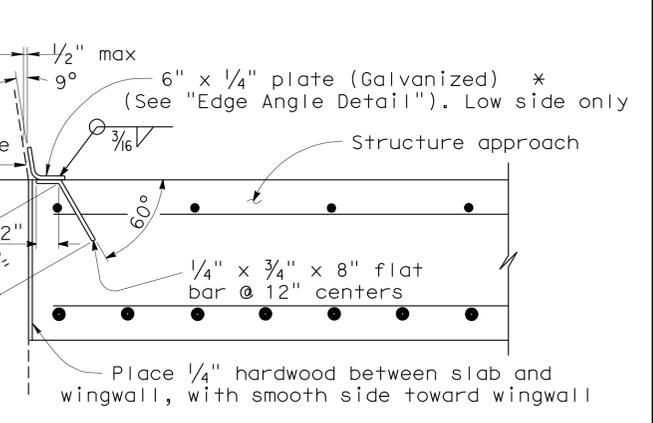
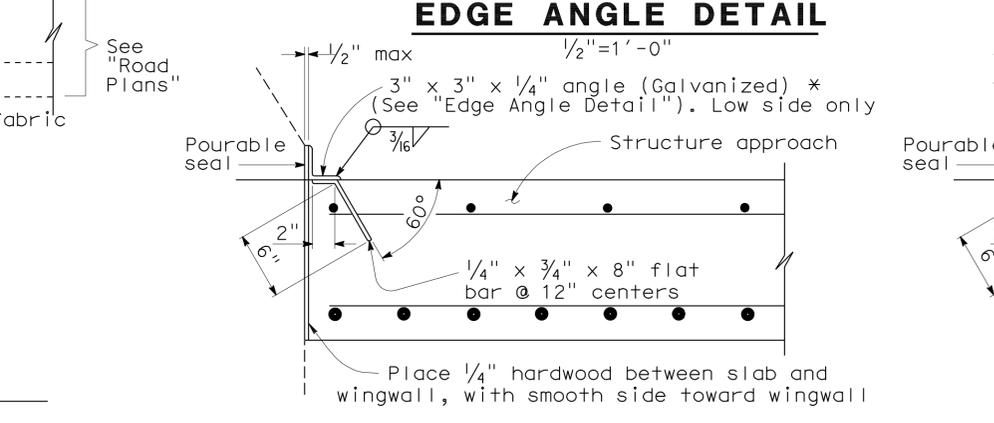
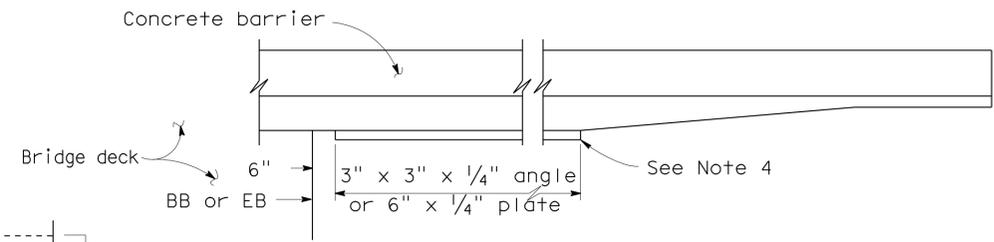
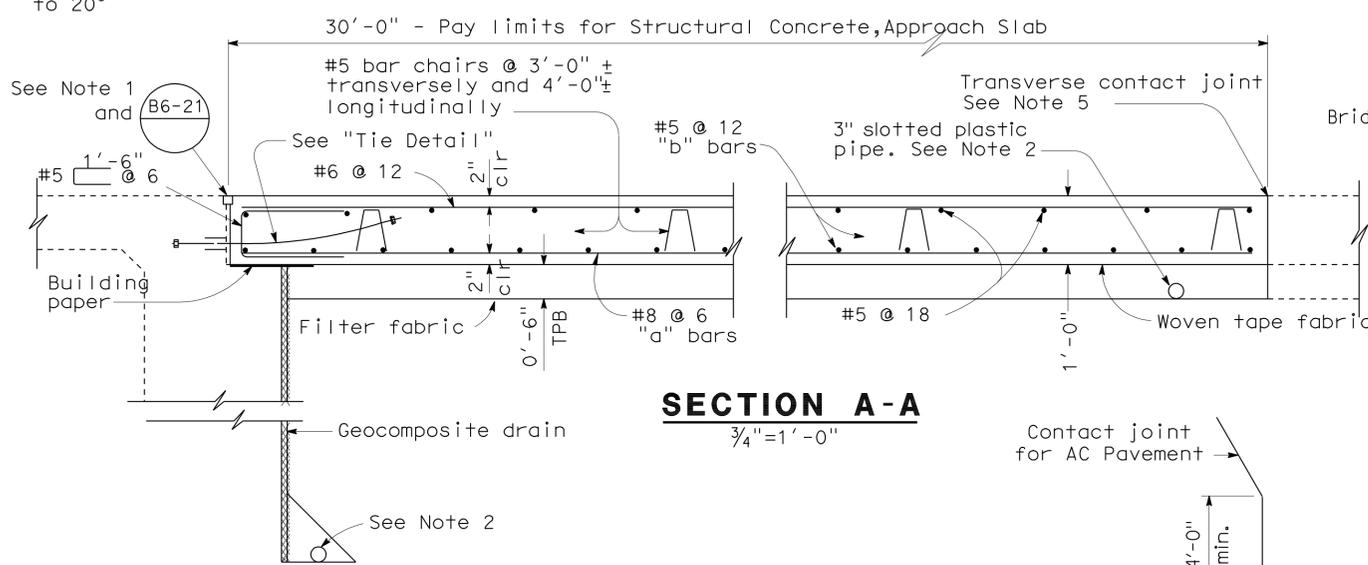
DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol,Sac	80	R10.9/R11.7 MO.0/M10.4	902	1012

Eric Watson 3/29/10  
REGISTERED ENGINEER - CIVIL  
No. 64273  
Exp. 6-30-11  
CIVIL  
STATE OF CALIFORNIA

9-7-10  
PLANS APPROVAL DATE  
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APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line



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

(Type E-1 to be used, unless otherwise shown on plans)

- NOTES:**
- For details not noted or shown, see Structure Plans.
  - For drainage details, see "Structure Approach Drainage Details" sheet.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach, as applicable.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along @ roadway.
- Polystyrene to be removed.

STANDARD DRAWING			
RELEASE DATE 3/14/05	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	RELEASED BY
FILE NO. xs3-180e	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	
	SUBMITTED BY M. HA	DRAWING DATE 4/98	OFFICE CHIEF

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.  
24-0193L  
MILE POST  
9.0

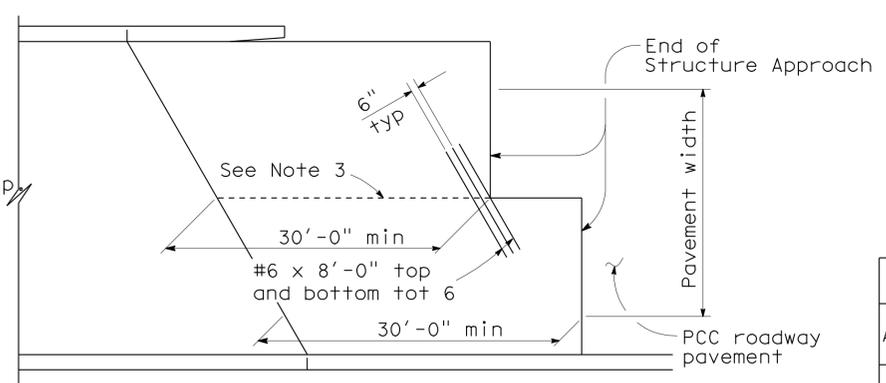
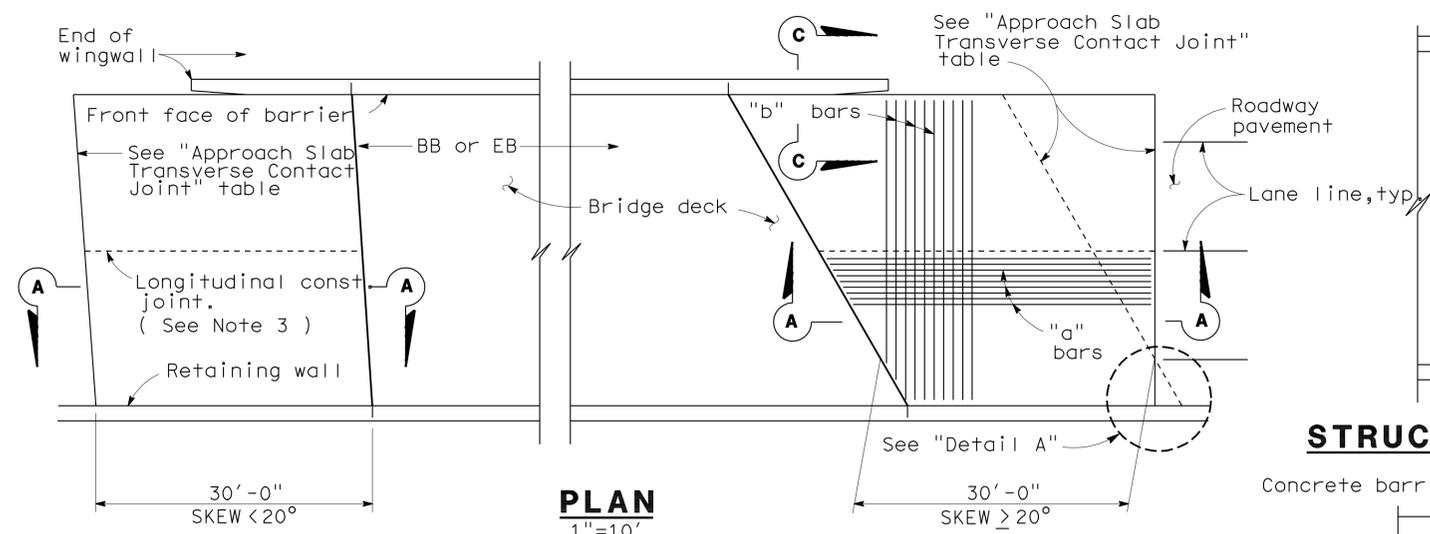
DEL PASO PARK OVERHEAD (WIDEN)  
STRUCTURE APPROACH TYPE N(30D)

CU 03  
EA 379701

REVISION DATES (PRELIMINARY STAGE ONLY)

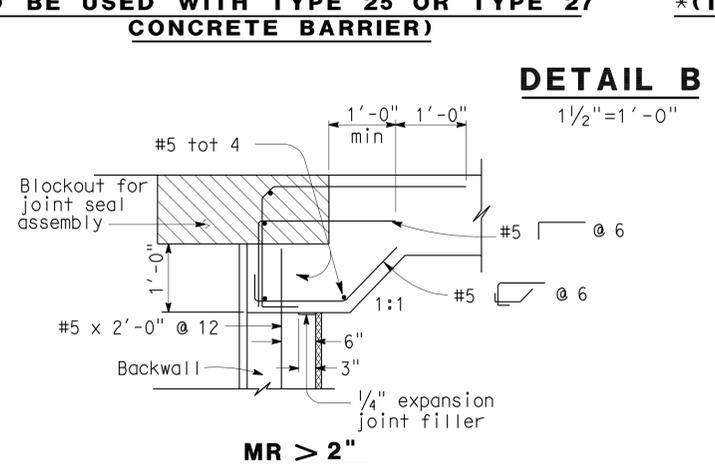
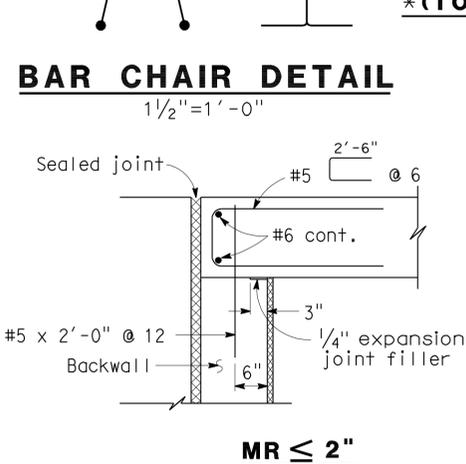
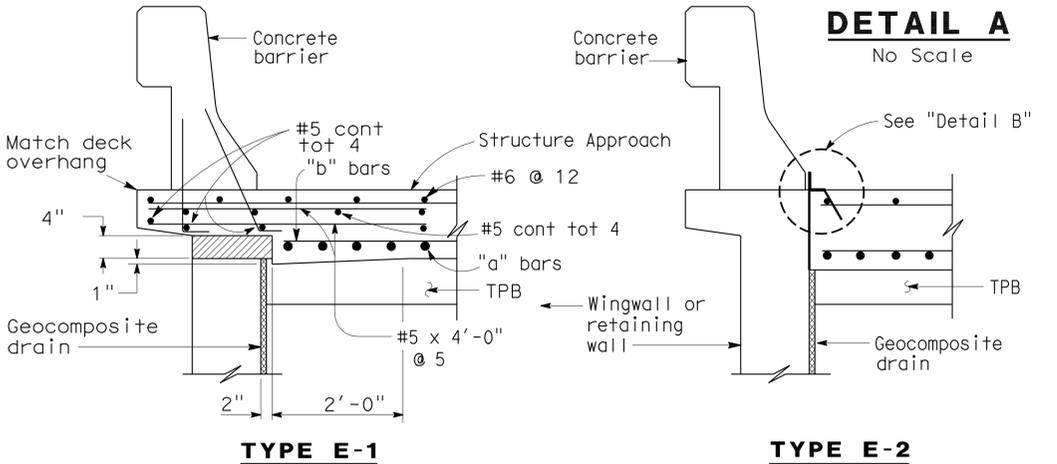
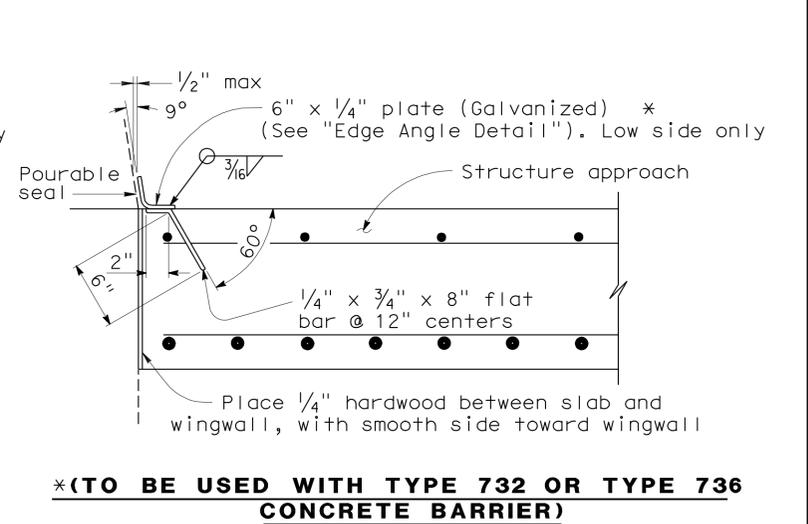
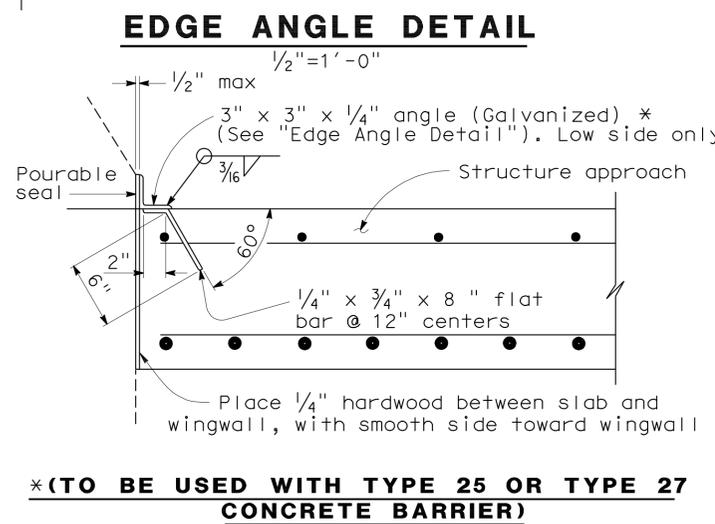
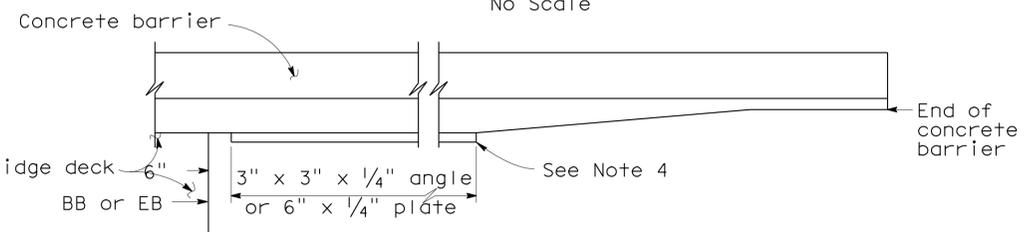
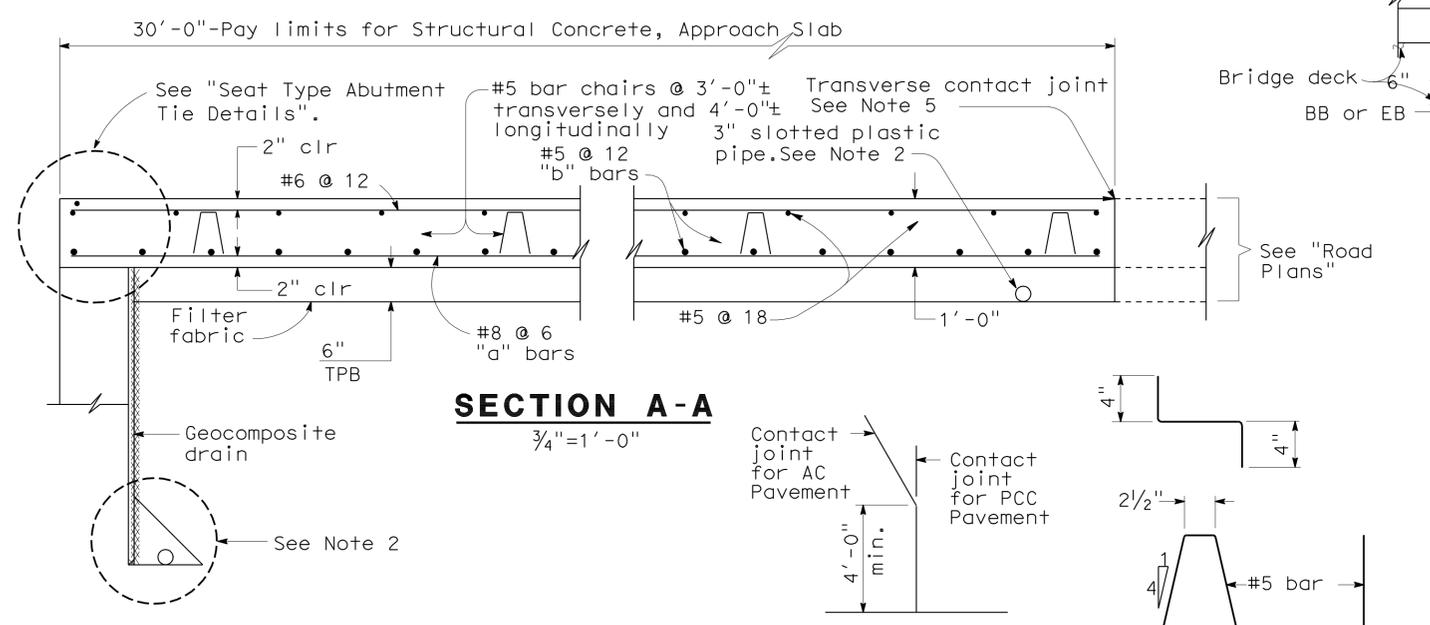
04/29/08	12/13/08	04/22/09			
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SHEET 26 OF 54



APPROACH SLAB TRANSVERSE CONTACT JOINT

APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart.
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line.



**SEAT TYPE ABUTMENT TIE DETAILS (SEE NOTE 1)**  
3/4"=1'-0"

- NOTES:**
- For details not shown, see Structure Plans. For MR <= 2, adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - For drainage details, see "Structure Approach Drainage Details" sheet.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along @ roadway.
- Remove all polystyrene.

NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.  
(Type E-1 to be used, unless otherwise shown on plans)

STANDARD DRAWING

RELEASE DATE	DESIGN BY	CHECKED	RELEASED BY
3/14/05	M. TRAFFALIS	E. THORKILDSEN	
FILE NO.	DETAILS BY	CHECKED	
xs3-120e	R. YEE	E. THORKILDSEN	
	SUBMITTED BY	DRAWING DATE	OFFICE CHIEF
	M. HA	4/98	

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO. 24-0193L  
MILE POST 9.0

DEL PASO PARK OVERHEAD (WIDEN)  
STRUCTURE APPROACH TYPE N(30S)

CU03 EA3797U1

REVISION DATES (PRELIMINARY STAGE ONLY)

07/29/08	12/13/08	04/22/09			
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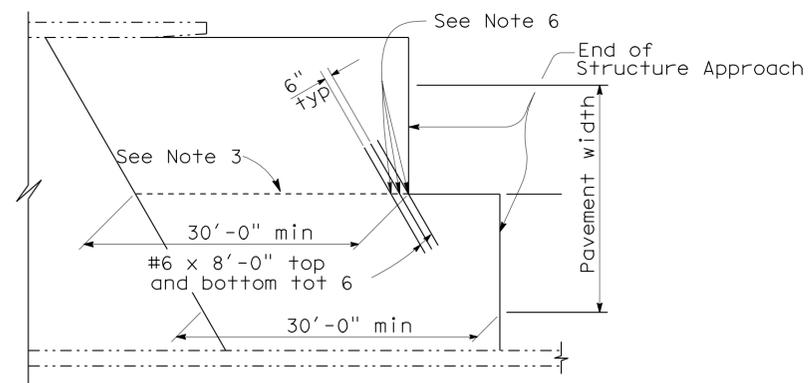
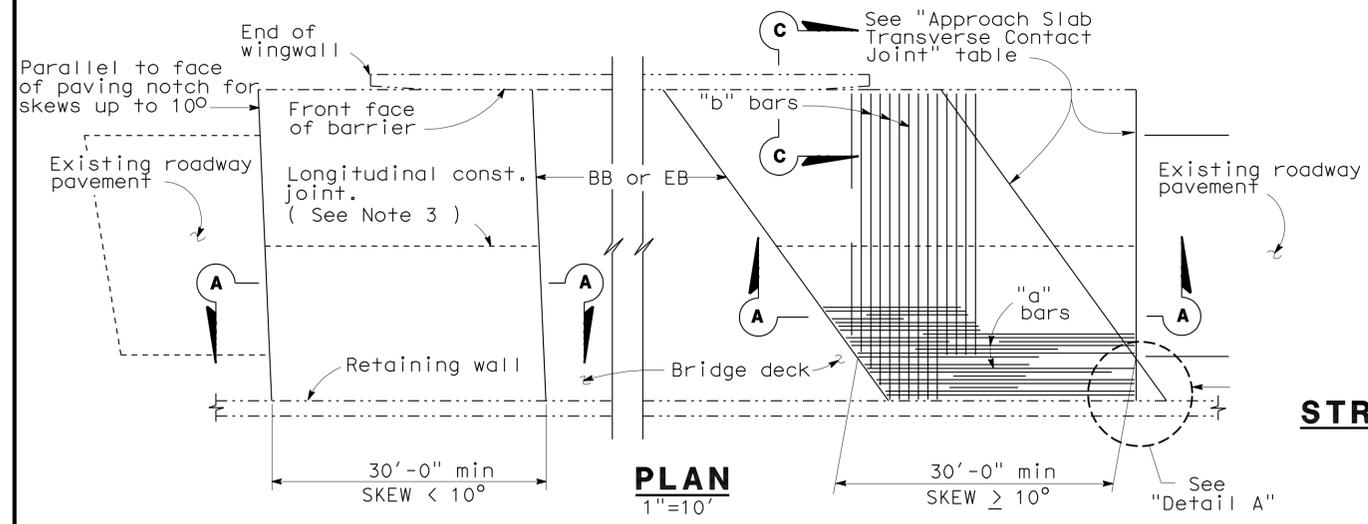
SHEET 27 OF 54

DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Vol, Sac	80	R10.9/R11.7 MO.0/M10.4	904	1012

Eric Watson 3/29/10  
REGISTERED ENGINEER - CIVIL

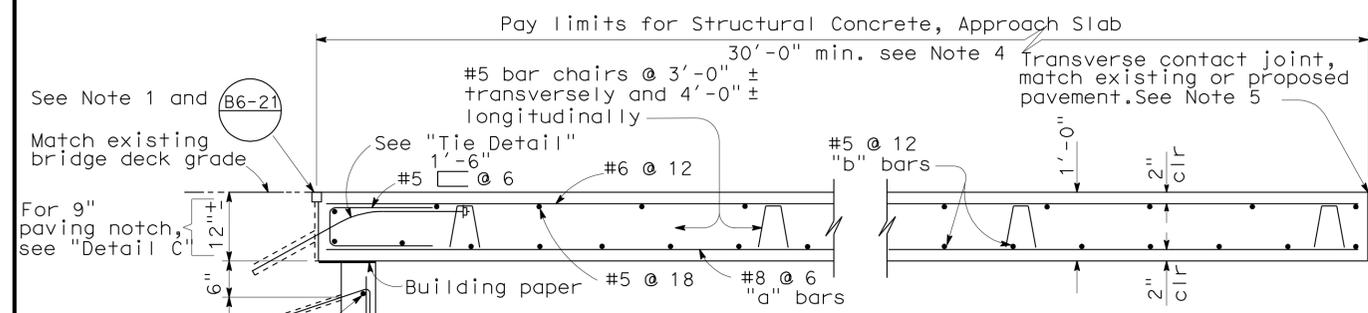
9-7-10  
PLANS APPROVAL DATE

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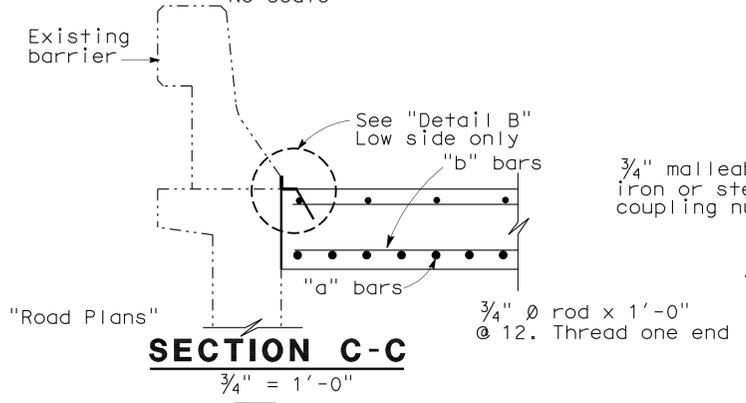


**STRUCTURE APPROACH - END STAGGER DETAIL**  
No Scale

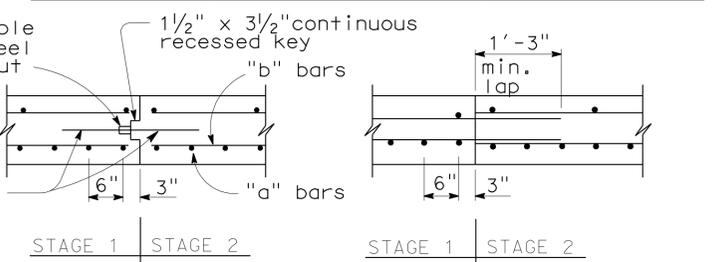
APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line



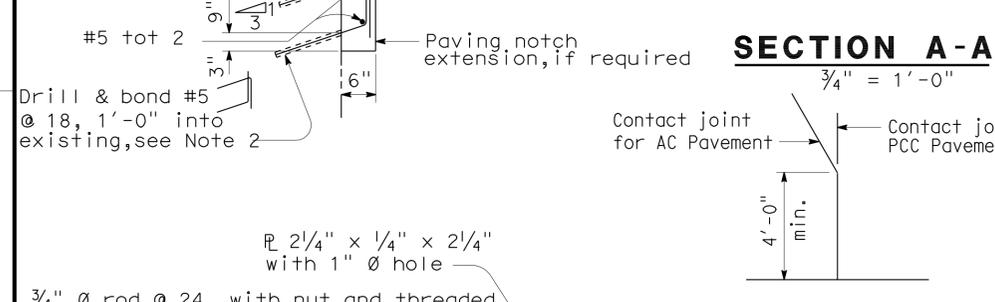
**SECTION A-A**  
3/4" = 1'-0"



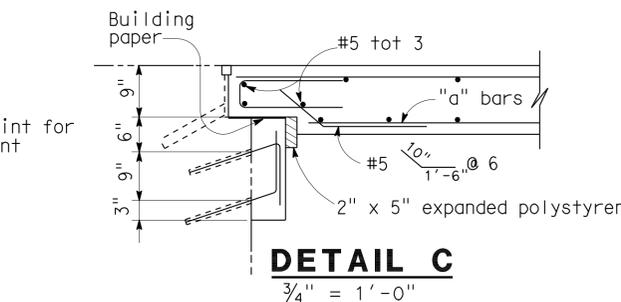
**SECTION C-C**  
3/4" = 1'-0"



**LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES**  
3/4" = 1'-0"



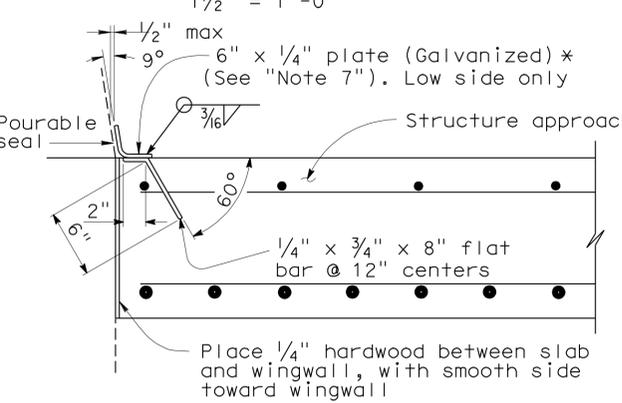
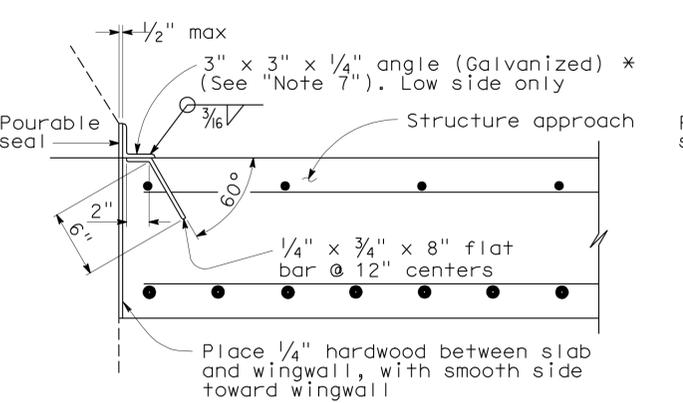
**DETAIL A**  
No Scale



**SECTION C-C**  
3/4" = 1'-0"

**BAR CHAIR DETAIL**  
1/2" = 1'-0"

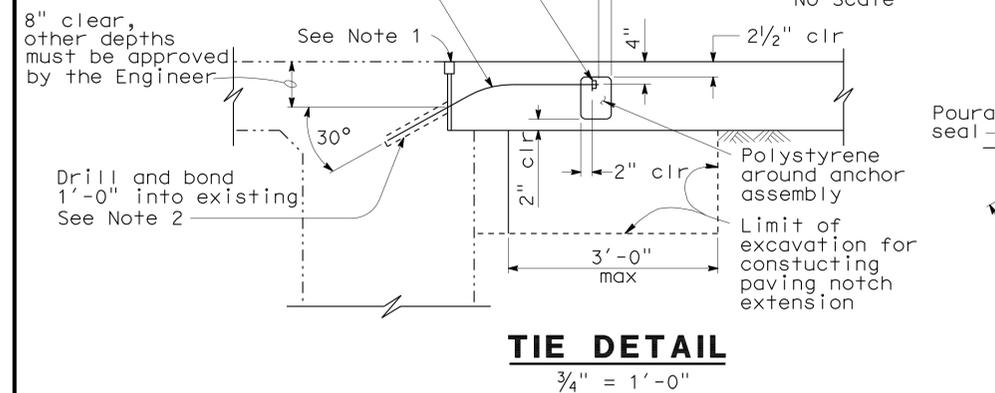
NOTE: For details not shown, see "Section A-A".



\*(TO BE USED WITH TYPE 25 OR TYPE 27 CONCRETE BARRIER)

\*(TO BE USED WITH TYPE 732 OR TYPE 736 CONCRETE BARRIER)

- NOTES:**
- For details not shown or noted, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - Space to avoid existing prestress anchorages and main reinforcement.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - Couplers are required for stage construction.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.



**TIE DETAIL**  
3/4" = 1'-0"

**DETAIL B**  
1/2" = 1'-0"

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

STANDARD DRAWING			
RELEASE DATE 3/14/05	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	RELEASED BY
FILE NO. xs3-140e	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	
	SUBMITTED BY M. HA	DRAWING DATE 8/92	OFFICE CHIEF

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.  
24-0193L

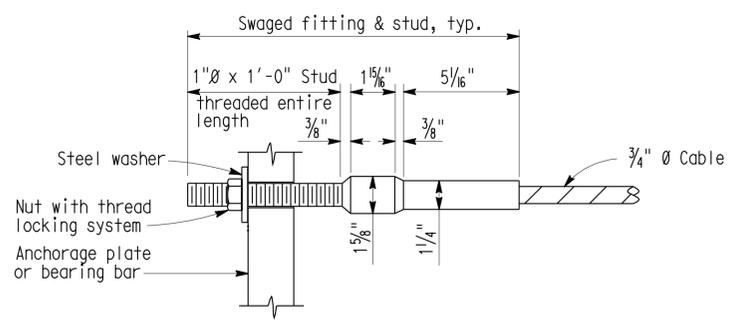
MILE POST  
9.0

DEL PASO PARK OVERHEAD (WIDEN)  
STRUCTURE APPROACH TYPE R(30D)

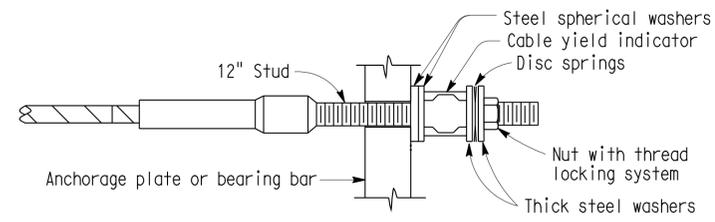
REVISION DATES (PRELIMINARY STAGE ONLY)

07/29/08	12/13/08	04/22/09			
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SHEET 28 OF 54



**FIXED END ( TYPICAL BRACKET ANCHOR )**  
( Single-end adjustment restrainer units )



**ADJUSTMENT END**

**DISC SPRINGS AND WASHERS**

"All dimensions in inches, except as noted"

L *	DISC SPRING					STEEL SPHERICAL WASHER			THICK WASHER		
	ID	OD	t	H	COLOR CODE	ID	OD	Nom thick.	ID	OD	t**
00.0 - 25.0	1.00	2.00	0.065	0.130	WHITE	1.19	2.25	0.50	1.03	2.00	0.25
25.1 - 31.9	1.00	2.00	0.084	0.136	RED	1.19	2.25	0.50	1.03	2.00	0.25
32.0 - 37.9	1.00	2.00	0.097	0.145	BLUE	1.19	2.25	0.50	1.03	2.00	0.25
38.0 - 45.0	1.25	2.50	0.120	0.180	YELLOW	1.31	2.50	0.50	1.16	2.00	0.25

\* For limits of length L (ft), use effective length of cable, from face-to-face outer surfaces of anchorage plate or bearing bar. Refer to Bridge detail sheets for approximate length required.

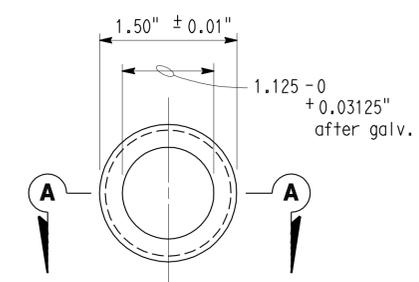
\*\* Minimum value

Note: All OD and ID dimensions for washers and disc springs shall meet the dimensional tolerances for harden steel washers, ASTM F436

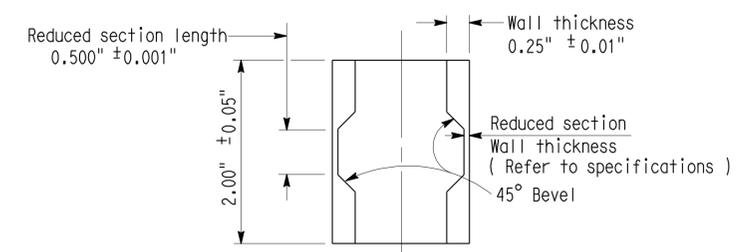
**CABLE END ANCHORAGE DETAILS**

NO SCALE

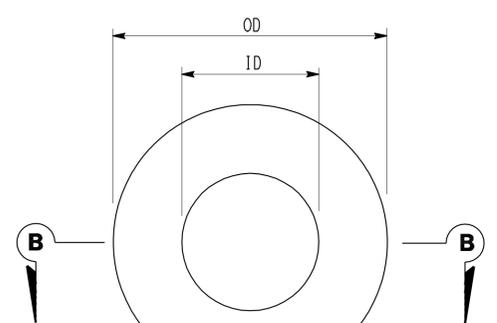
Note: For locations of fixed and adjusted ends, see Structure Plans



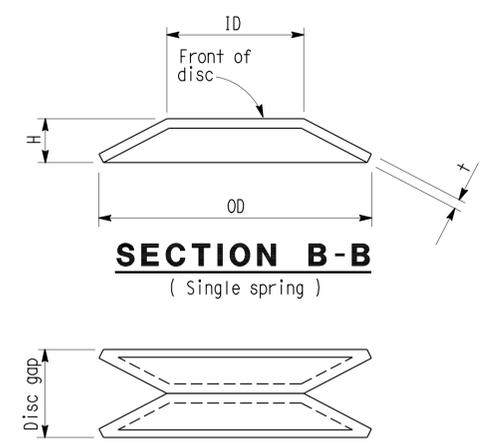
**END VIEW**



**SECTION A-A**



**PLAN**



**SECTION B-B**  
( Single spring )

**AS INSTALLED ON STUD**

**DISC SPRING**

Note: For dimensions not shown, see table

**RESTRAINER UNIT INSTALLATION PROCEDURE**

- 1a. For typical 'girder to opposite girder' or 'bent cap to girder' restrainers with one adjustment end:  
Place nut, washer and Thread Locking System on fixed end stud prior to tightening the cable.  
The adjustment end shall be at the same end of the cable for all restrainers at a specific hinge or bent.  
Install Cable Yield Indicator, spherical washers, disc springs, washers and nut on the adjustment end of restrainers as shown in "Cable End Anchorage Details". Discs shall be installed front to front as shown in "Disc Spring" detail.  
Tighten the nuts on the cable from the Adjustment End of restrainer until the disc springs collapse and there is no disc gap remaining between the discs.

1b. For typical "U" or "V" shaped restrainers units with two adjustment ends:  
Install Cable Yield Indicator, spherical washers, disc springs, washers and nuts on both adjustment ends of restrainer as shown in "Cable End Anchorage Details". Discs shall be installed front to front as shown in "Disc Spring" detail.  
The ends of the cable must be adjusted simultaneously.  
Tighten the nuts on the cable from the adjustment ends of restrainer until the disc springs collapse and there is no disc gap remaining between the discs on either end of the cable.
2. Place thread locking system on adjustment end(s) after tightening the cable but before backing off the nut(s).  
Back off the nut(s) at the adjustable anchorage(s) a distance equal to the maximum additional amount that the hinge is expected to open, relative to existing ambient conditions, as shown on the plans for movement rating.

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

"All dimensions are before galvanizing except as noted"  
**CABLE YIELD INDICATOR**

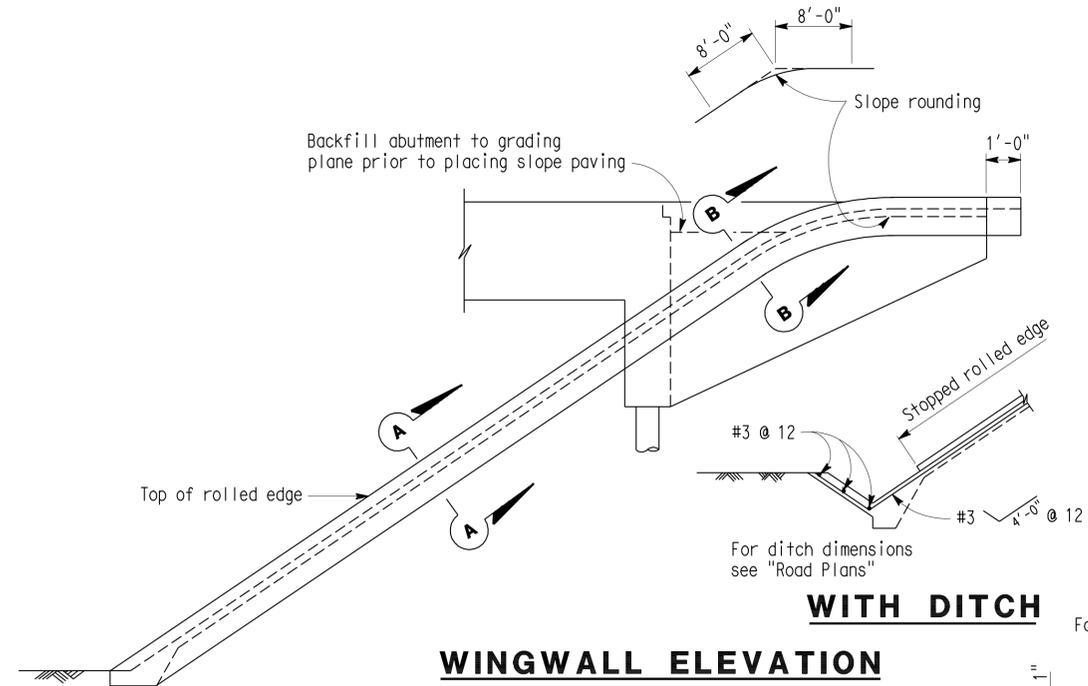
STANDARD DRAWING					
RELEASE DATE	DESIGN	BY	CHECKED	RELEASED BY	
4/20/98		S. SAHS	R.J. ZELINSKI		
FILE NO.	DETAILS	BY	CHECKED		
xs7-710-2		S. SAHS	R.J. ZELINSKI		
	SUBMITTED	BY	DRAWING DATE	OFFICE CHIEF	
		R.J. ZELINSKI	4/98		

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 DESIGN BRANCH 1

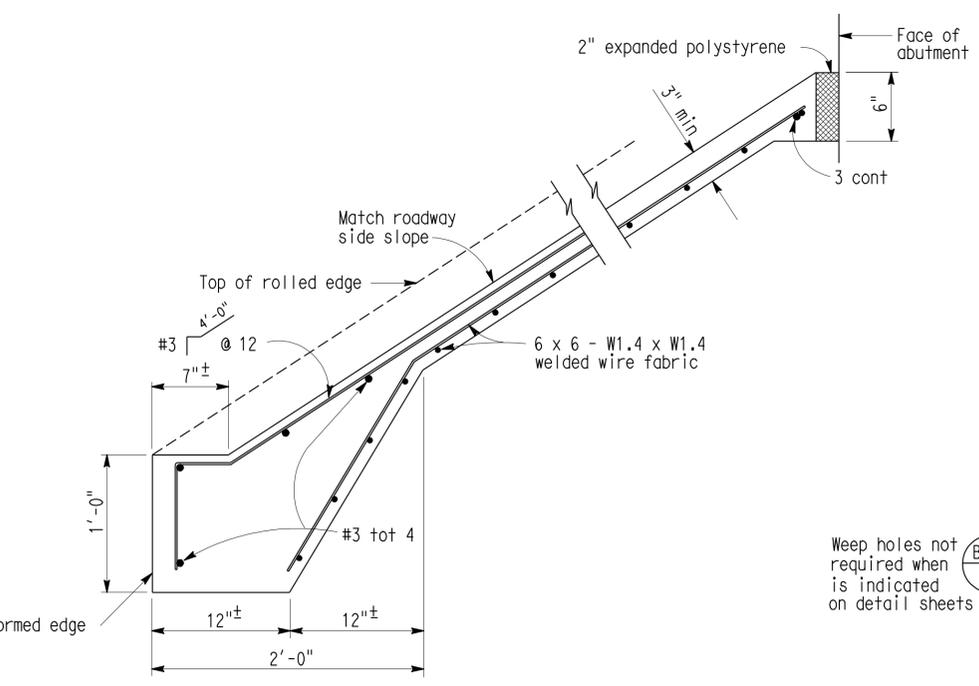
BRIDGE NO. 24-0193L  
 POST MILE 9.0  
 DEL PASO PARK OVERHEAD (WIDEN)  
 RESTRAINER UNIT - MISCELLANEOUS DETAILS

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	906	1012
Eric Watson REGISTERED ENGINEER - CIVIL			3/29/10	REGISTERED PROFESSIONAL ENGINEER Eric Watson No. 64273 Exp. 6/30/11 CIVIL STATE OF CALIFORNIA	
9-7-10					
PLANS APPROVAL DATE					

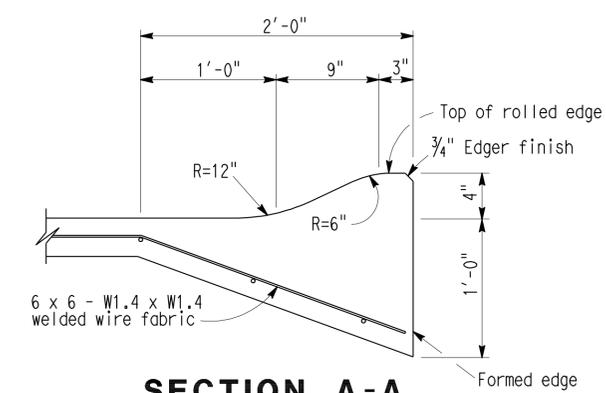
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



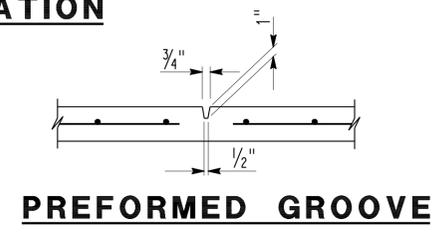
**WINGWALL ELEVATION**



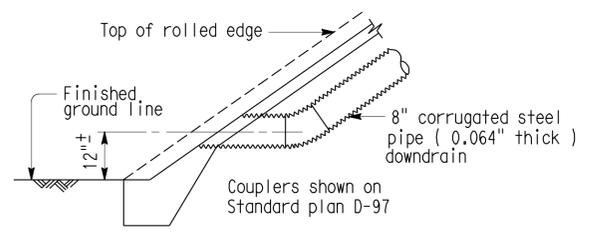
**TYPICAL SECTION - CONCRETE PAVING**



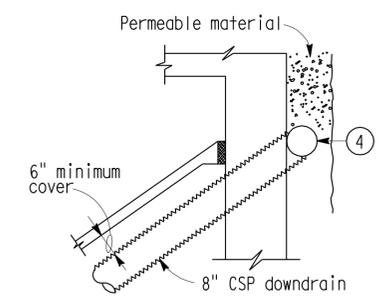
**SECTION A-A**



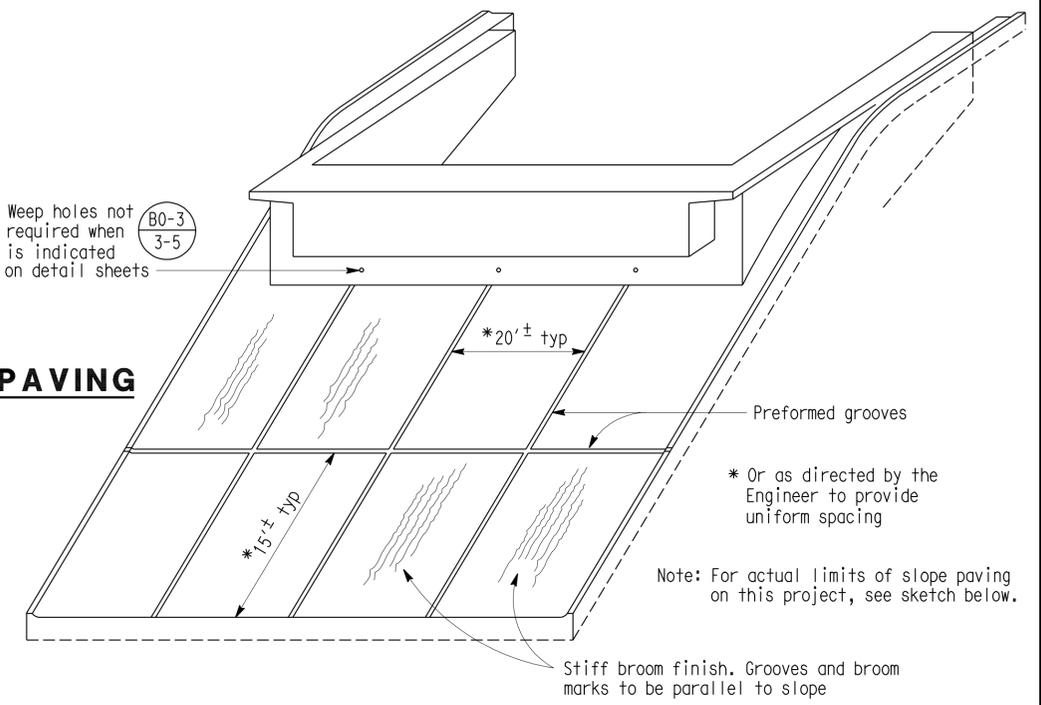
**PREFORMED GROOVE**



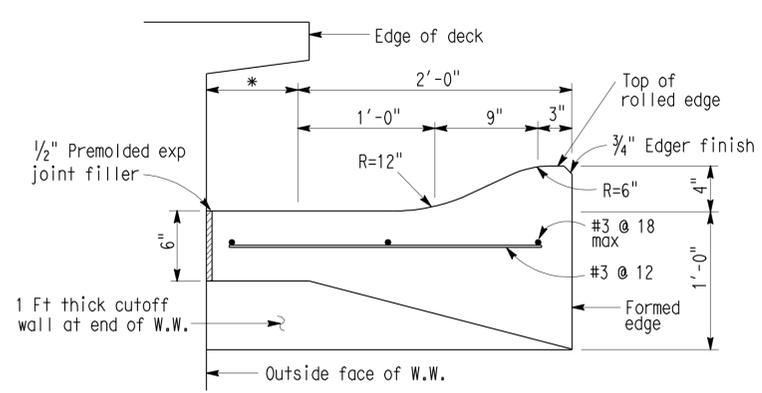
**TYPICAL - NO CURB**



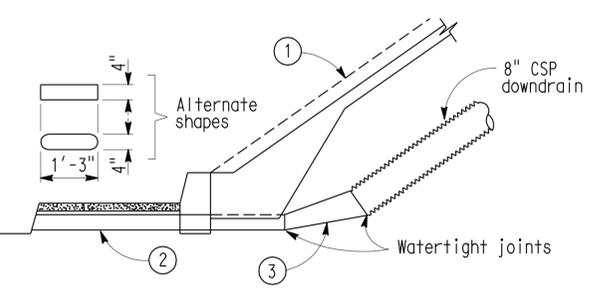
**TYPICAL - DRAIN CONNECTION**



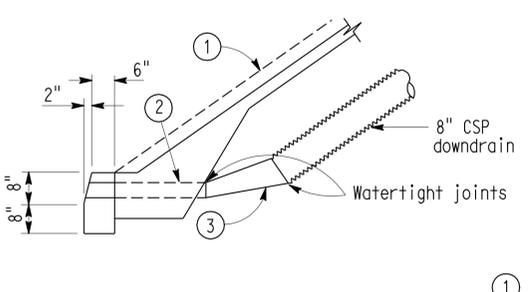
**PICTORIAL VIEW OF TYPICAL INSTALLATION**



**SECTION B-B**



**TYPICAL - WITH SIDEWALK**



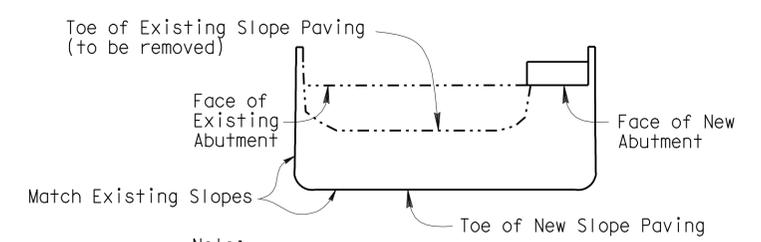
**TYPICAL - WITH CURB**

**DRAINAGE DETAILS**

Note: Drainage details are only applicable when is indicated on detail sheets.



- ① Top of rolled edge
- ② Conduit: 0.064" galv corrugated steel or 0.109" smooth galv steel
- ③ Taper: { 0.064" galv corrugated steel or 0.109" smooth galv steel
- ④ 8" perforated steel pipe (0.064" thick) underdrain behind abutment. Connect to down drain as shown on limits of Slope Paving & Drainage layout.



**PLAN LIMITS OF SLOPE PAVING**

Note: Abut 10 shown, Abut 1 similar. See "FOUNDATION PLANS NO. 1 & NO. 3" for limits.

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

\* This dimension becomes zero when edge of deck is at outside face of W.W.

STANDARD DRAWING				APPROVAL - RECOMMENDED BY	
FILE NO. <b>XS 22-11</b>	DESIGN	BY	CHECKED	DESIGN SUPERVISOR	
DESIGN DATE <b>3/89</b>	DETAILS	BY <b>R. YEE</b>	CHECKED		
		SUBMITTED BY <b>C.W. PURKISS</b>			

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF STRUCTURES STRUCTURE DESIGN <b>1</b>	BRIDGE NO.	24-0193L
		POST MILE	9.0

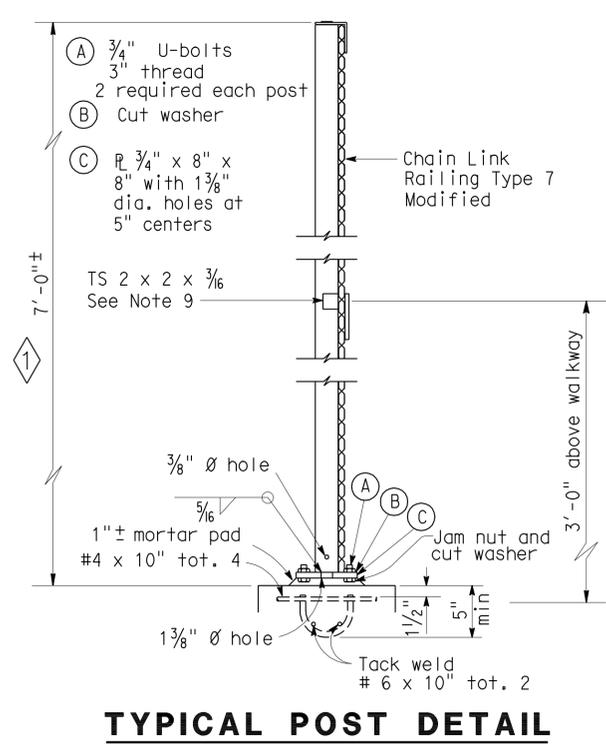
DEL PASO PARK OVERHEAD (WIDEN)	
SLOPE PAVING - FULL SLOPE	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Vol, Sac	80	R10.9/R11.7 MO.0/M10.4	907	1012

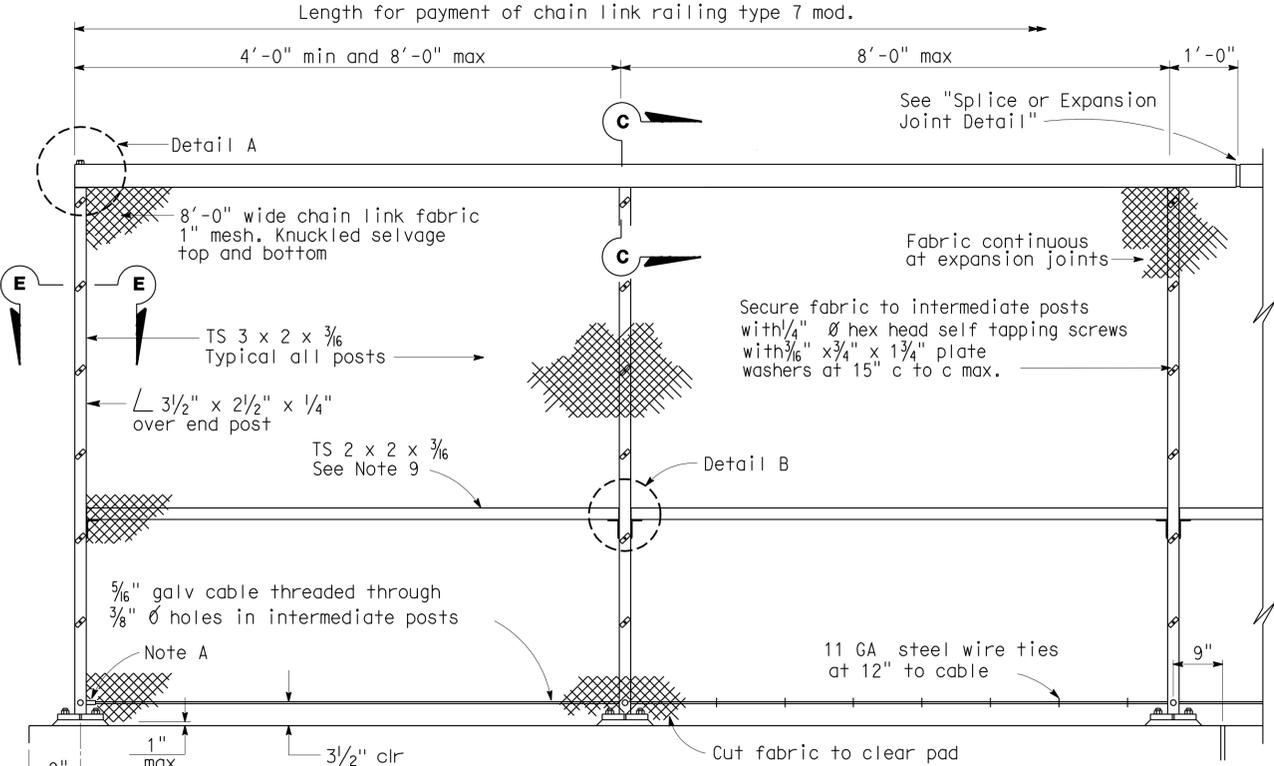
  

Eric Watson 3/29/10	
REGISTERED ENGINEER - CIVIL	
9-7-10	
PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.	

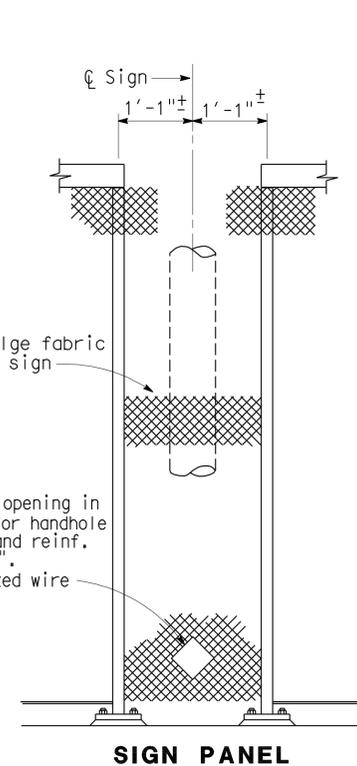
PROFESSIONAL ENGINEER  
 Eric Watson  
 No. 64273  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA



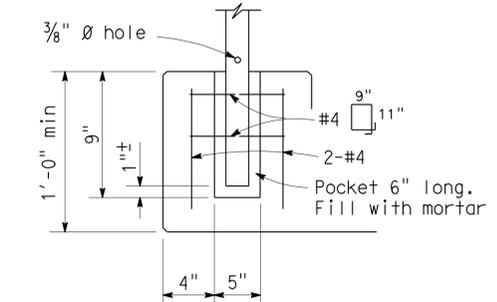
**TYPICAL POST DETAIL**



**ELEVATION**

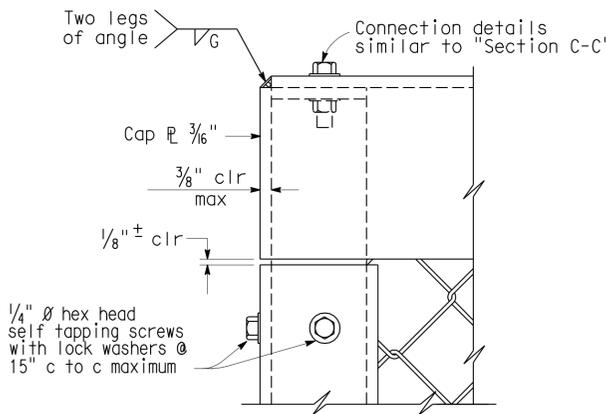


**SIGN PANEL**

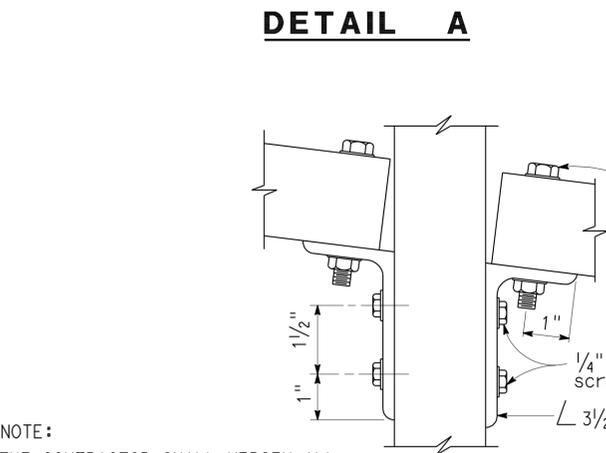


**ALTERNATIVE ANCHORAGE DETAIL**

May be used when thickness of concrete is 1'-0" or more. Not to be used when post contains electrical conduit.



**DETAIL A**



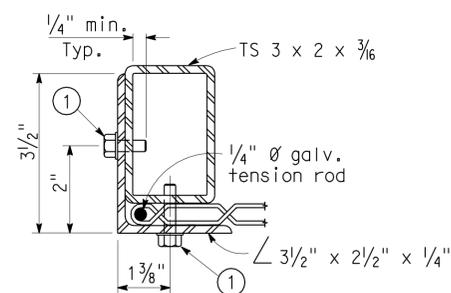
**DETAIL B**

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

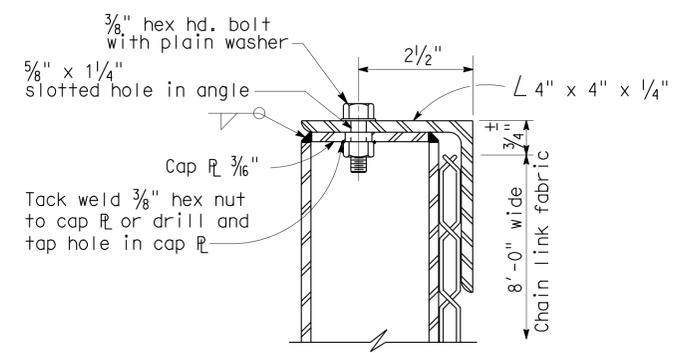
**END POST**

Note A: Anchor 5/16" galvanized cable at end post with 1/2" Ø stud socket assembly or 1/2" Ø welded eyebolt and crimped sleeve clamp. Provide 1/2" min. take-up at each anchorage.

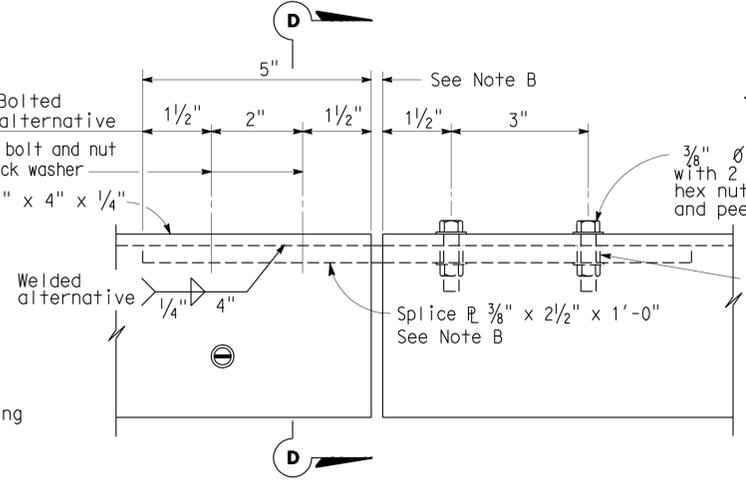
**DECK OR WALL JOINT**



**SECTION E-E**

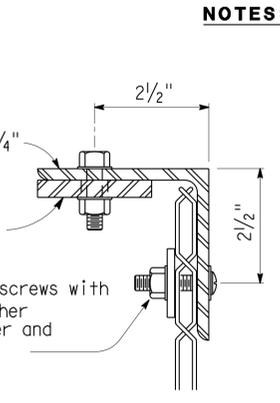


**SECTION C-C**



**SPLICE OR EXPANSION JOINT DETAIL**

Note B: Expansion joint same dimension as expansion joint in deck or wall. Increase slotted hole length and splice L length correspondingly.



**SECTION D-D**

**NOTES:**

- Railing assembly except chain link fabric to be galvanized after fabrication.
- Railing shall conform to horizontal and vertical alignment. Post shall be vertical. Horizontal angle shall be bent to conform to horizontal alignment if radius is 150'-0" or less.
- Horizontal angle shall be continuous over not less than two intermediate posts, except that a shorter length is permitted at expansion joints and other rail discontinuities.
- When railing is placed on curved horizontal alignment with radius of 150'-0" or less, drill 1/2" Ø x 3" deep hole in slab and set in epoxy adhesives 3/8" Ø welded eyebolt for 3/8" cable to limit the midordinate distance between the 3/8" cable and curve to be 1" max.
- Place fabric parallel to slope.
- Alternative details may be submitted by the Contractor for Engineer's approval.
- Provide thimbles at all cable loops.
- Peen all exposed bolts.
- TS 2 x 2 x 3/16" required for curves with radius of 150'-0" or less. Bend to conform to curve.

STANDARD DRAWING		
FILE NO. <b>xs16-360e</b>	APPROVED BY <b>T SATTER</b> RESPONSIBLE TECHNICAL SPECIALIST	RELEASED BY <b>ROBERTO LACALLE</b> RESPONSIBLE OFFICE CHIEF
APPROVAL DATE <b>4-15-08</b>		RELEASE DATE <b>4-15-08</b>

① - Dimension changed

<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b>
--	---

BRIDGE NO. <b>24-0193L</b>	<b>DEL PASO PARK OVERHEAD (WIDEN)</b>
POST MILE <b>9.0</b>	<b>CHAIN LINK RAILING TYPE 7 MODIFIED</b>

Notes:

1. This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).
2. 2" samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 2" and an outside diameter (O.D.) of 2.5".
3. The soil descriptions and classifications, including consistency and relative density descriptors, used by the field personnel for the exploration boreholes shown on these sheets are generally based on the Soil and Rock Logging, Classification, and Presentation Manual, Division of Engineering Services, Geotechnical Services, (June 2007).
4. Soil Colors were determined using Munsell Soil Color Charts (1994, Revised Edition).
5. All Test Borings except DPRB-B9 utilized an Automatic Hammer to advance the sampler using a 140 lb hammer with 30 inch drop. Test Boring DPRB-B9 utilized a Safety Hammer to advance the sampler using a 140 lb hammer with 30 inch drop. The SPT N-values shown on the Log of Test Boring (LOTB) sheets were actual values recorded in the field. The relative/apparent density descriptors shown on the LOTB sheets are based on the actual SPT N-values recorded in the field. Consistency descriptors shown on the LOTB sheets are based on the actual SPT N-values or the pocket penetrometer readings.
6. 1.4" samples were taken using a SPT split-barrel sampler with an inside diameter (I.D.) of 1.4" and an outside diameter (O.D.) of 2".
7. Blowcounts 50/5" means 50 blows per 5" penetration.

**BENCHMARKS**

STATION	OFFSET	N	E	ELEV	DESCRIPTION
687+41.23 "A3" Line Rte I-80	7.65 Rt	1,994,509.93	6,730,686.16	90.67	PT 80-90-10 Fnd Standard CT Brass Disk in Conc.
703+24.28 "A3" Line Rte I-80	2.45 Rt	1,994,917.09	6,732,209.35	76.15	PT LRT-1 Fnd Standard CT Brass Disk in Conc.

**SURVEY CONTROL**

1. Coordinates bearing and distances are based on the California coordinate system of Nad 1983 HPGN, zone 6. (EPOCH 1991.35). Elevations are based on NGVD 29.

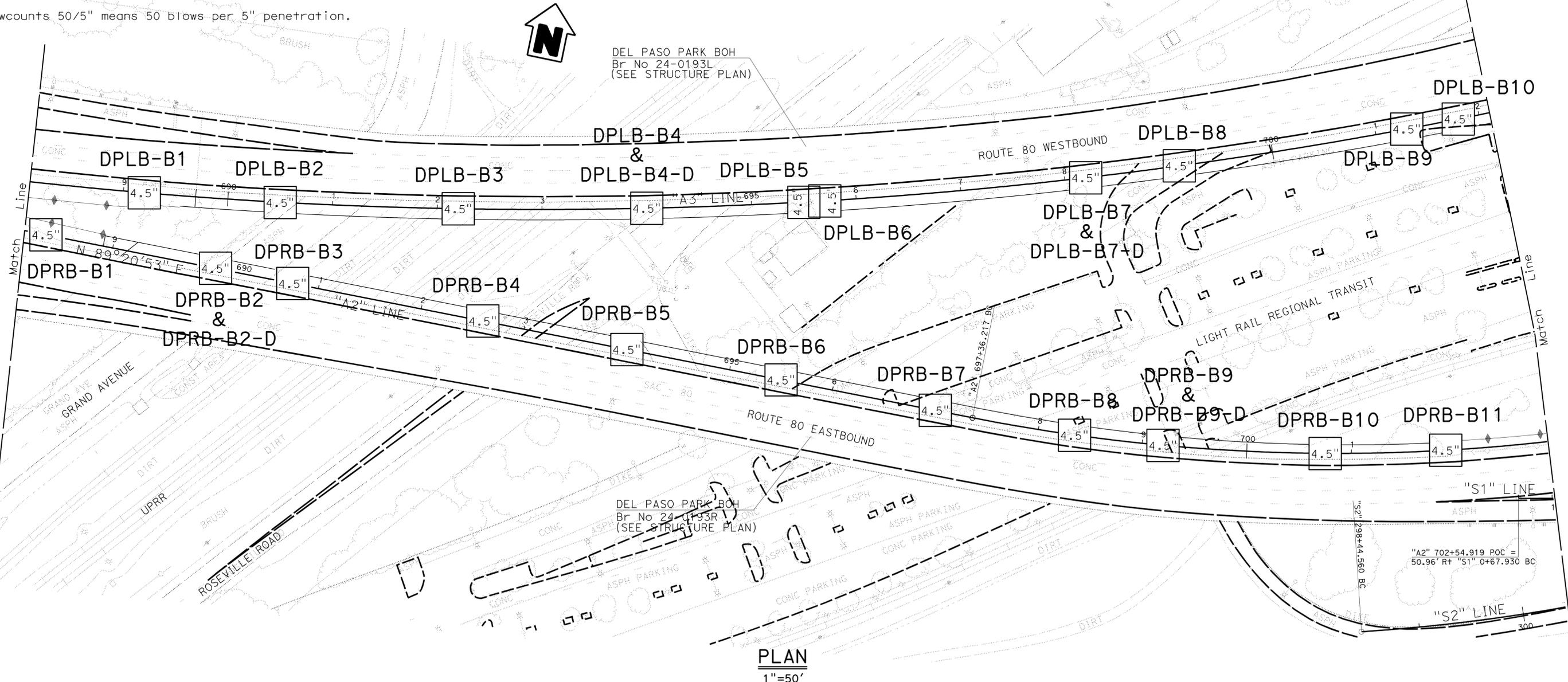
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	908	1012

1-12-09  
REGISTERED CIVIL ENGINEER

9-7-10  
PLANS APPROVAL DATE

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KLEINFELDER INC.  
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SACRAMENTO, CA 95826



NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

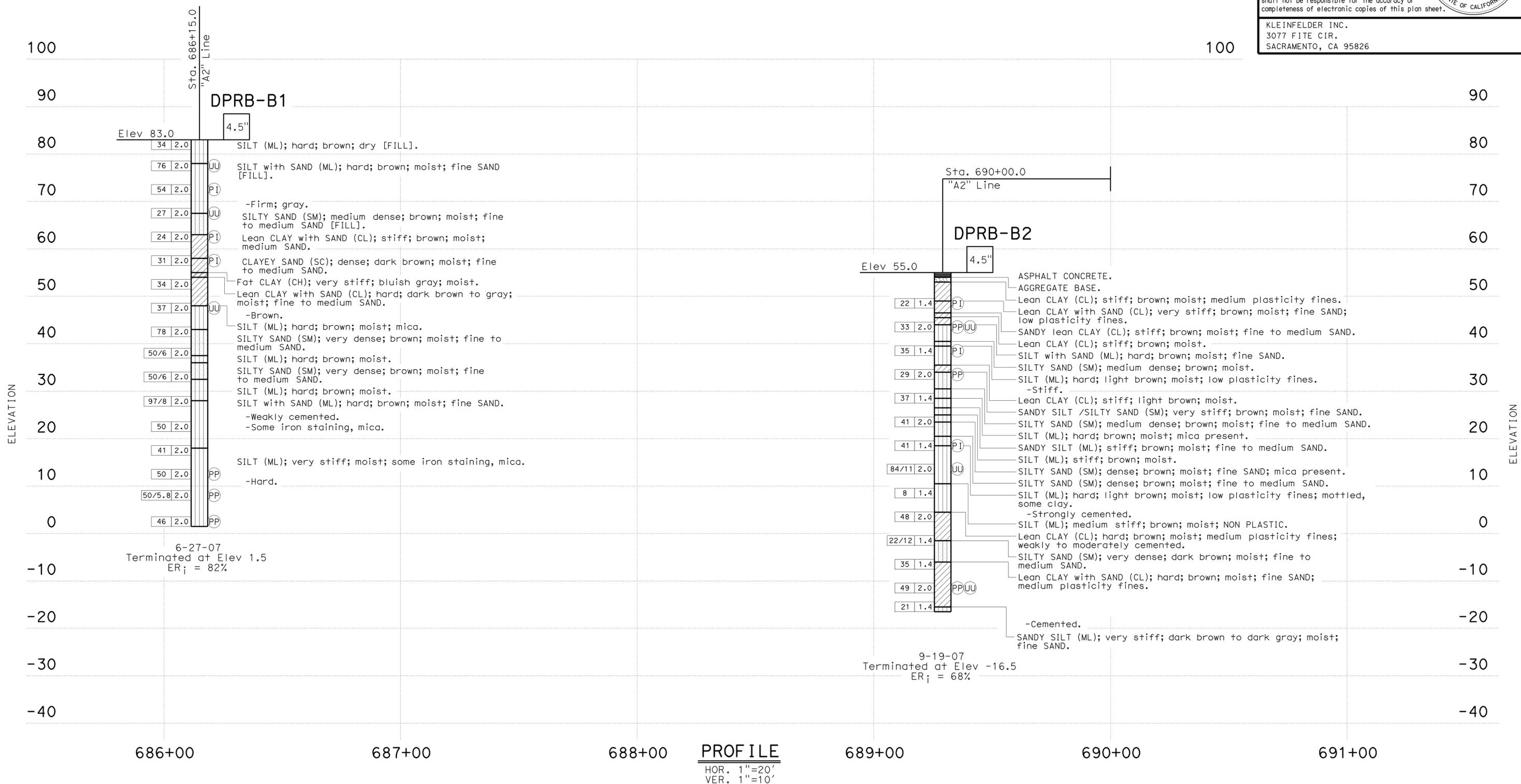
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	909	1012

1-12-09  
REGISTERED CIVIL ENGINEER

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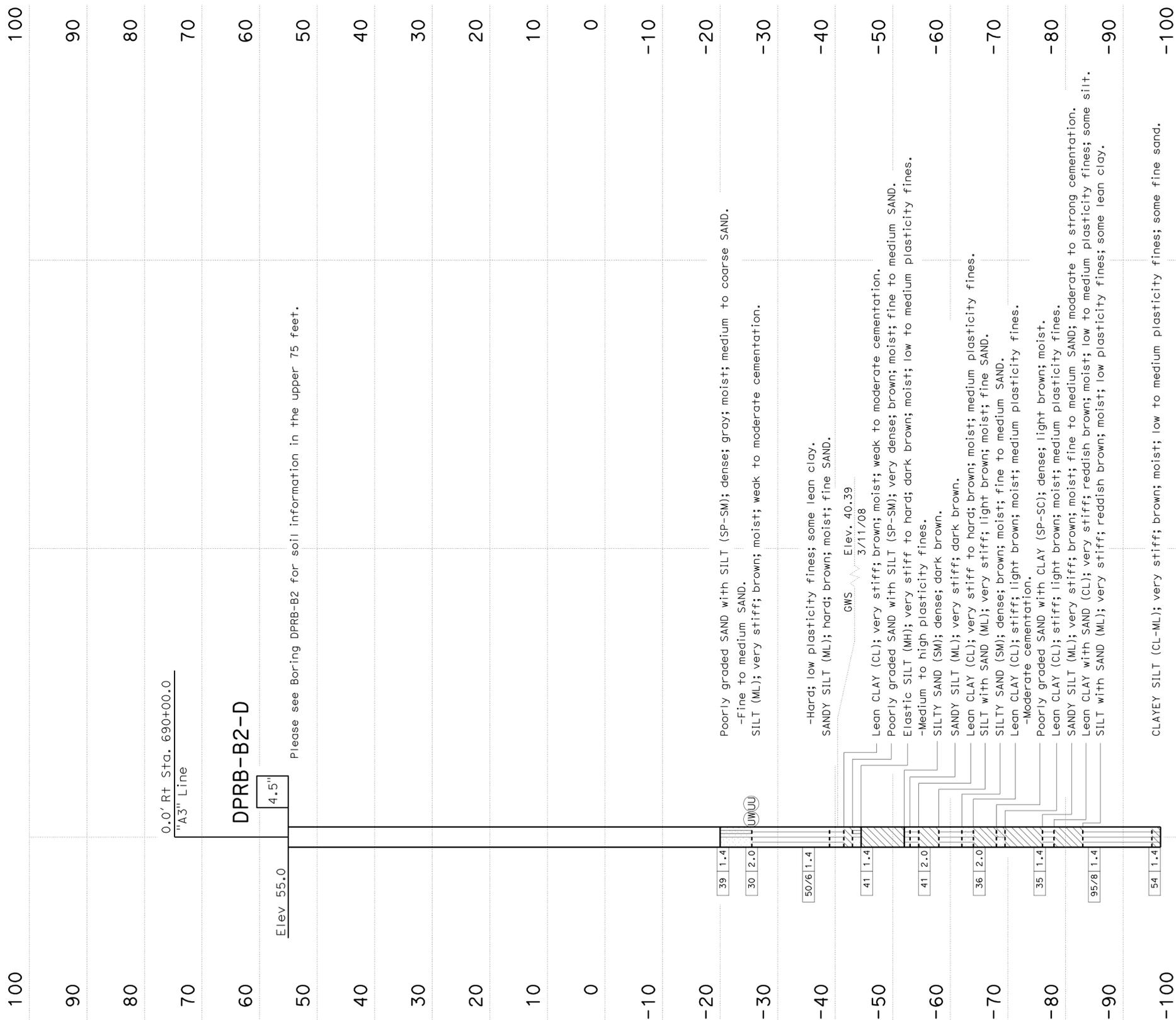


GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DESIGN BRANCH 1		LOG OF TEST BORINGS 2 OF 23	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 3-20-08, 12-22-08, 1-17-09, 4-21-09	
								SHEET 33 OF 54	

FILE => 24-01931-z-1tb02.dgn

NOTE: This LOTB sheet was prepared generally in accordance with the California Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23



690+00 691+00 691+00 691+00

**PROFILE**  
HOR: 1"=20'  
VER: 1"=10'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	910	1012

1-12-09  
REGISTERED CIVIL ENGINEER

9-7-10  
PLANS APPROVAL DATE

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3077 FITE CIR.  
SACRAMENTO, CA 95826

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin

FUNCTIONAL SUPERVISOR

DRAWN BY: A. Sanchez

FIELD INVESTIGATION BY:

NAME: K. Sorensen

CHECKED BY: G. Zhang

G. Zhang

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO.  
24-0193L/R  
POST MILES  
9.0

**DEL PASO PARK OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS 3 OF 23**

065 CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS

0 1 2 3

CU 03240  
EA 3797U1

FILE => 24-01931-z-1tb03.dgn

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES

3-26-08 12-28-08 1-17-09 4-21-09

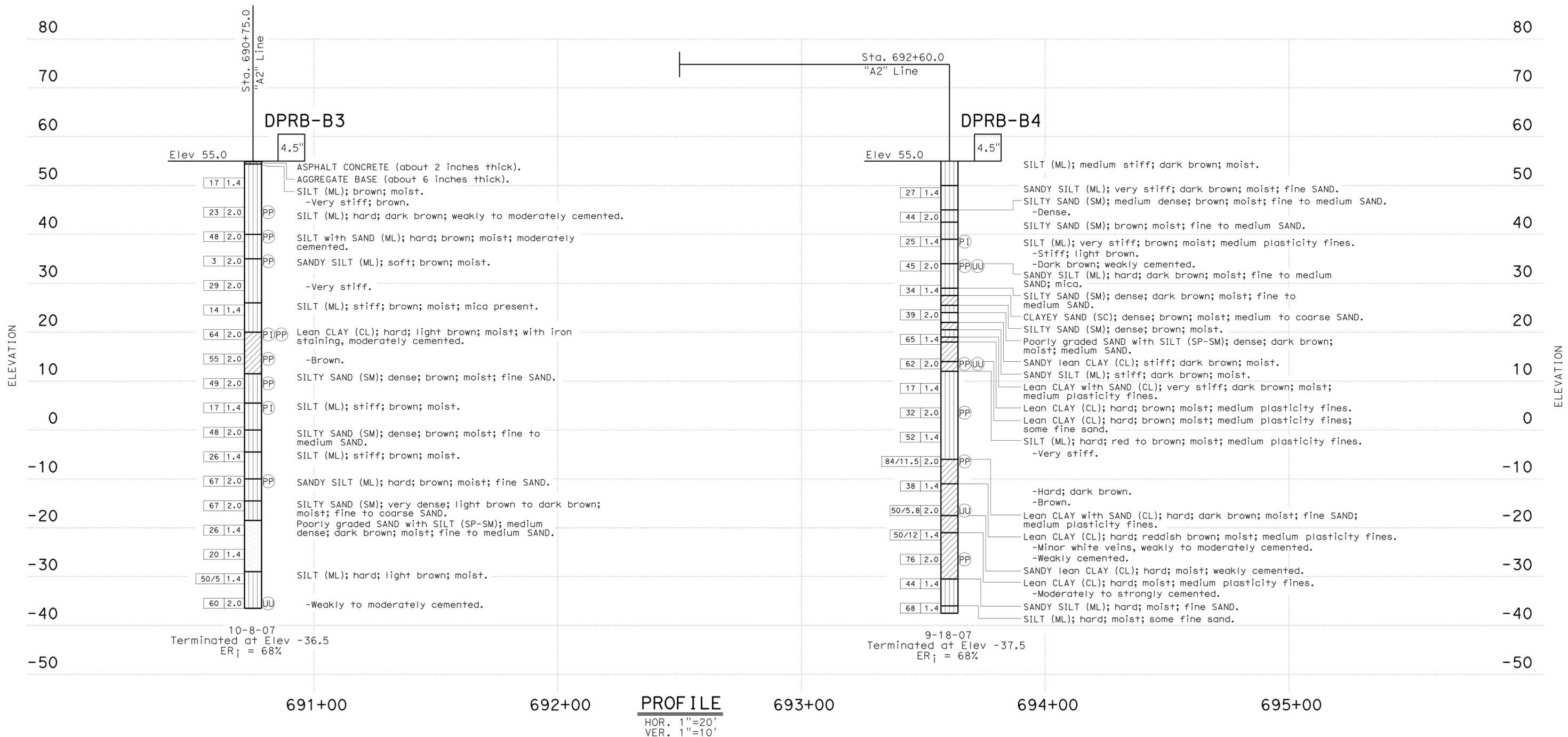
REVISION DATES

SHEET 34 OF 54

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	911	1012
REGISTERED CIVIL ENGINEER			1-12-09		
9-7-10			PLANS APPROVAL DATE		
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KLEINFELDER INC. 3077 FITE CIR. SACRAMENTO, CA 95826					



GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DESIGN BRANCH 1		LOG OF TEST BORINGS 4 OF 23	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 3-26-08, 12-22-08, 1-17-09, 4-21-09	
								SHEET 35 OF 54	

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FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

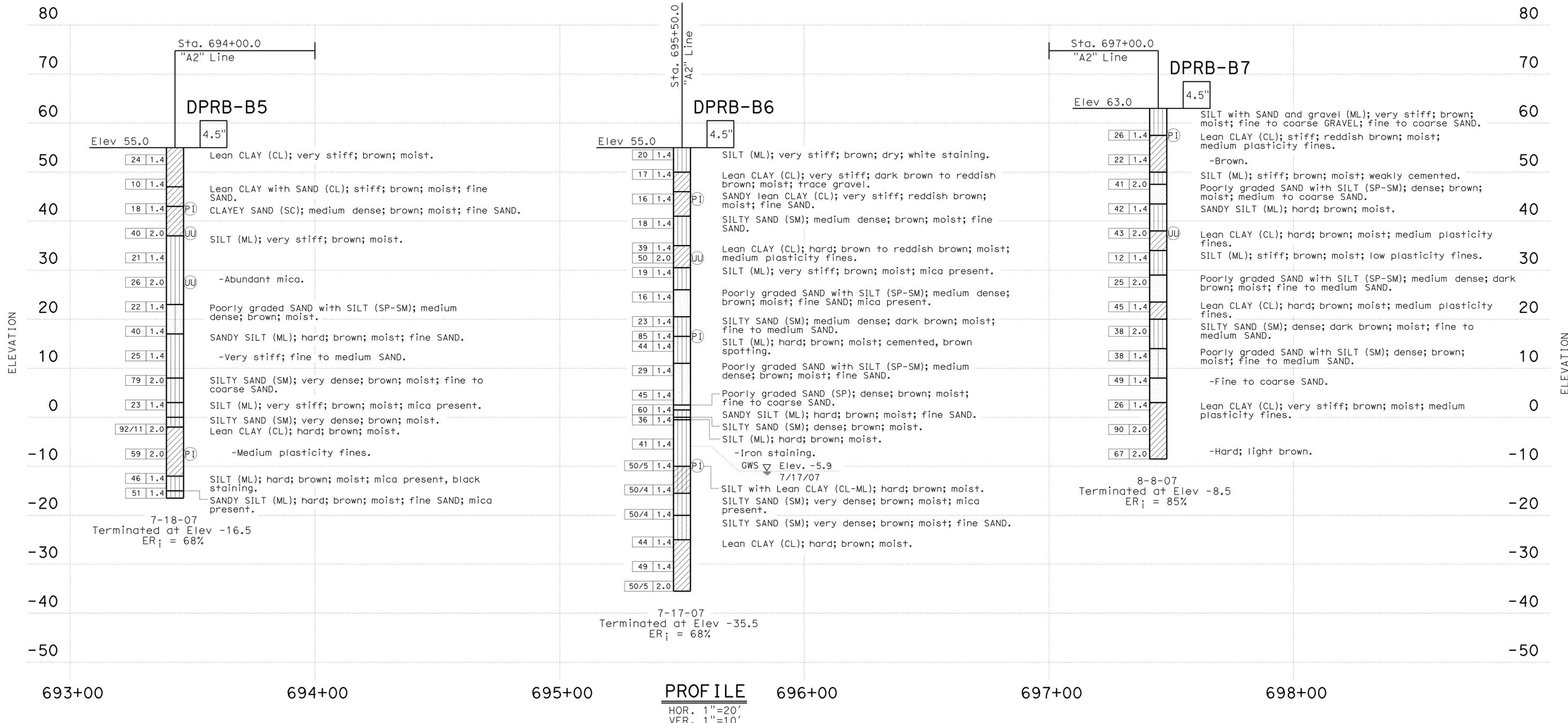
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	912	1012

1-12-09  
REGISTERED CIVIL ENGINEER

9-7-10  
PLANS APPROVAL DATE

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SACRAMENTO, CA 95826



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FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		LOG OF TEST BORINGS 5 OF 23	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 36 OF 54	

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

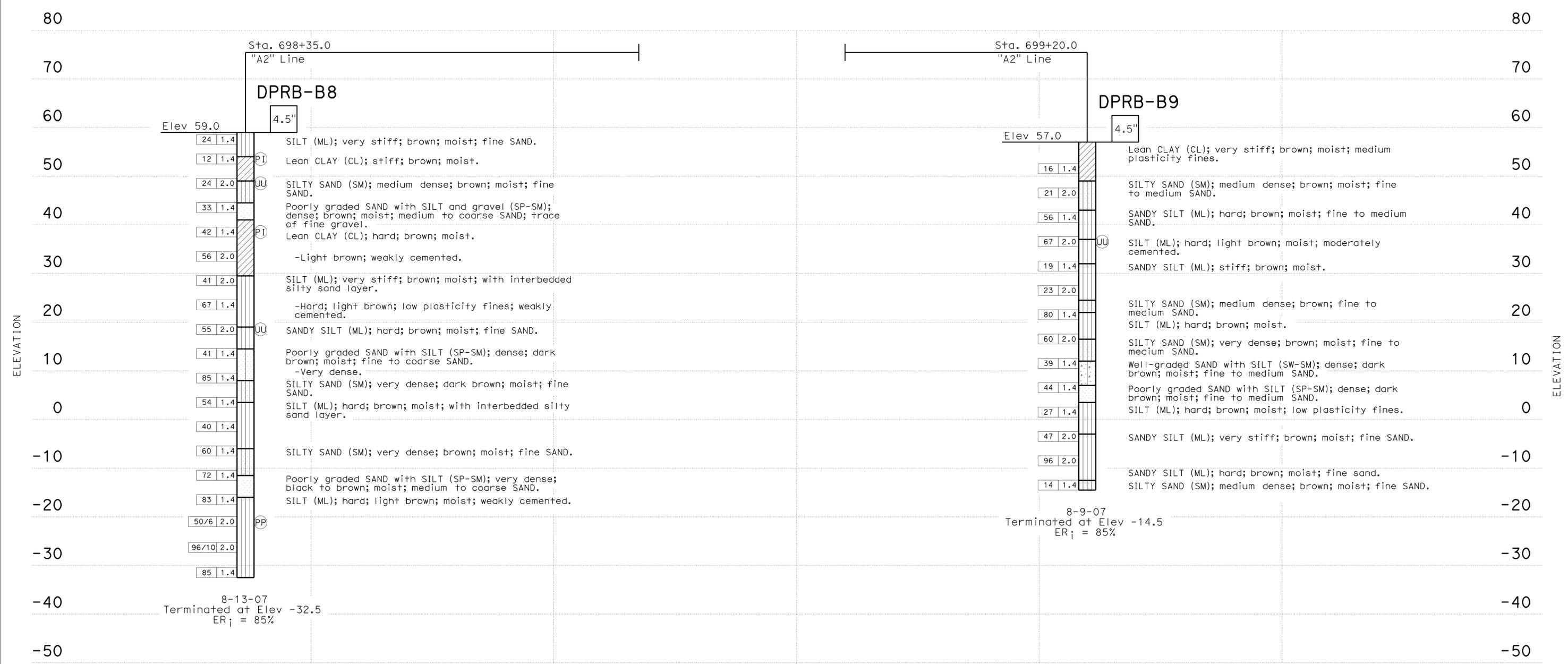
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	913	1012

REGISTERED CIVIL ENGINEER 1-12-09  
KLEINFELDER INC.  
3077 FITE CIR.  
SACRAMENTO, CA 95826

9-7-10  
PLANS APPROVAL DATE

No. GE 2520  
Exp. 9-30-10

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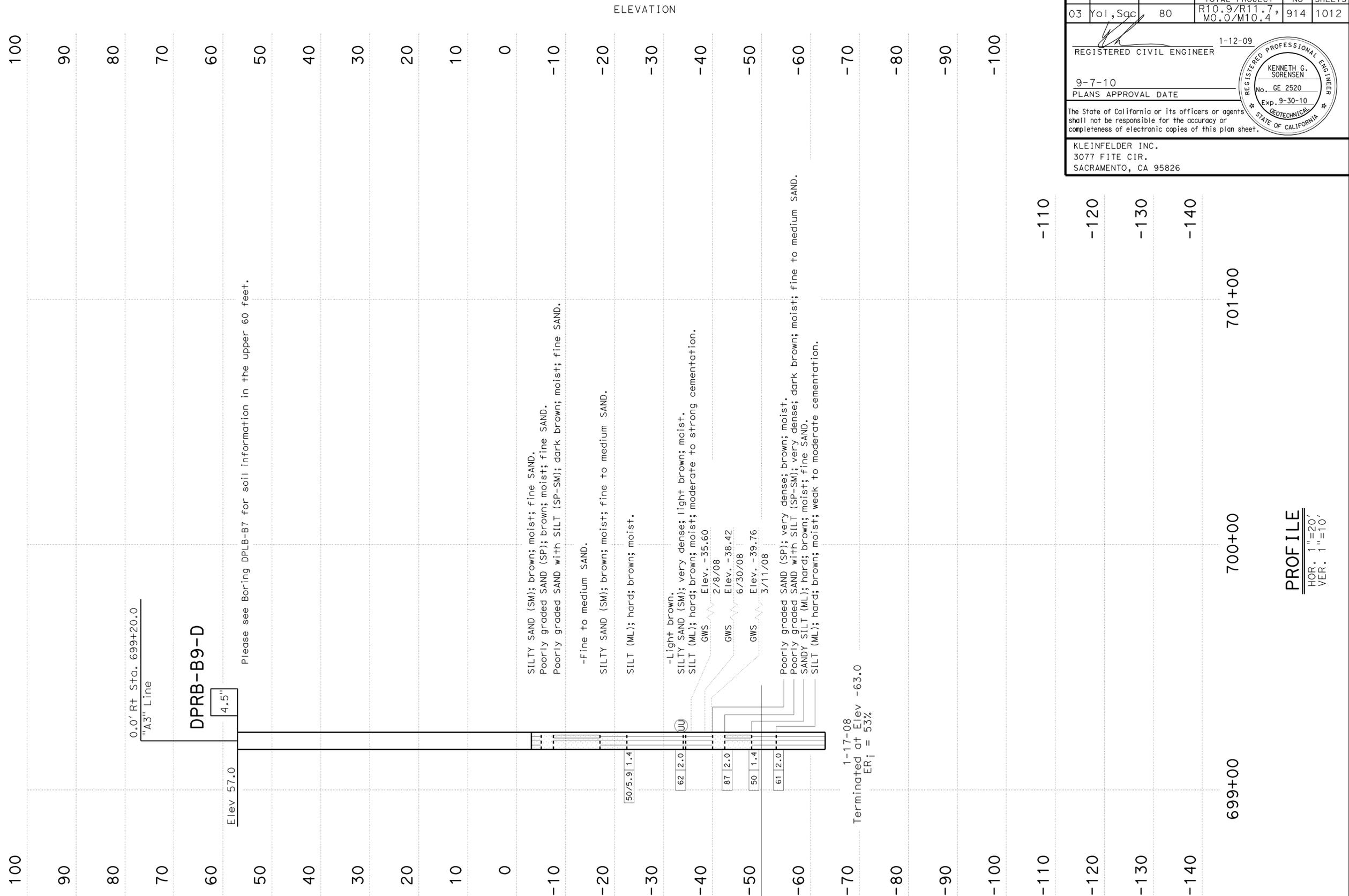
697+00 698+00 **PROFILE** 699+00 700+00 701+00  
HOR. 1"=20'  
VER. 1"=10'

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		BRIDGE NO. 24-0193L/R POST MILES 9.0		DEL PASO PARK OVERHEAD (WIDEN) LOG OF TEST BORINGS 6 OF 23			
FUNCTIONAL SUPERVISOR NAME: K. Sorensen	DRAWN BY: A. Sanchez	FIELD INVESTIGATION BY: G. Zhang	CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES				
CHECKED BY: G. Zhang		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		3-26-08 12-28-08 1-17-09 4-21-09		SHEET 37 OF 54			

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:23

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	914	1012

REGISTERED CIVIL ENGINEER  
1-12-09  
9-7-10  
PLANS APPROVAL DATE

KLEINFELDER INC.  
3077 FITE CIR.  
SACRAMENTO, CA 95826

REGISTERED PROFESSIONAL ENGINEER  
KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
STATE OF CALIFORNIA

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GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		PREPARED FOR THE <b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>		BRIDGE NO. 24-0193L/R	DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen	DRAWN BY: A. Sanchez CHECKED BY: G. Zhang	FIELD INVESTIGATION BY: G. Zhang		CU 03240 EA 3797U1		POST MILES 9.0	LOG OF TEST BORINGS 7 OF 23	
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 3-26-08 12-28-08 1-17-09 4-21-09	SHEET OF 38 54

**PROFILE**  
HOR: 1"=20'  
VER: 1"=10'

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

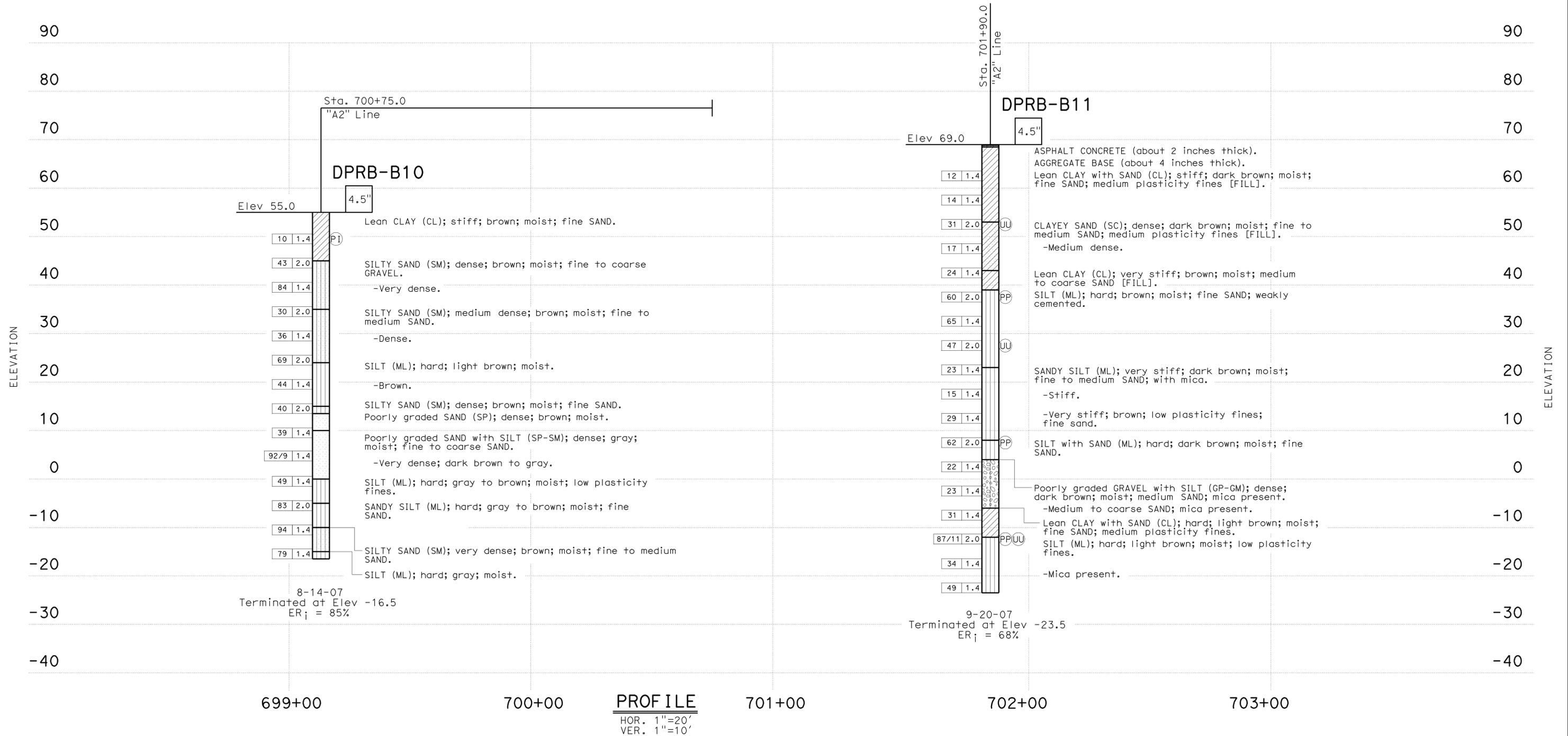
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	915	1012

1-12-09  
REGISTERED CIVIL ENGINEER

9-7-10  
PLANS APPROVAL DATE

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SACRAMENTO, CA 95826

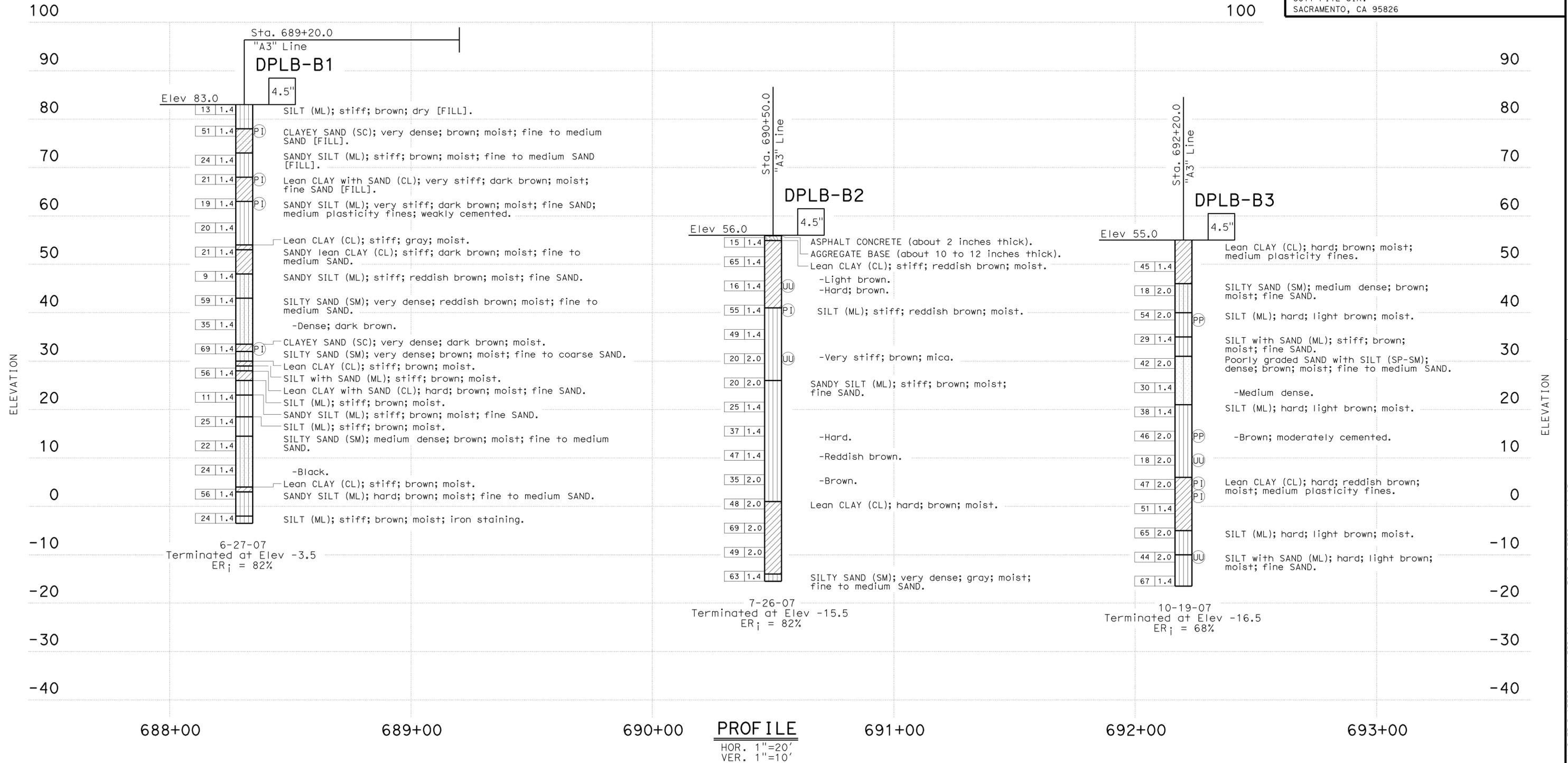


GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		DEPARTMENT OF TRANSPORTATION		POST MILES 9.0		LOG OF TEST BORINGS 8 OF 23	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
				FILE => 24-01931-z-1fb08.dgn				SHEET 39 OF 54	

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yolo, Sac	80	R10.9/R11.7 MO.0/M10.4	916	1012
REGISTERED CIVIL ENGINEER			1-12-09	REGISTERED PROFESSIONAL ENGINEER	
9-7-10			KENNETH G. SORENSEN		
PLANS APPROVAL DATE			No. GE 2520		
			Exp. 9-30-10		
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.					
KLEINFELDER INC. 3077 FITE CIR. SACRAMENTO, CA 95826					

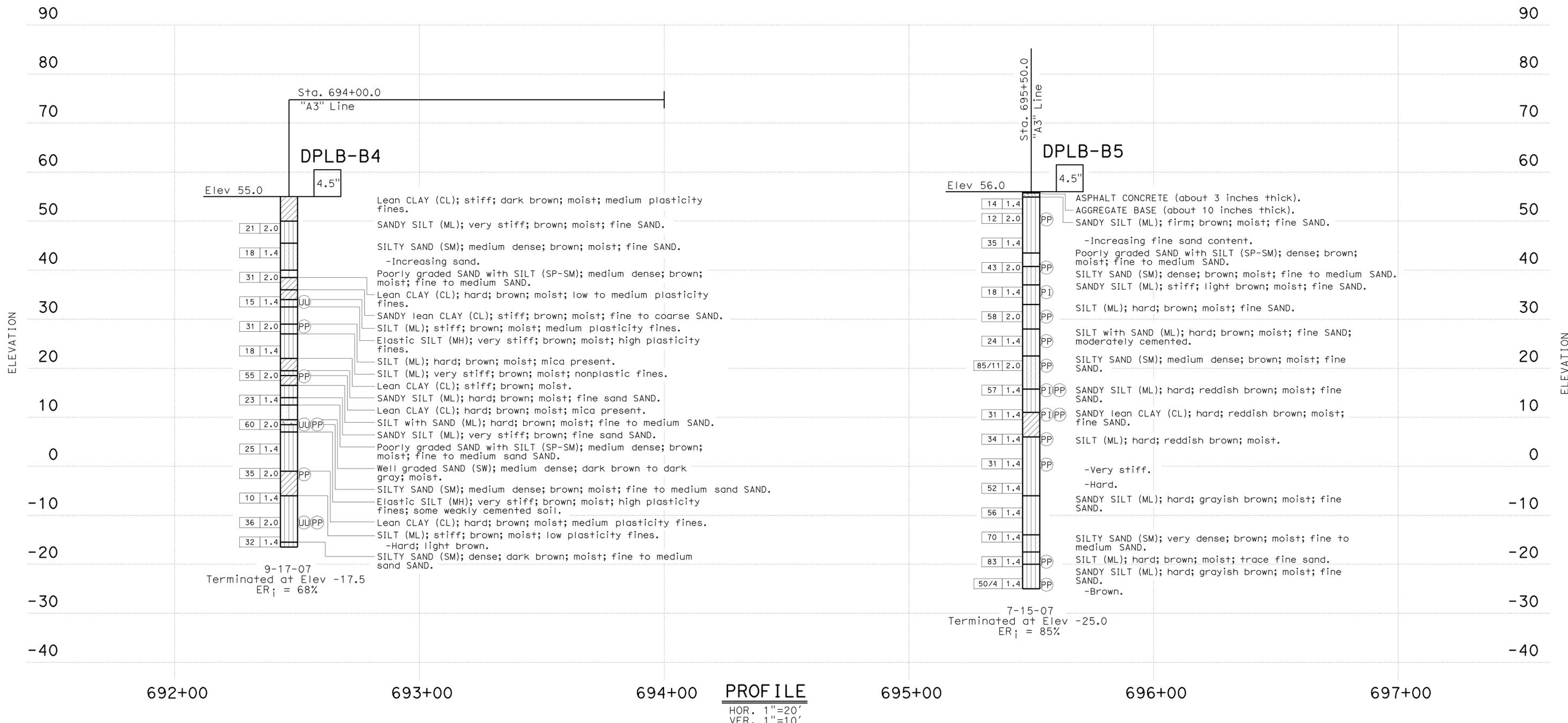
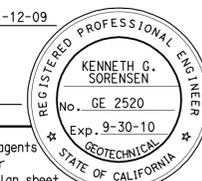


GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		LOG OF TEST BORINGS 9 OF 23	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 3-26-08, 12-28-08, 1-17-09, 4-21-09	
065 CIVIL LOG OF TEST BORINGS SHEET		FILE => 24-01931-z-1tb09.dgn		SHEET 40		OF 54		DATE PLOTTED => 04-FEB-2011	

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

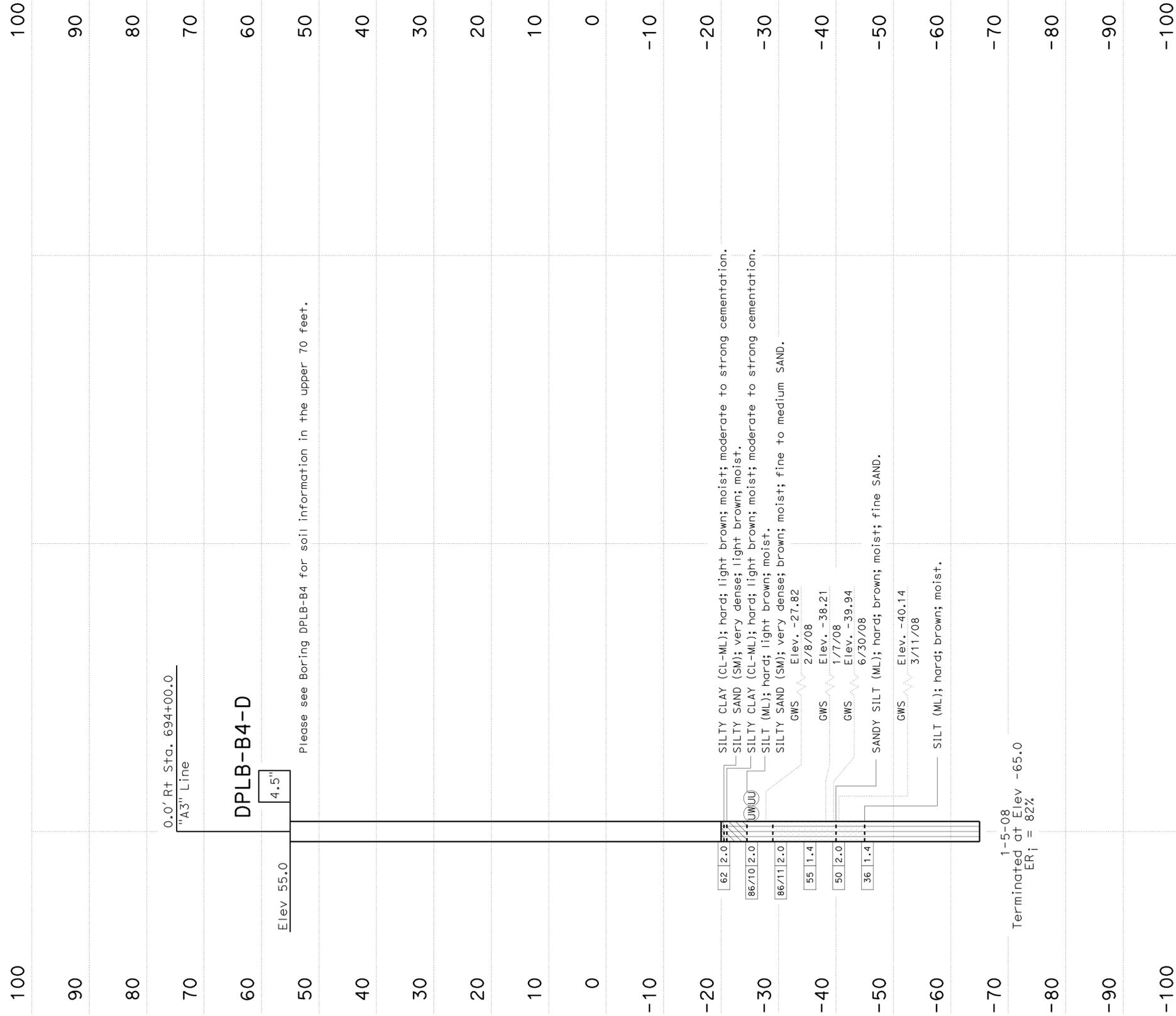
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yolo, Sac	80	R10.9/R11.7 MO.0/M10.4	917	1012
			1-12-09		
REGISTERED CIVIL ENGINEER					
9-7-10			PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
KLEINFELDER INC. 3077 FITE CIR. SACRAMENTO, CA 95826					



GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		BRIDGE NO. 24-0193L/R POST MILES 9.0		DEL PASO PARK OVERHEAD (WIDEN) LOG OF TEST BORINGS 10 OF 23			
FUNCTIONAL SUPERVISOR NAME: K. Sorensen	DRAWN BY: A. Sanchez	FIELD INVESTIGATION BY: G. Zhang	CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 41	OF 54	

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	918	1012

REGISTERED CIVIL ENGINEER  
1-12-09  
9-7-10  
PLANS APPROVAL DATE

KLEINFELDER INC.  
3077 FITE CIR.  
SACRAMENTO, CA 95826

694+00      695+00      696+00

**PROFILE**  
HOR: 1"=20'  
VER: 1"=10'

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)			
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DESIGN BRANCH 1		POST MILES 9.0		LOG OF TEST BORINGS 11 OF 23	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 42 OF 54	

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

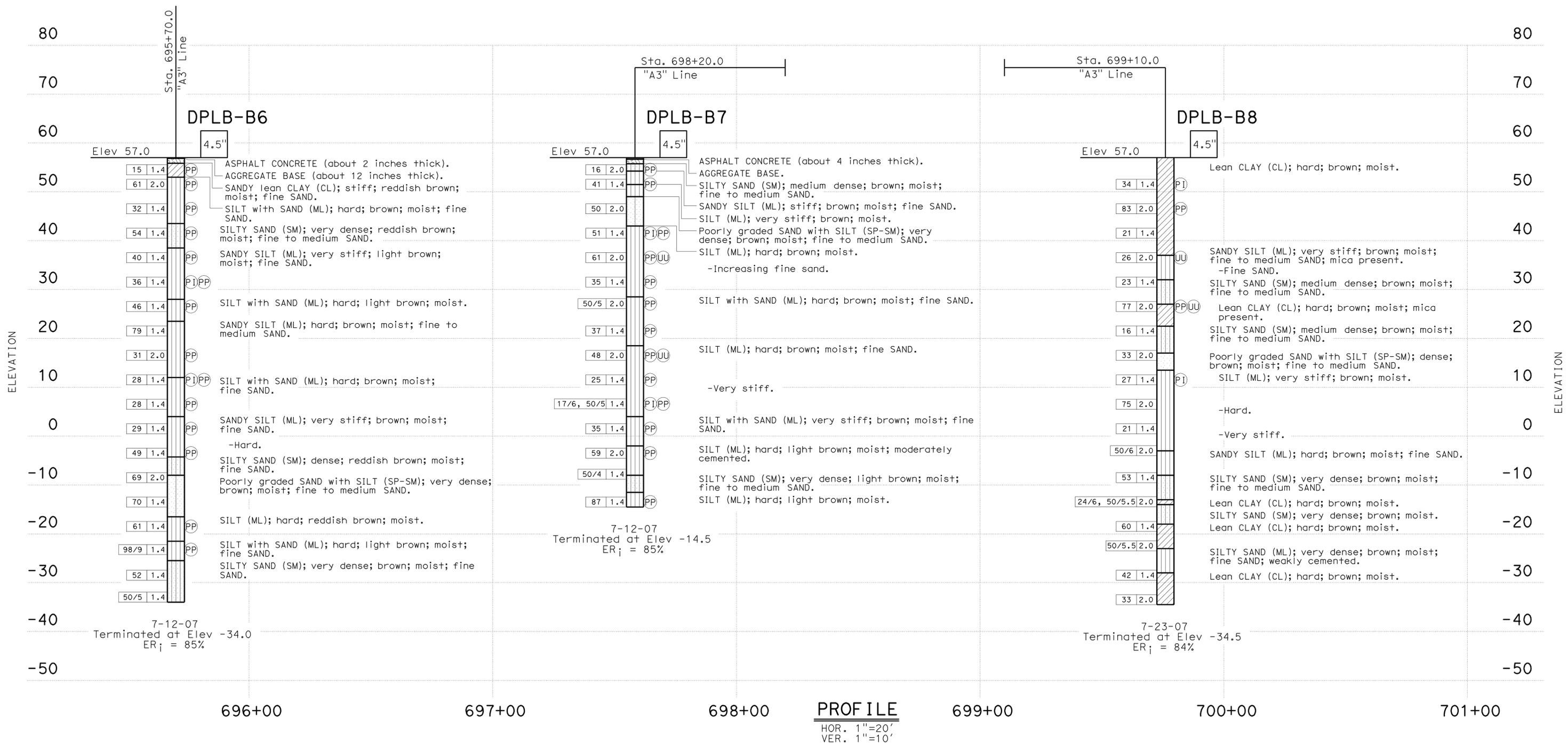
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7; MO.0/M10.4	919	1012

REGISTERED CIVIL ENGINEER 1-12-09  
 KENNETH G. SORENSEN  
 No. GE 2520  
 Exp. 9-30-10  
 STATE OF CALIFORNIA  
 GEOTECHNICAL

9-7-10  
 PLANS APPROVAL DATE

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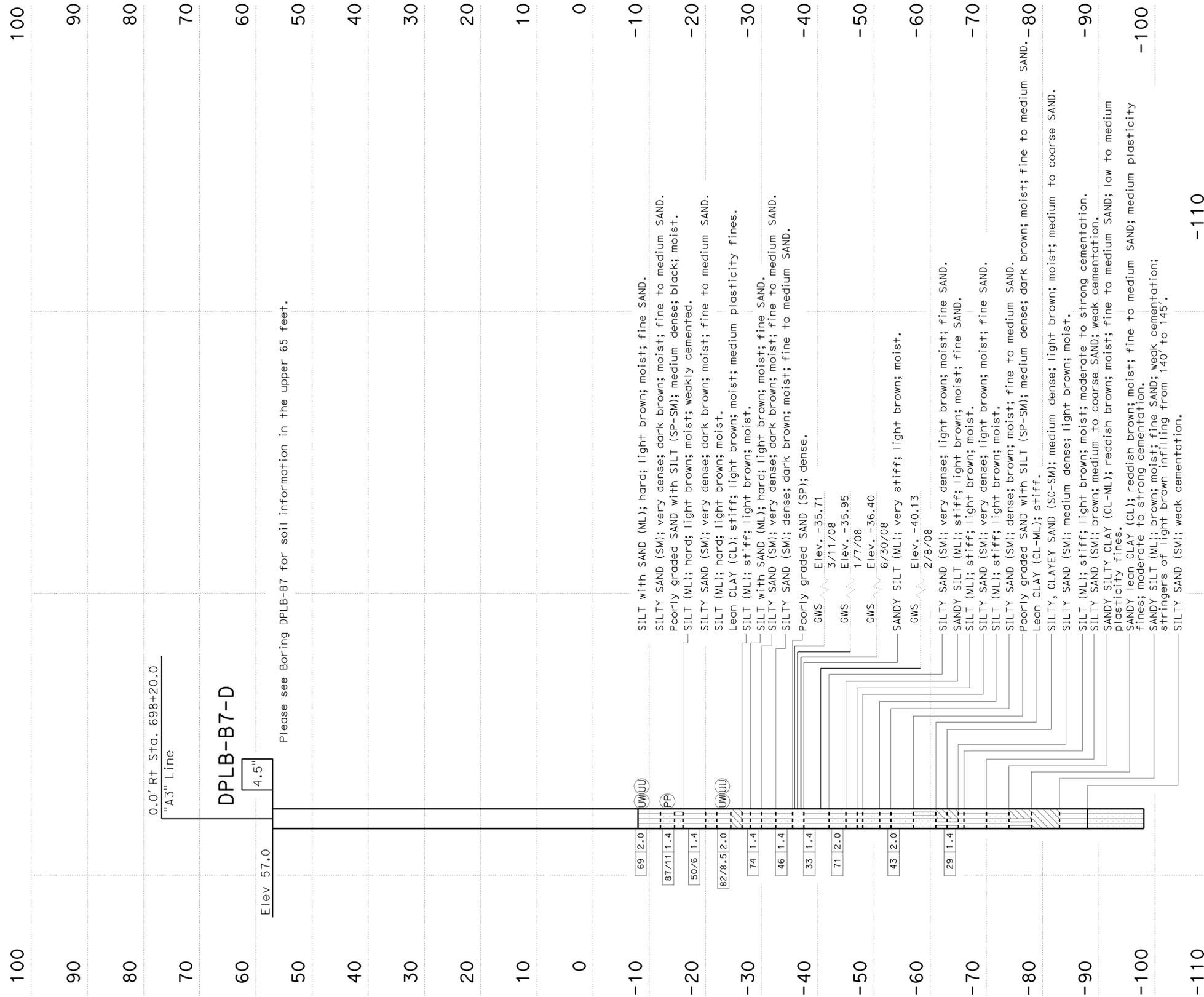
KLEINFELDER INC.  
 3077 FITE CIR.  
 SACRAMENTO, CA 95826



GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DESIGN BRANCH 1		LOG OF TEST BORINGS 12 OF 23	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		CU 03240 EA 379701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
065 CIVIL LOG OF TEST BORINGS SHEET		FILE => 24-01931-z-1fb12.dgn		SHEET 43		OF 54			

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23



12-28-08  
Terminated at Elev -98.0  
ER<sub>i</sub> = 82%

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	920	1012

REGISTERED CIVIL ENGINEER  
1-12-09  
9-7-10  
PLANS APPROVAL DATE

KLEINFELDER INC.  
3077 FITE CIR.  
SACRAMENTO, CA 95826

REGISTERED PROFESSIONAL ENGINEER  
KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
STATE OF CALIFORNIA  
GEOTECHNICAL

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.

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin

FUNCTIONAL SUPERVISOR

NAME: K. Sorensen

DRAWN BY: A. Sanchez

CHECKED BY: G. Zhang

FIELD INVESTIGATION BY:

G. Zhang

PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.  
24-0193L/R  
POST MILES  
9.0

DEL PASO PARK OVERHEAD (WIDEN)  
LOG OF TEST BORINGS 13 OF 23

065 CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS

0 1 2 3

CU 03240  
EA 3797U1

FILE => 24-01931-z-1fb13.dgn

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES

3-26-08 12-28-08 1-17-09 4-21-09

REVISION DATES

SHEET 44 OF 54

PROFILE  
HOR: 1"=20'  
VER: 1"=10'

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 23

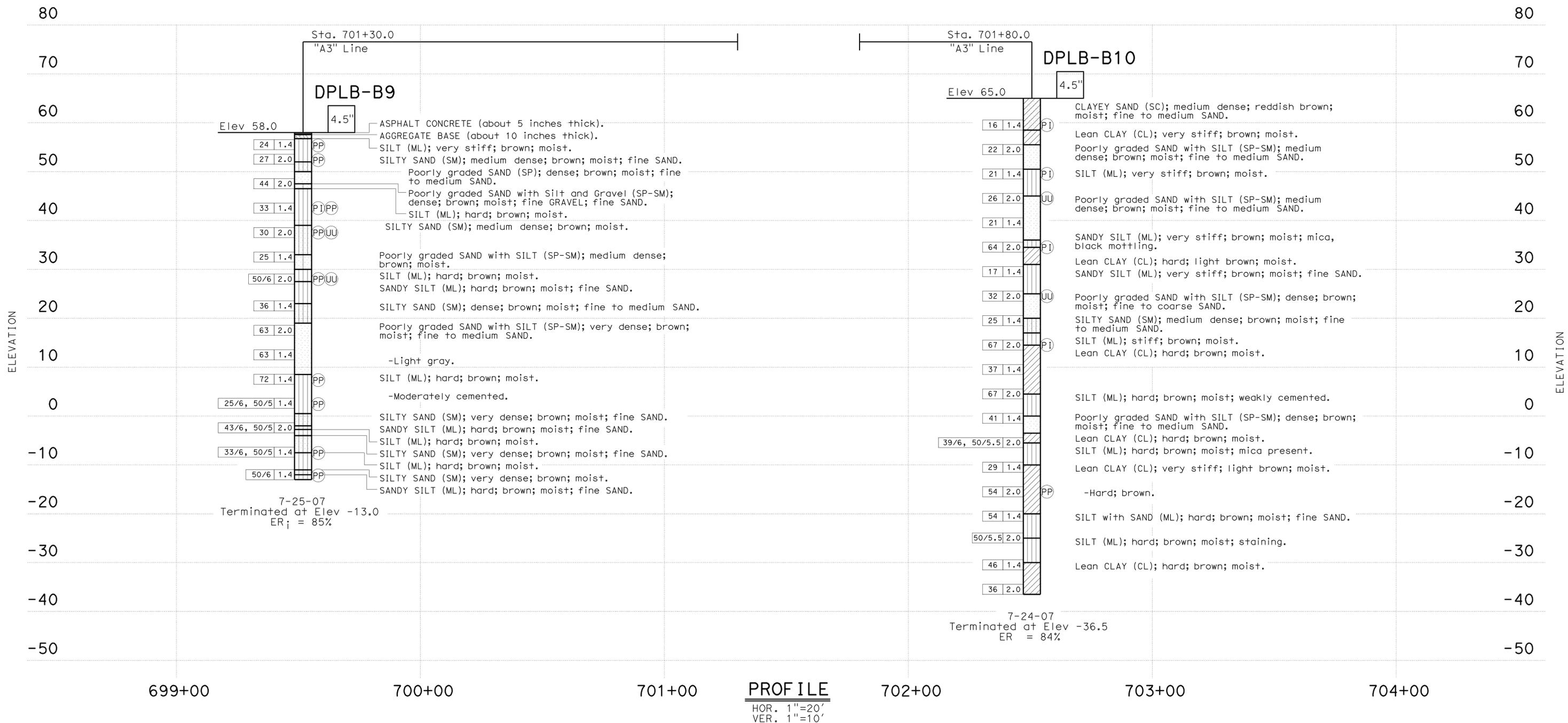
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yolo, Sac	80	R10.9/R11.7 M0.0/M10.4	921	1012

1-12-09  
REGISTERED CIVIL ENGINEER

9-7-10  
PLANS APPROVAL DATE

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KLEINFELDER INC.  
3077 FITE CIR.  
SACRAMENTO, CA 95826



GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DESIGN BRANCH 1		LOG OF TEST BORINGS 14 OF 23	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		CU 03240 EA 379701		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
065 CIVIL LOG OF TEST BORINGS SHEET		FILE => 24-01931-z-1fb14.dgn		SHEET 45		OF 54			

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	922	1012

1-12-09  
REGISTERED CIVIL ENGINEER DATE

9-7-10  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
STATE OF CALIFORNIA  
GEOTECHNICAL

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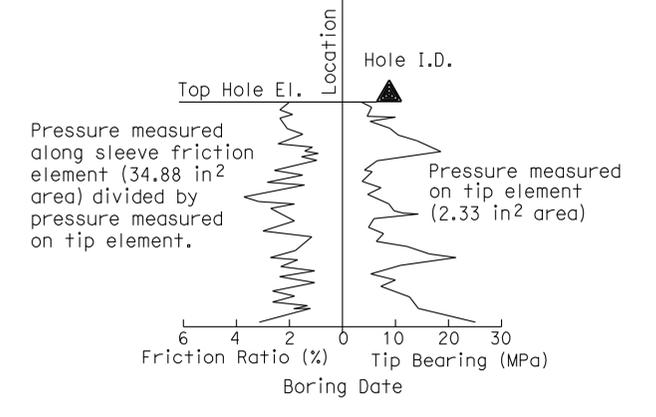
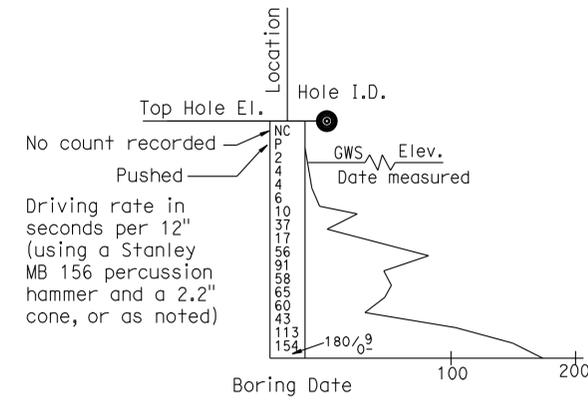
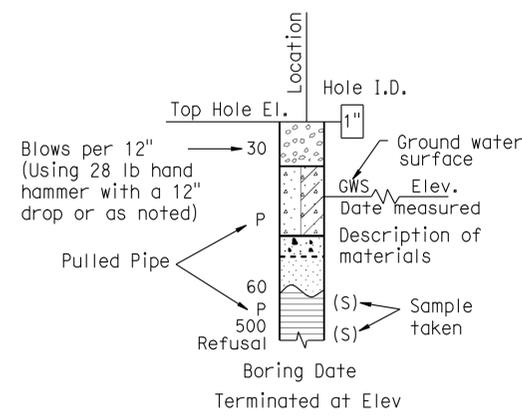
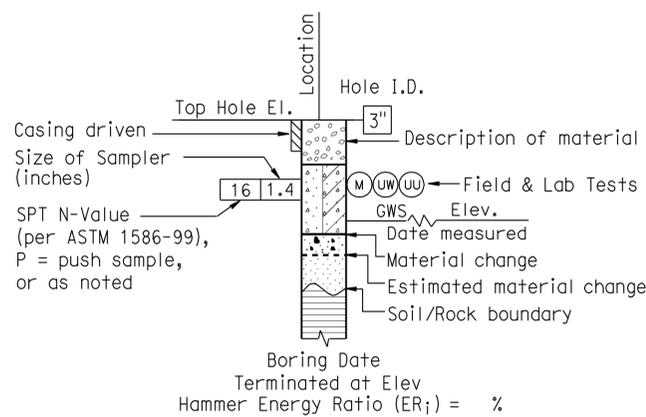
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



GEOTECHNICAL SERVICES OVERSIGHT: J. Martin

FUNCTIONAL SUPERVISOR: K. Sorensen

PREPARED BY: A. Sanchez

CHECKED BY: G. Zhang

**PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION**

**DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1**

BRIDGE NO.

24-0193L/R

POST MILE

9.0

**DEL PASO PARK OVERHEAD (WIDEN)**

**LOG OF TEST BORINGS 15 OF 23**

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS

0 1 2 3

CU 03240  
EA 379701

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES

REVISION DATES

3-20-08 12-28-08 1-17-09 4-21-09

SHEET OF

46 54

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	923	1012

1-12-09  
REGISTERED CIVIL ENGINEER DATE

9-7-10  
PLANS APPROVAL DATE

KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
REGISTERED PROFESSIONAL ENGINEER  
GEOTECHNICAL  
STATE OF CALIFORNIA

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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly graded GRAVEL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND		SILTY CLAY
	Well-graded GRAVEL with CLAY and SAND		SILTY CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND		SILTY CLAY with GRAVEL
	Poorly graded GRAVEL with SILT		SANDY SILTY CLAY
	Poorly graded GRAVEL with SILT and SAND		GRAVELLY SILTY CLAY
	Poorly graded GRAVEL with CLAY		GRAVELLY SILTY CLAY with SAND
	Poorly graded GRAVEL with CLAY and SAND		SILT
	SILTY GRAVEL		SILT with SAND
	SILTY GRAVEL with SAND		SILT with GRAVEL
	CLAYEY GRAVEL		SANDY SILT
	CLAYEY GRAVEL with SAND		SANDY SILT with GRAVEL
	SILTY, CLAYEY GRAVEL		GRAVELLY SILT
	SILTY, CLAYEY GRAVEL with SAND		GRAVELLY SILT with SAND
	Well-graded SAND		ORGANIC lean CLAY
	Well-graded SAND with GRAVEL		ORGANIC lean CLAY with SAND
	Poorly graded SAND		ORGANIC lean CLAY with GRAVEL
	Poorly graded SAND with GRAVEL		SANDY ORGANIC lean CLAY
	Well-graded SAND with SILT		GRAVELLY ORGANIC lean CLAY
	Well-graded SAND with SILT and GRAVEL		GRAVELLY ORGANIC lean CLAY with SAND
	Well-graded SAND with CLAY		ORGANIC SILT
	Well-graded SAND with CLAY and GRAVEL		ORGANIC SILT with SAND
	Poorly graded SAND with SILT		ORGANIC SILT with GRAVEL
	Poorly graded SAND with SILT and GRAVEL		SANDY ORGANIC SILT
	Poorly graded SAND with CLAY		SANDY ORGANIC SILT with GRAVEL
	Poorly graded SAND with CLAY and GRAVEL		GRAVELLY ORGANIC SILT
	SILTY SAND		GRAVELLY ORGANIC SILT with SAND
	SILTY SAND with GRAVEL		ORGANIC fat CLAY
	CLAYEY SAND		ORGANIC fat CLAY with SAND
	CLAYEY SAND with GRAVEL		ORGANIC fat CLAY with GRAVEL
	SILTY, CLAYEY SAND		SANDY ORGANIC fat CLAY
	SILTY, CLAYEY SAND with GRAVEL		SANDY ORGANIC fat CLAY with GRAVEL
	PEAT		GRAVELLY ORGANIC fat CLAY
	COBBLES		GRAVELLY ORGANIC fat CLAY with SAND
	COBBLES and BOULDERS		ORGANIC elastic SILT
	BOULDERS		ORGANIC elastic SILT with SAND
			ORGANIC elastic SILT with GRAVEL
			SANDY ORGANIC elastic SILT
			SANDY ORGANIC elastic SILT with GRAVEL
			GRAVELLY ORGANIC elastic SILT
			GRAVELLY ORGANIC elastic SILT with SAND
			ORGANIC SOIL
			ORGANIC SOIL with SAND
			ORGANIC SOIL with GRAVEL
			SANDY ORGANIC SOIL
			SANDY ORGANIC SOIL with GRAVEL
			GRAVELLY ORGANIC SOIL
			GRAVELLY ORGANIC SOIL with SAND

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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(UC)	Unconfined Compression-Soil (ASTM D 2166)
(UU)	Unconfined Compression-Rock (ASTM D 2938)
(UW)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

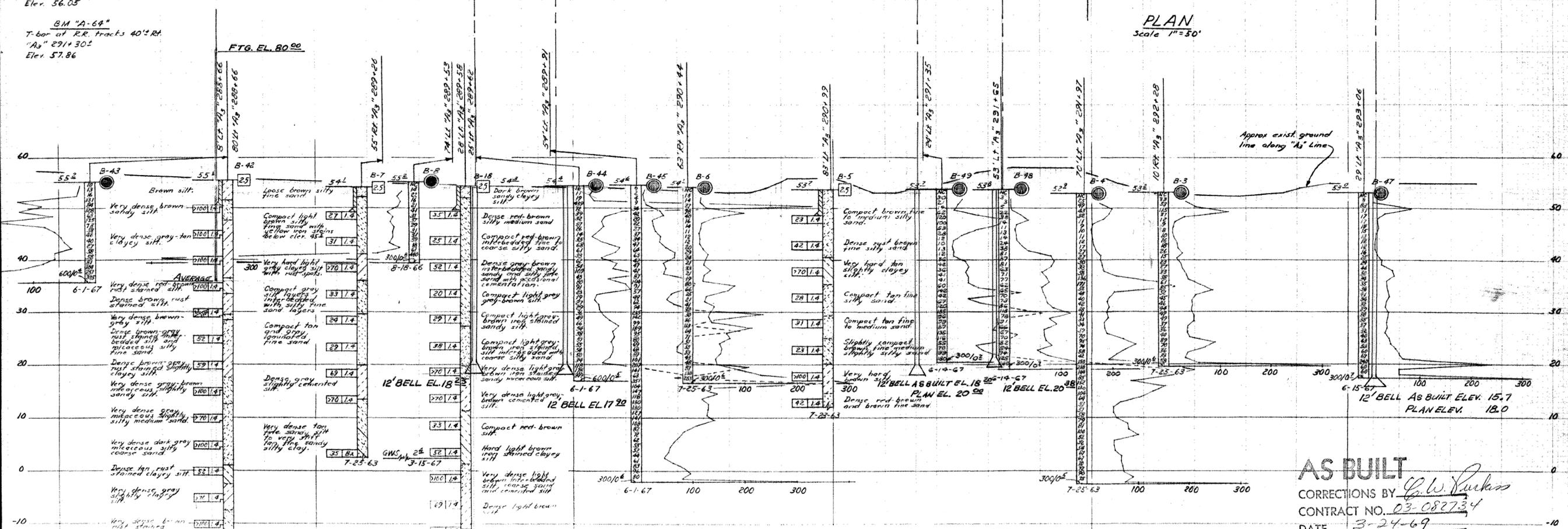
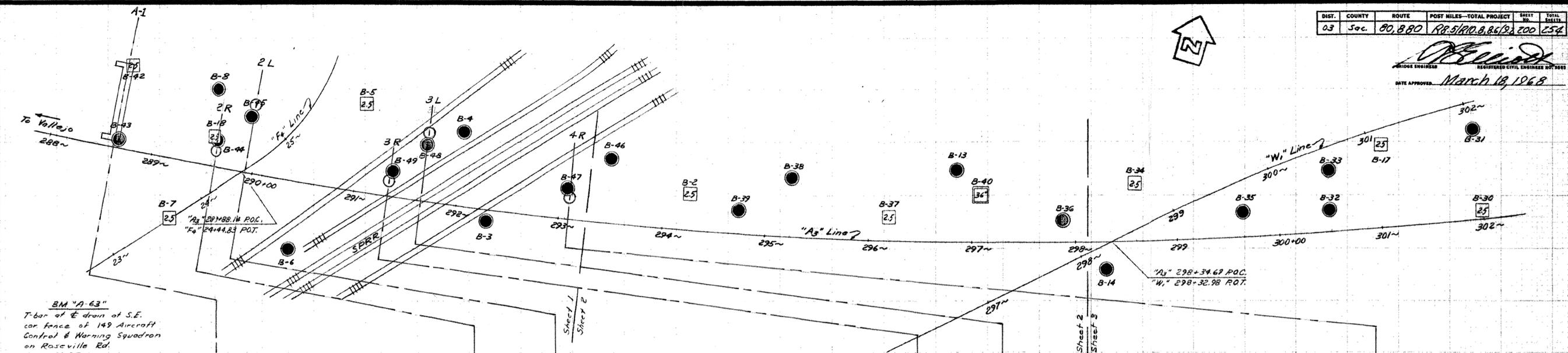
PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		PREPARED BY: A. Sanchez		BRIDGE NO. 24-0193L/R		DEL PASO PARK OVERHEAD (WIDEN)	
FUNCTIONAL SUPERVISOR: K. Sorensen		CHECKED BY: G. Zhang		POST MILE 9.0		LOG OF TEST BORINGS 16 OF 23	
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		CU 03240 EA 3797U1		REVISION DATES	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES		3-20-08 12-28-08 1-17-09 4-21-09	
GS LOTB SOIL LEGEND		FILE => 24-01931-2-1fb161.dgn		SHEET 47		OF 54	

DIST.	COUNTY	ROUTE	POST MILES—TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Sec.	80, B80	R10.9/R11.7, M0.0/M10.4	200	254

ENGINEER  
 REGISTERED CIVIL ENGINEER  
 DATE APPROVED: March 18, 1968



**AS BUILT**  
 CORRECTIONS BY G.W. Purkiss  
 CONTRACT NO. 03-082734  
 DATE 3-24-69

TO ACCOMPANY PLANS DATED 9-7-10

**DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES**  
 As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILE	TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Soc	80	R10.9/R11.7, M0.0/M10.4	924	1012	

REGISTERED CIVIL ENGINEER  
**DEL PASO PARK OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS 17 OF 23**  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU	03240	BRIDGE NO.	24-0193L/R
EA	379700	DATE	1-12-09
Sheet	of	48	54



**PROFILE**  
 Scale: Horiz 1"=20'  
 Vert 1"=10'

STATE OF CALIFORNIA  
 TRANSPORTATION AGENCY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEL PASO PARK SEPARATION AND OVERHEAD**

**LOG OF TEST BORINGS 1 of 3**

BRIDGE NO.	24-193 L	POST MILE	9.0	DRAWING NO.	24193-4	SHEET	26	OF	28
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REVISION DATES (PRELIMINARY STAGE ONLY)

**LEGEND OF BORING OPERATIONS**

**ROTARY BORING**

**1" SOIL TUBE**

**LEGEND OF EARTH MATERIALS**

**CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS**

**NOTE:** Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

BRIDGE DEPARTMENT  
 ENGINEERING GEOLOGY SECTION

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Sac	80, BBO	R8.5/R0.8, 6.6/R2	201	254

REGISTERED CIVIL ENGINEER  
 KENNETH G. SORENSEN  
 No. GE 2520  
 Exp. 9-30-10  
 STATE OF CALIFORNIA  
 DATE APPROVED: March 18, 1969

TO ACCOMPANY PLANS DATED 9-7-10  
 DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES  
 As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	925	1012

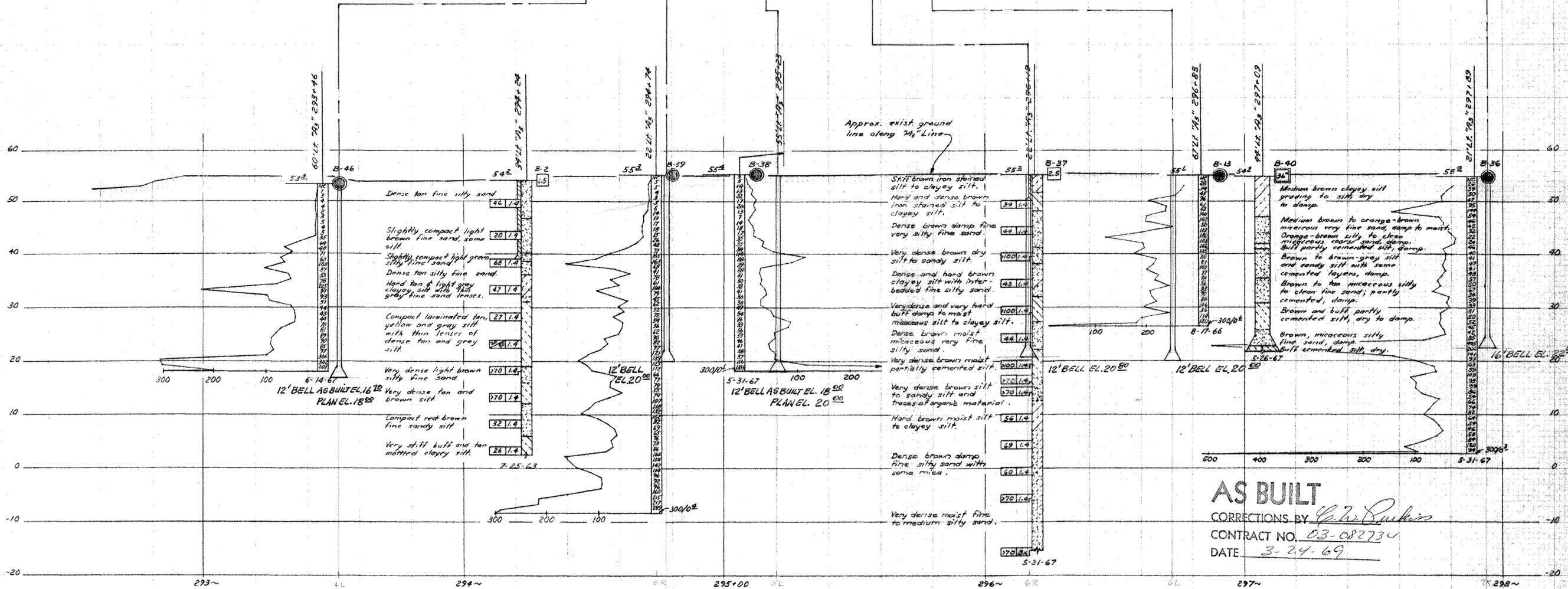
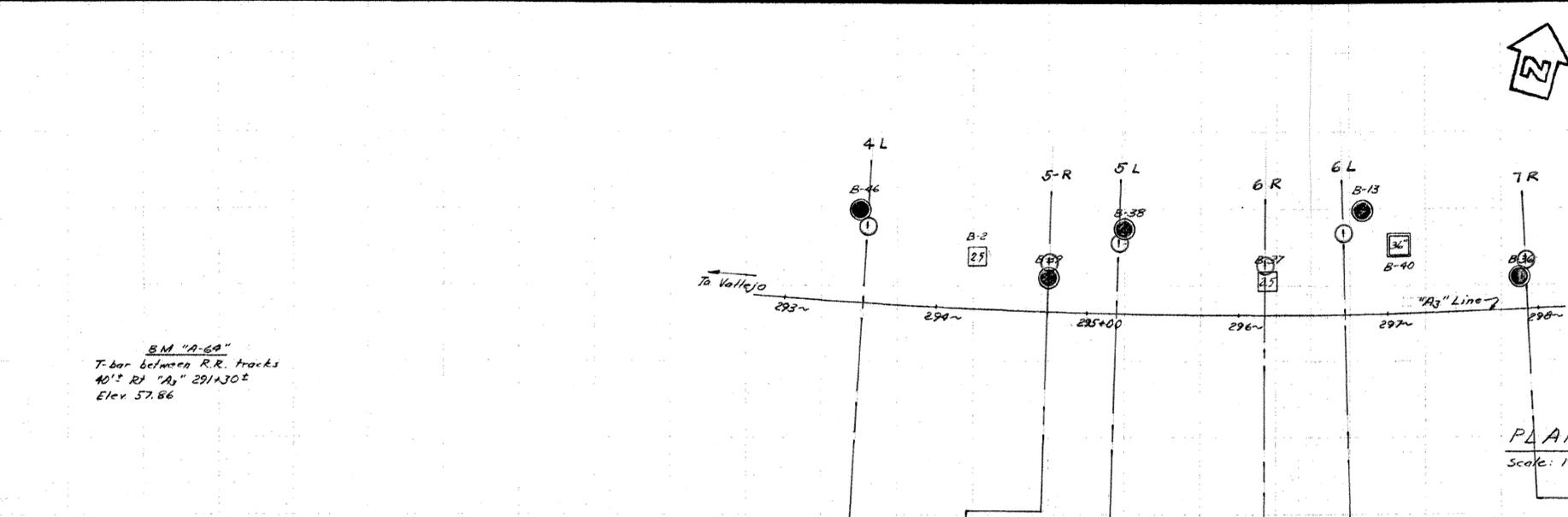
REGISTERED CIVIL ENGINEER  
 DATE 1-12-09  
**DEL PASO PARK OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS 18 OF 23**  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA  
 CU: 03240 BRIDGE No. 24-0193L/R  
 EA: 379700  
 Sheet of 49 54



**LEGEND OF BORING OPERATIONS**

Top Hole El. Location  
 Penetration of material (with blow count for 10' interval)  
 Blow count (with blow count for 10' interval)  
 Average blow count (with blow count for 10' interval)  
 Estimated material change (with blow count for 10' interval)  
 Unrecoverable material change (with blow count for 10' interval)  
 Friction above (with blow count for 10' interval)  
 Friction below (with blow count for 10' interval)

2 1/2" CONE PENETROMETER  
 SAMPLER BORING (SMB)  
 ROTARY BORING (REB)  
 AUGER BORING (AB)  
 CORE BORING (CB)  
 TEST PIT (TP)



**AS BUILT**  
 CORRECTIONS BY *G. R. Dinkins*  
 CONTRACT NO. 03-08273  
 DATE 3-24-69

**PROFILE**  
 Scale: Horiz: 1"=20'  
 Vert: 1"=10'

**LEGEND OF EARTH MATERIALS**

SLTY CLAY OR CLAY SILT  
 CLAY SILT  
 ORGANIC MATTER  
 FILL MATERIAL  
 IGNEOUS ROCK  
 SEDIMENTARY ROCK  
 METAMORPHIC ROCK

GRAVEL  
 SAND  
 SILT  
 CLAY  
 SANDY CLAY OR CLAYEY SAND  
 SILTY SAND

**CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS**

Diagrams showing the basic size limits of GRADE SIZE DISTRIBUTION used in this report. If GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE USED TO DESCRIBE SAND, SILT, CLAY, OR SILTY SAND, SILTY CLAY, OR SILTY CLAYEY SAND. WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO GRADE SIZE LIMITS.

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA  
 TRANSPORTATION AGENCY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEL PASO PARK SEPARATION AND OVERHEAD**

**LOG OF TEST BORINGS 2 of 3**

BRIDGE NO. 24-193 L	POST MILE 80	DRAWING NO. 24193-5	SHEET OF 27 28
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REVISION DATES (PRELIMINARY STAGE ONLY)  
 9/5

BRIDGE DEPARTMENT  
 ENGINEERING GEOLOGY SECTION

201

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Sac	80, 880	RR 5, RD 8, 8.6, 12, 202, 254	28	28

TO ACCOMPANY PLANS DATED 9-7-10

**DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES**

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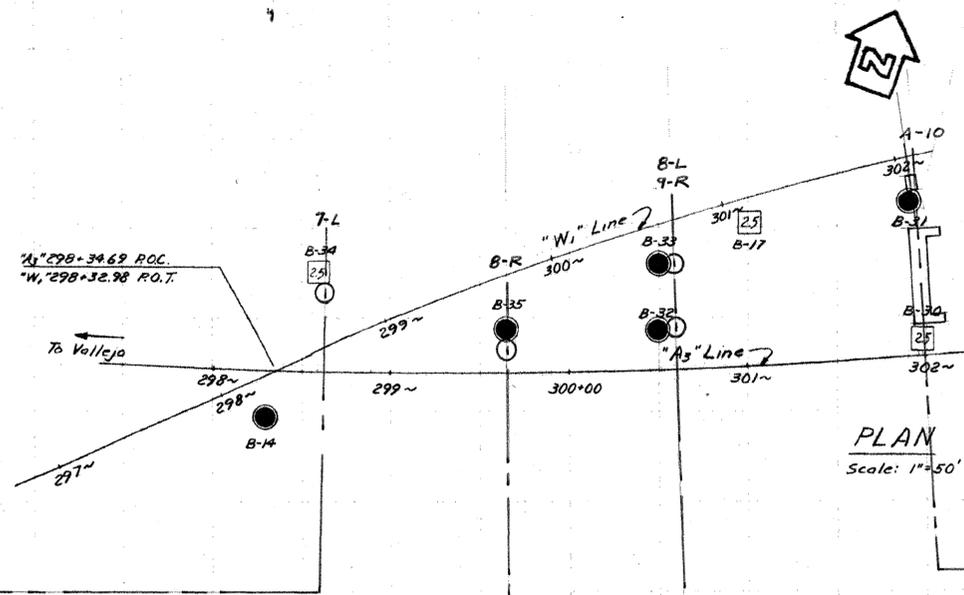
DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, M0.0/M10.4	926	1012

REGISTERED CIVIL ENGINEER  
**DEL PASO PARK OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS 19 OF 23**

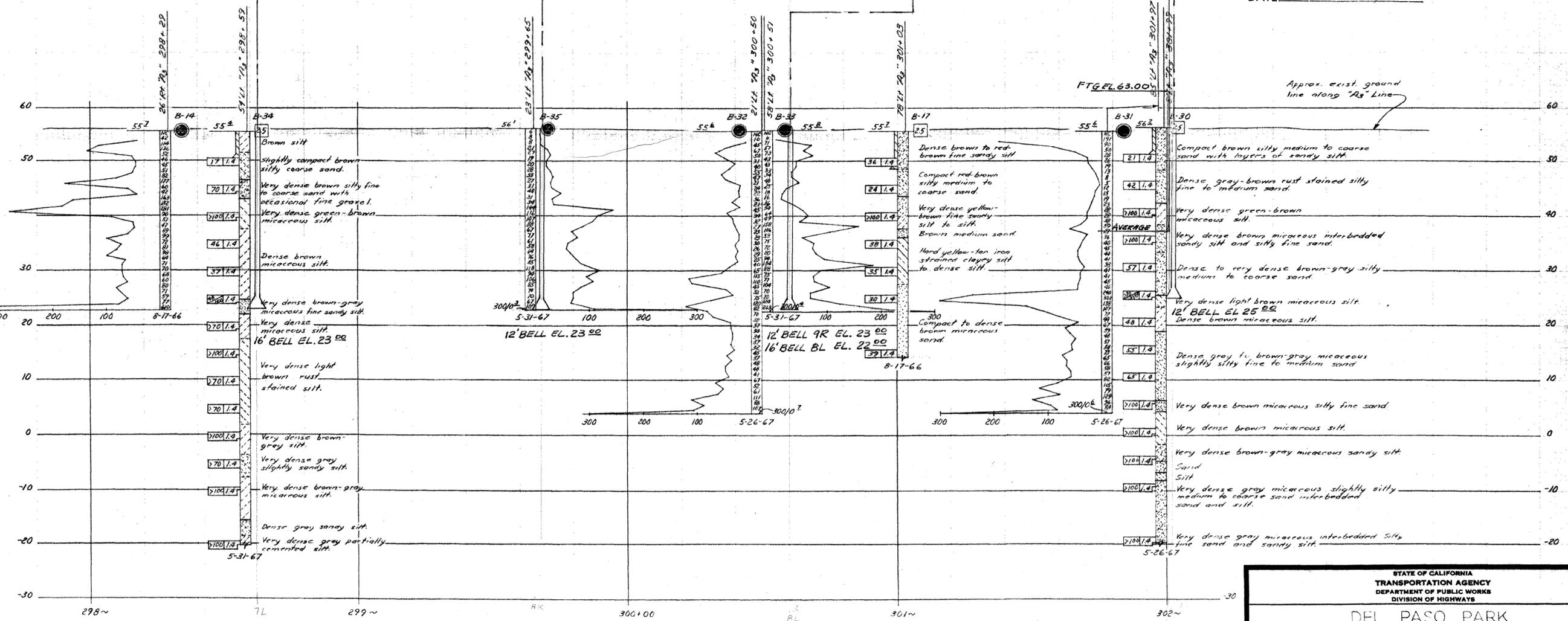
NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 03240  
EA: 379700

BRIDGE No. 24-0193L/R  
 DATE 1-12-09  
 SHEET 50 OF 54



BM "A-69"  
 T-bar between R.R. tracks: 40'  
 Rt. "A3" 696+80.2  
 Elev. 57.86



**PROFILE**  
 Scale: Horiz 1"=20'  
 Vert: 1"=10'

**AS BUILT**  
 CORRECTIONS BY G. W. Poulos  
 CONTRACT NO. 03-082734  
 DATE 3-24-69

**LEGEND OF BORING**

**24" CORE PENETROMETER**  
 No. of blows per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**24" SAMPLER BORING (SB)**  
 No. of samples per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**ROTARY BORING (RB)**  
 No. of samples per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**AUGER BORING (AB)**  
 No. of samples per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**JET BORING (JB)**  
 No. of samples per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**CORE BORING (CB)**  
 No. of samples per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**TEST PIT (TP)**  
 No. of samples per foot (N) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod) (Using a 140 lb hammer with a 2" diameter rod)

**LEGEND OF EARTH MATERIALS**

SILTY CLAY OR CLAYEY SILT  
 PEAT AND/OR ORGANIC MATTER  
 FILL MATERIAL  
 IGNEOUS ROCK  
 SEDIMENTARY ROCK  
 METAMORPHIC ROCK

GRAVEL  
 SAND  
 SILT  
 CLAY  
 SANDY CLAY OR CLAYEY SAND  
 SANDY SILT OR SILTY SAND

**CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS**

Diagram showing the basis for estimates of grade size distribution used in determining of class name. The percentages are shown in the "GRAVELLY SAND" and "SANDY SILT" areas. The terms "COARSE", "MEDIUM", and "FINE" refer to the standard grade size limits.

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA  
 TRANSPORTATION AGENCY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

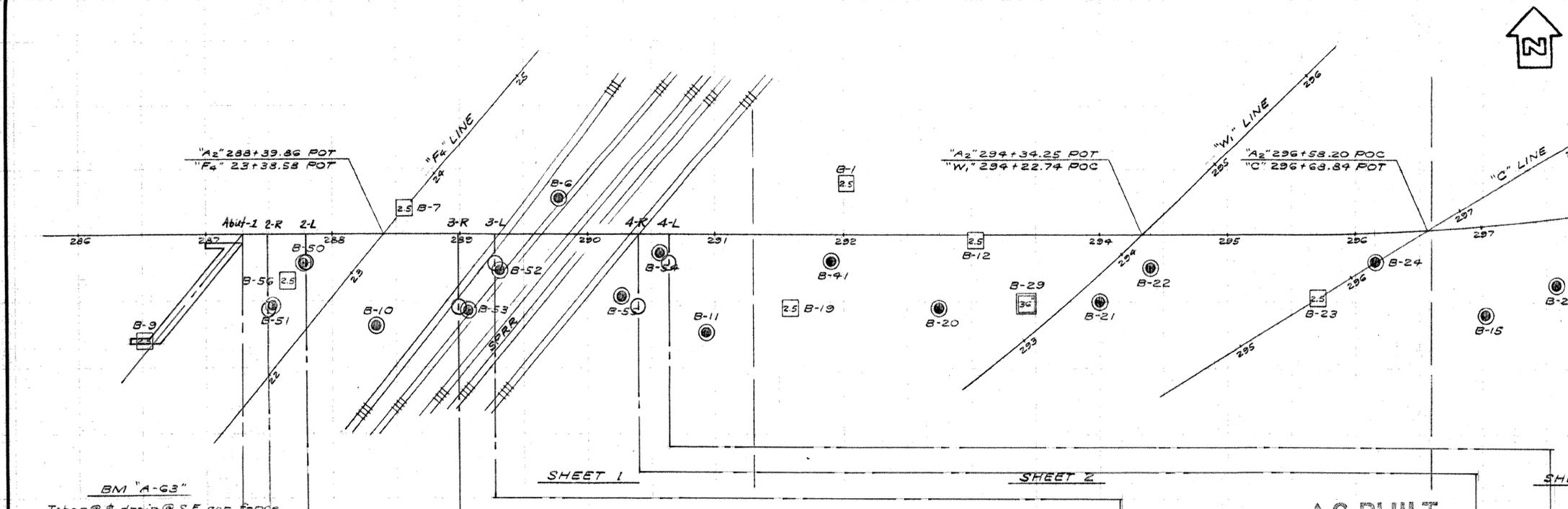
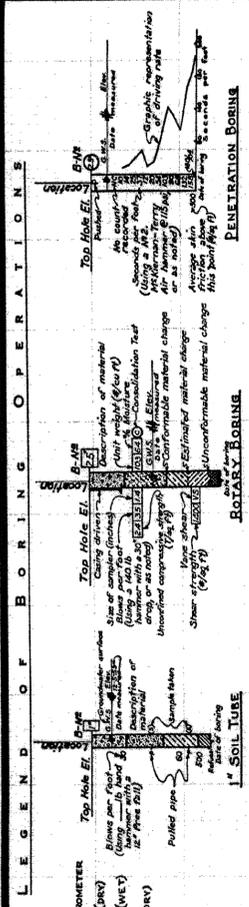
**DEL PASO PARK SEPARATION AND OVERHEAD**

**LOG OF TEST BORINGS** 3 of 3

BRIDGE NO. 24-193L  
 POST MILE 8.0  
 DRAWING NO. 24193-40  
 SHEET 28 OF 28

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	SAC	80.880	283/208, 86/90	172	254

REGISTERED CIVIL ENGINEER  
 DATE APPROVED: March 18, 1968



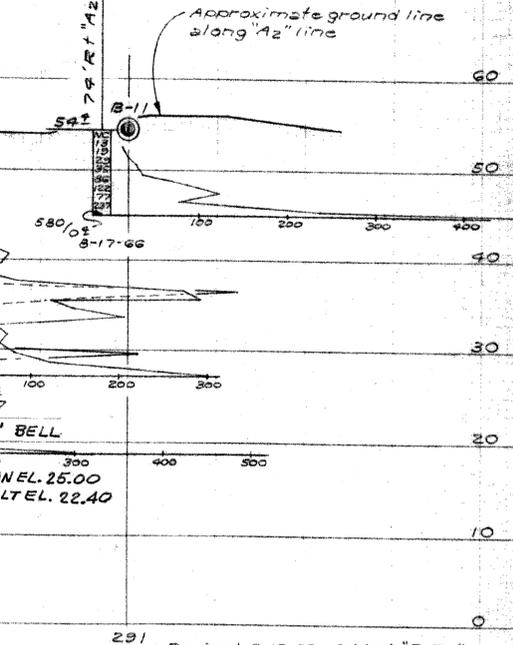
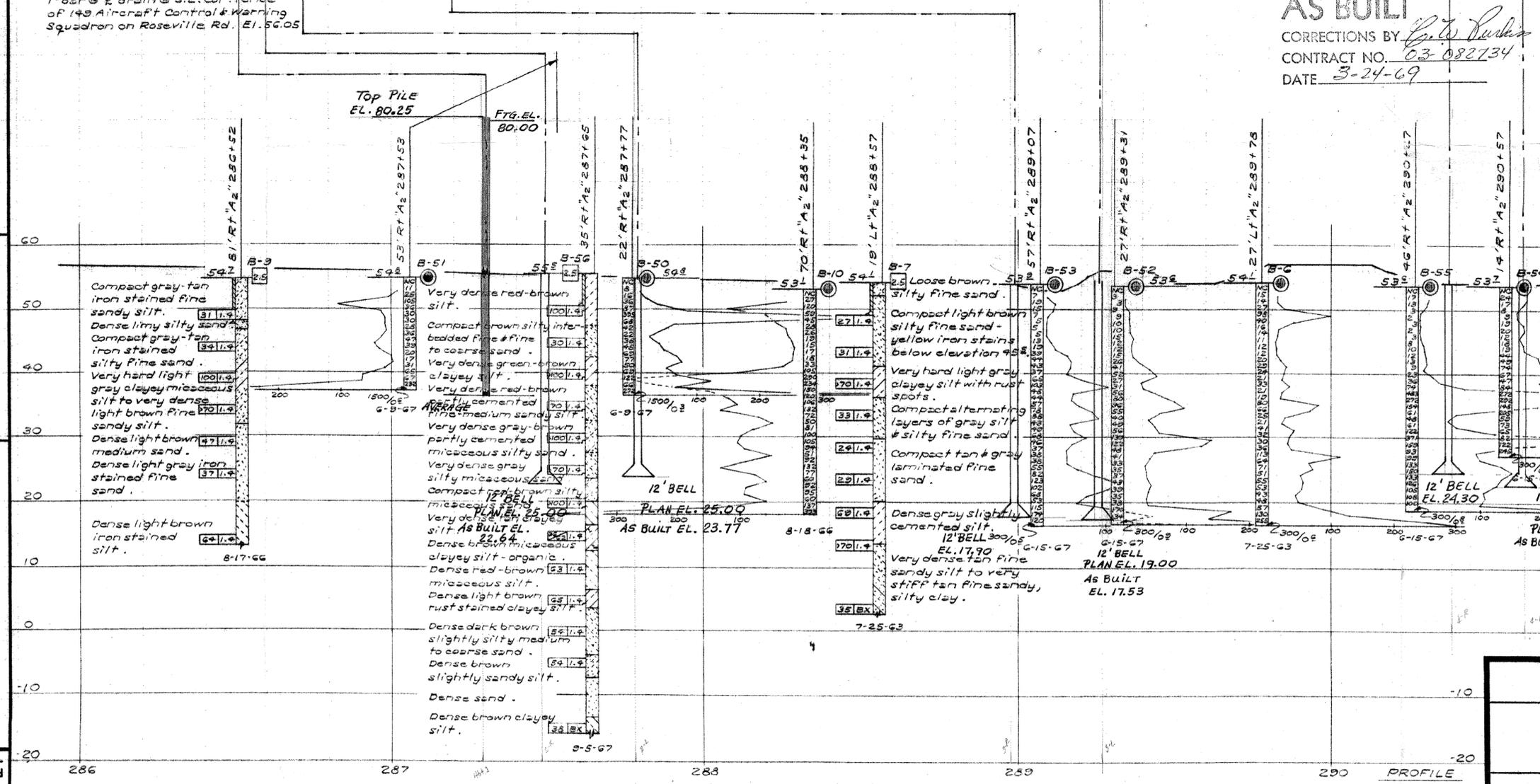
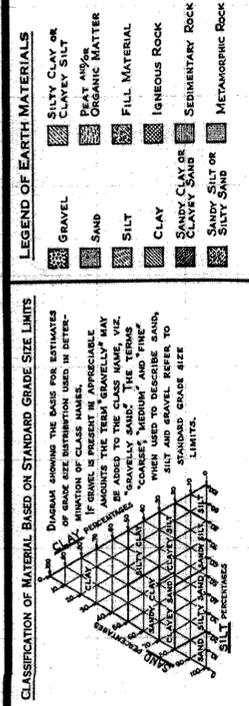
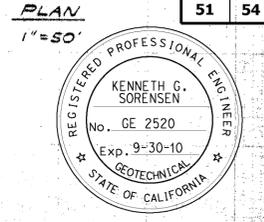
TO ACCOMPANY PLANS DATED 9-7-10  
 DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES  
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DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, M0.0/M10.4	927	1012

REGISTERED CIVIL ENGINEER  
 DATE 1-12-09

**DEL PASO PARK OVERHEAD (23)**  
 LOG OF TEST BORINGS 20 OF 23  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA  
 CU: 03240  
 EA: 379700  
 BRIDGE No. 24-0193L/R  
 Sheet of 51 54

**AS BUILT**  
 CORRECTIONS BY: *Ken G. Sorenson*  
 CONTRACT NO. 03-082734  
 DATE 3-24-69



291 Revised, 9-12-67 Added "B-56"

STATE OF CALIFORNIA  
 TRANSPORTATION AGENCY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEL PASO PARK SEPARATION AND OVERHEAD**

**LOG OF TEST BORINGS 1 of 3**

BRIDGE NO. 24-193R	POST MILE 9.0	DRAWING NO. 24/93-41	SHEET OF 24 26
REVISION DATES			(PRELIMINARY STAGE ONLY)

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

BRIDGE DEPARTMENT  
 ENGINEERING GEOLOGY SECTION

172

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	SAG	80,880	2.25/2.08, 8.6/9.2	179	254

TO ACCOMPANY PLANS DATED 9-7-10

**DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES**

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DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, M0.0/M10.4	928	1012

REGISTERED CIVIL ENGINEER  
**DEL PASO PARK OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS 21 OF 23**

1-12-09 DATE  
 1795 REGISTERED CIVIL ENGINEER NO. 1795

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 03240 BRIDGE No.  
 EA: 379700 24-0193L/R

Sheet of  
 52 54

DATE APPROVED: March 12, 1968

REGISTERED PROFESSIONAL ENGINEER  
 KENNETH G. SORENSEN  
 No. CE 2520  
 Exp. 9-30-10  
 STATE OF CALIFORNIA

**LEGEND OF BORING TYPES**

**2 1/2" CONE PENETROMETER**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone) (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**3" SAMPLER BORING (SB)**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**ROTARY BORING (RB)**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**AUER BORING (AB)**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**JET BORING (JB)**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**CORE BORING (CB)**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**TEST PIT (TP)**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**1" SOIL TUBE**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**PENETRATION BORING**  
 (Blows per foot) (Using a 140 lb hammer with 12 lb cone)

**LEGEND OF EARTH MATERIALS**

GRAVEL  
 SAND  
 SILT  
 CLAY  
 SANDY CLAY OR CLAYEY SAND  
 SILTY SAND

SILT CLAY OR CLAYEY SILT  
 SILTY CLAY  
 CLAYEY SILT  
 SILTY CLAY  
 CLAYEY SILT

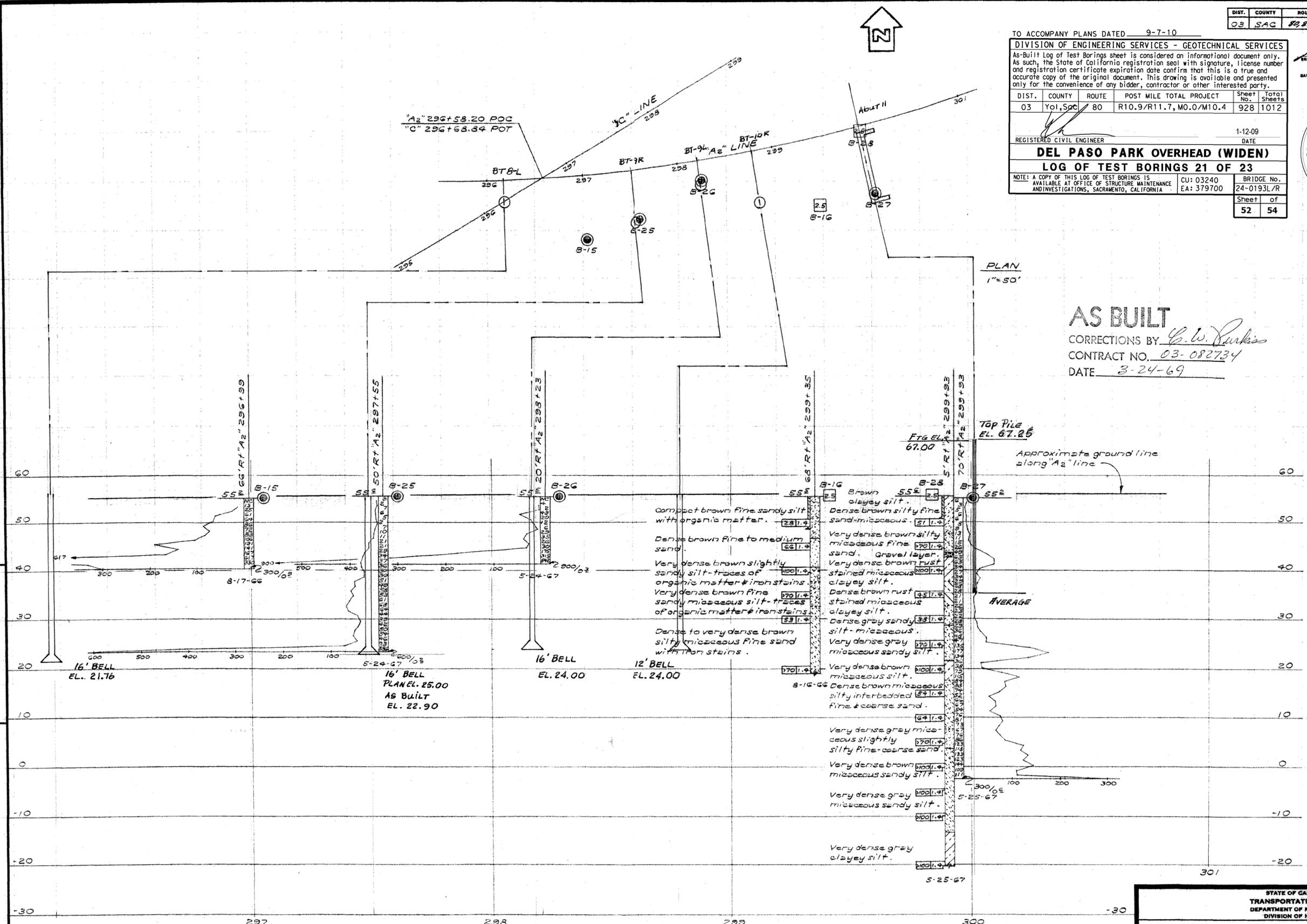
PEAT AND/OR ORGANIC MATTER  
 FILL MATERIAL  
 IGNEOUS ROCK  
 SEDIMENTARY ROCK  
 METAMORPHIC ROCK

**CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS**

Discussion showing the base for determining the size of class names. If gravel is present in appreciable amount the term "GRAVELLY" may be used. The terms "COARSE", "MEDIUM" and "FINE" are used to describe sand, silt and gravel refer to the size limits.

GRAVEL  
 SAND  
 SILT  
 CLAY  
 SANDY CLAY OR CLAYEY SAND  
 SILTY SAND  
 SILTY CLAY OR CLAYEY SILT  
 CLAYEY SILT  
 SILTY CLAY  
 CLAYEY SILT

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



**AS BUILT**  
 CORRECTIONS BY *G.W. Sorenson*  
 CONTRACT NO. 03-082734  
 DATE 3-24-69

STATE OF CALIFORNIA  
 TRANSPORTATION AGENCY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEL PASO PARK SEPARATION AND OVERHEAD**

**LOG OF TEST BORINGS 30F3**

BRIDGE NO. 24-193R	POST MILE 9.0	DRAWING NO. 24-193-43	SHEET 25	OF 26
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BRIDGE DEPARTMENT  
 ENGINEERING GEOLOGY SECTION

FILENAME => 24-01931-z-1tb21.tif

WO 082731 PR 24193-28  
 CU 08208

Disregard prints bearing earlier revision dates

REVISION DATES (PRELIMINARY STAGE ONLY)  
 1/21

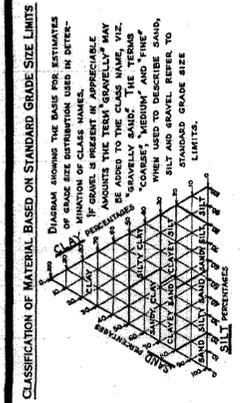
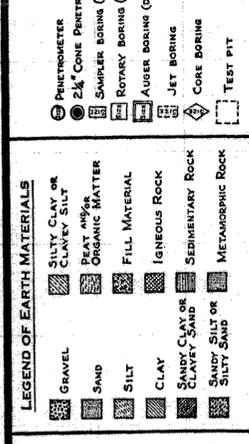
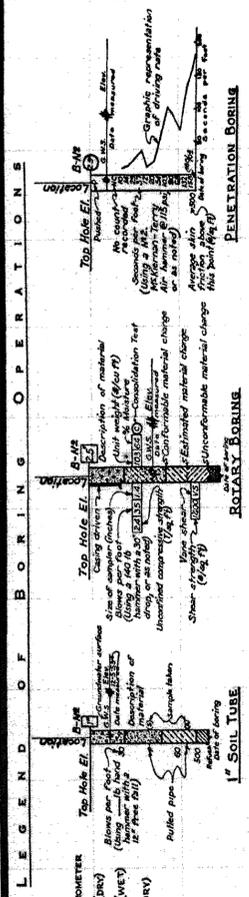
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	SAC	80,880	2.25/2.28, 26/92	174	257

REGISTERED PROFESSIONAL ENGINEER  
 KENNETH G. SORENSEN  
 No. GE 2520  
 Exp. 9-30-10  
 GEOTECHNICAL  
 STATE OF CALIFORNIA

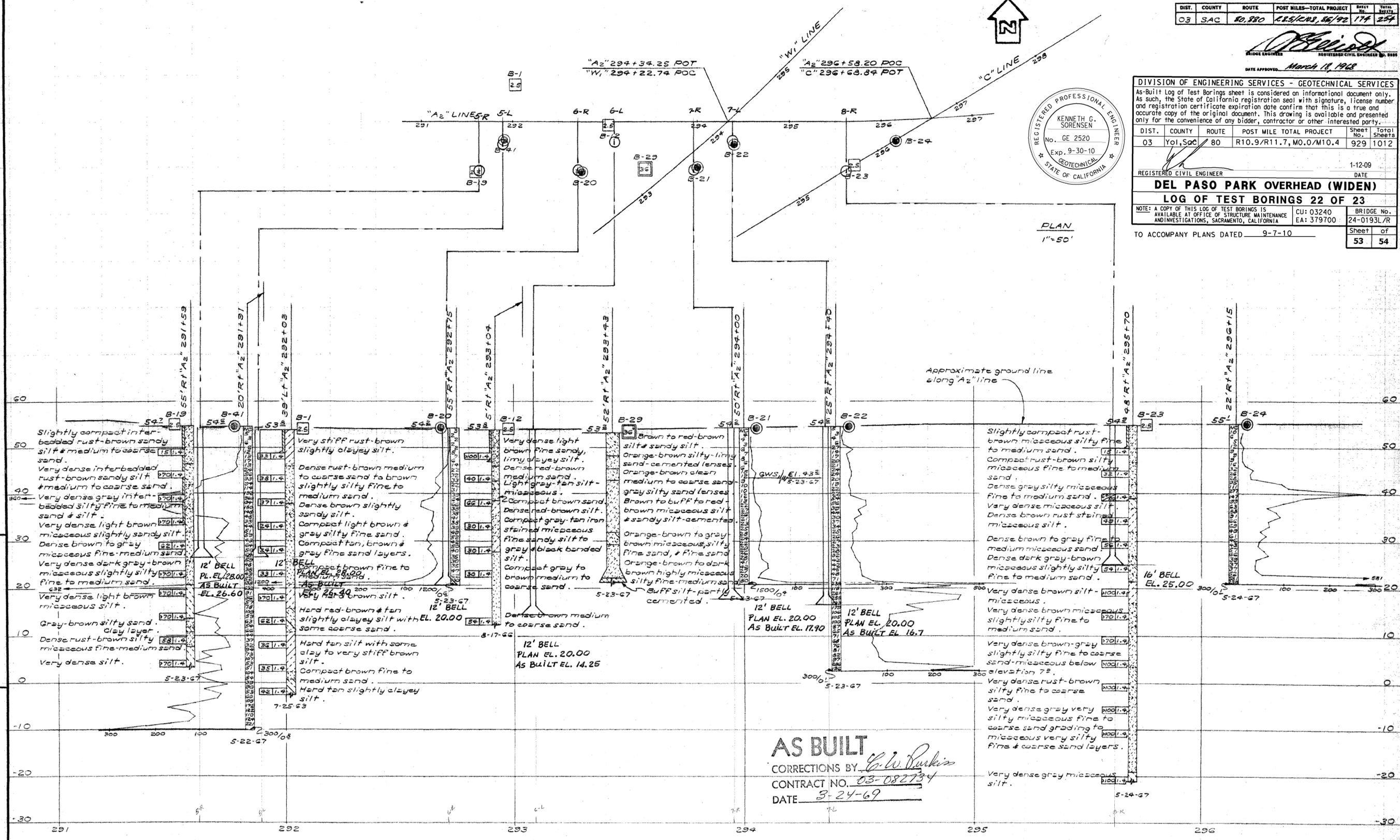
DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES  
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DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, M0.0/M10.4	929	1012

REGISTERED CIVIL ENGINEER  
 DATE 1-12-09  
**DEL PASO PARK OVERHEAD (WIDEN)**  
**LOG OF TEST BORINGS 22 OF 23**  
 NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA  
 CU: 03240  
 EA: 379700  
 BRIDGE No. 24-0193L/R  
 Sheet of 53 of 54  
 TO ACCOMPANY PLANS DATED 9-7-10



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



**AS BUILT**  
 CORRECTIONS BY *G. W. Purkin*  
 CONTRACT NO. 03-082734  
 DATE 3-24-69

**PROFILE**  
 Vert. 1"=10'  
 Horiz. 1"=20'

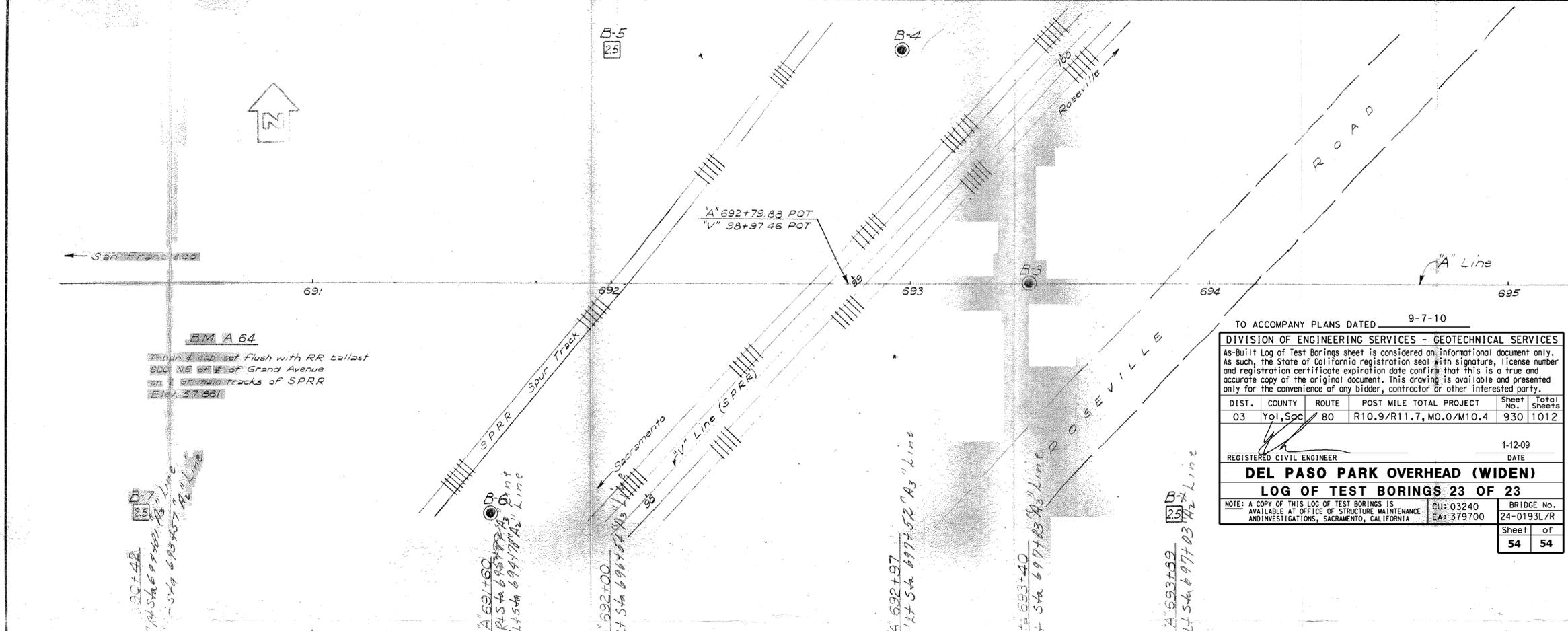
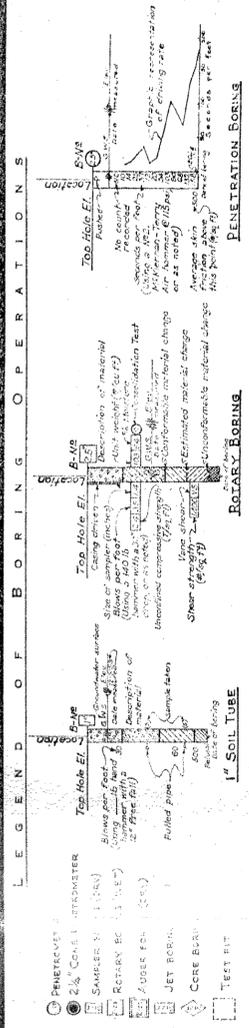
STATE OF CALIFORNIA  
 TRANSPORTATION AGENCY  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEL PASO PARK SEPARATION AND OVERHEAD**

**LOG OF TEST BORINGS 2 OF 3**

BRIDGE NO. 24-193R	POST MILE 9.0	DRAWING NO. 24193-42	SHEET OF 26 OF 26
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BRIDGE DEPARTMENT  
 ENGINEERING GEOLOGY SECTION



TO ACCOMPANY PLANS DATED 9-7-10

**DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES**

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DIST.	COUNTY	ROUTE	POST MILE TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	930	1012

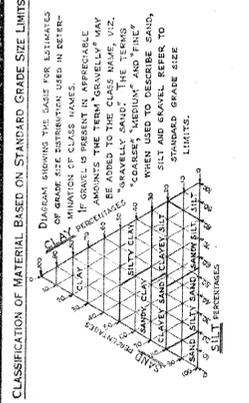
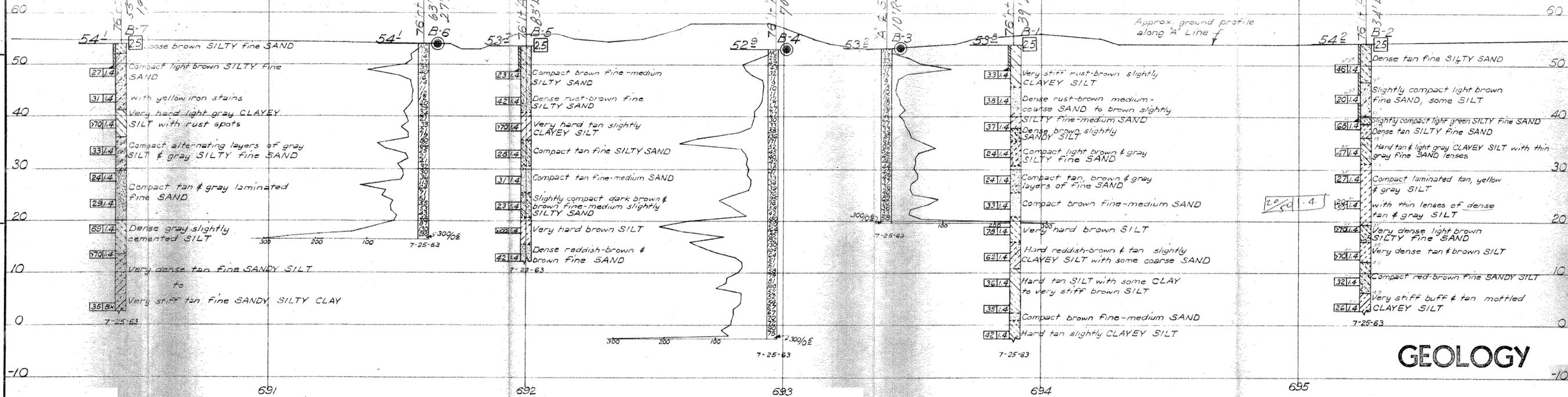
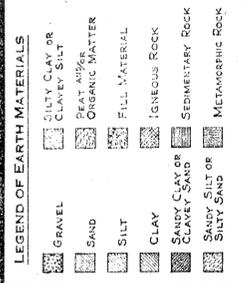
REGISTERED CIVIL ENGINEER DATE 1-12-09

**DEL PASO PARK OVERHEAD (WIDEN)**

**LOG OF TEST BORINGS 23 OF 23**

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 03240	BRIDGE No.
EA: 379700	24-0193L/R
Sheet of	54 of 54



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

**GEOLOGY**

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

**DEL PASO PARK OVERHEAD**

**LOG OF TEST BORINGS**

Horizontal: 1"=20'  
 Vertical: 1"=10'

BRIDGE 24-193 FILE DRAWING

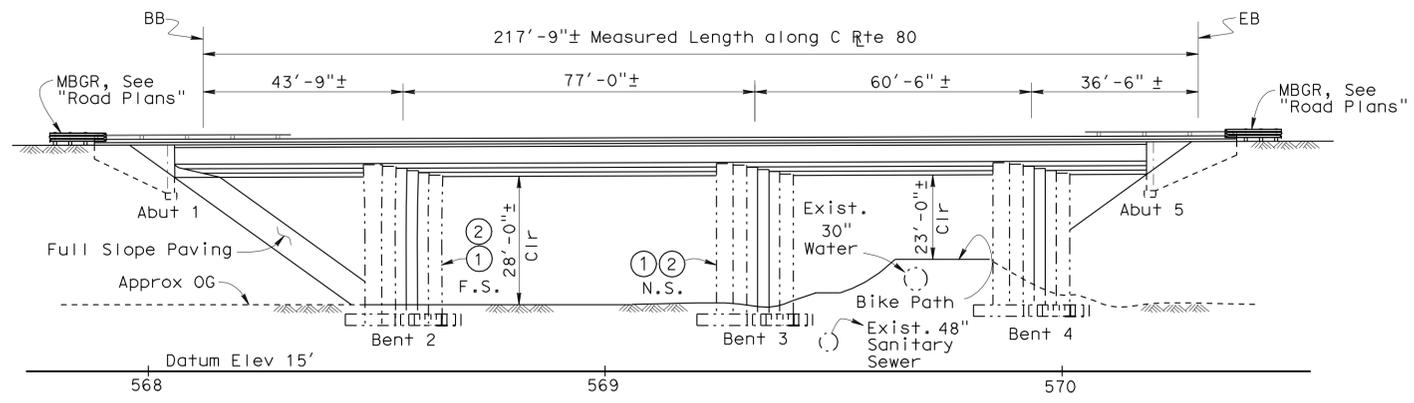
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	931	1012

Eric Watson 4/1/10  
 REGISTERED CIVIL ENGINEER DATE

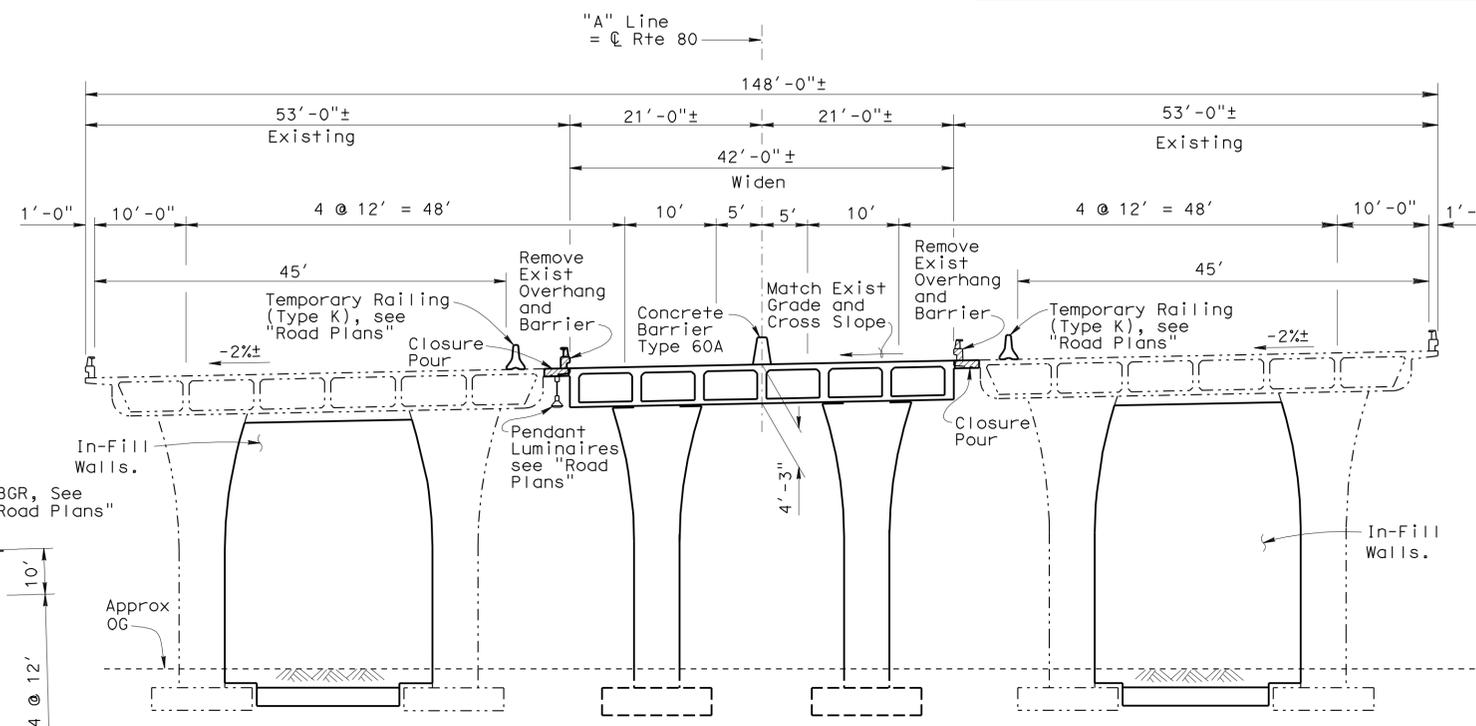
9-7-10  
 PLANS APPROVAL DATE

Eric Watson  
 No. 64273  
 Exp. 6/30/11  
 CIVIL

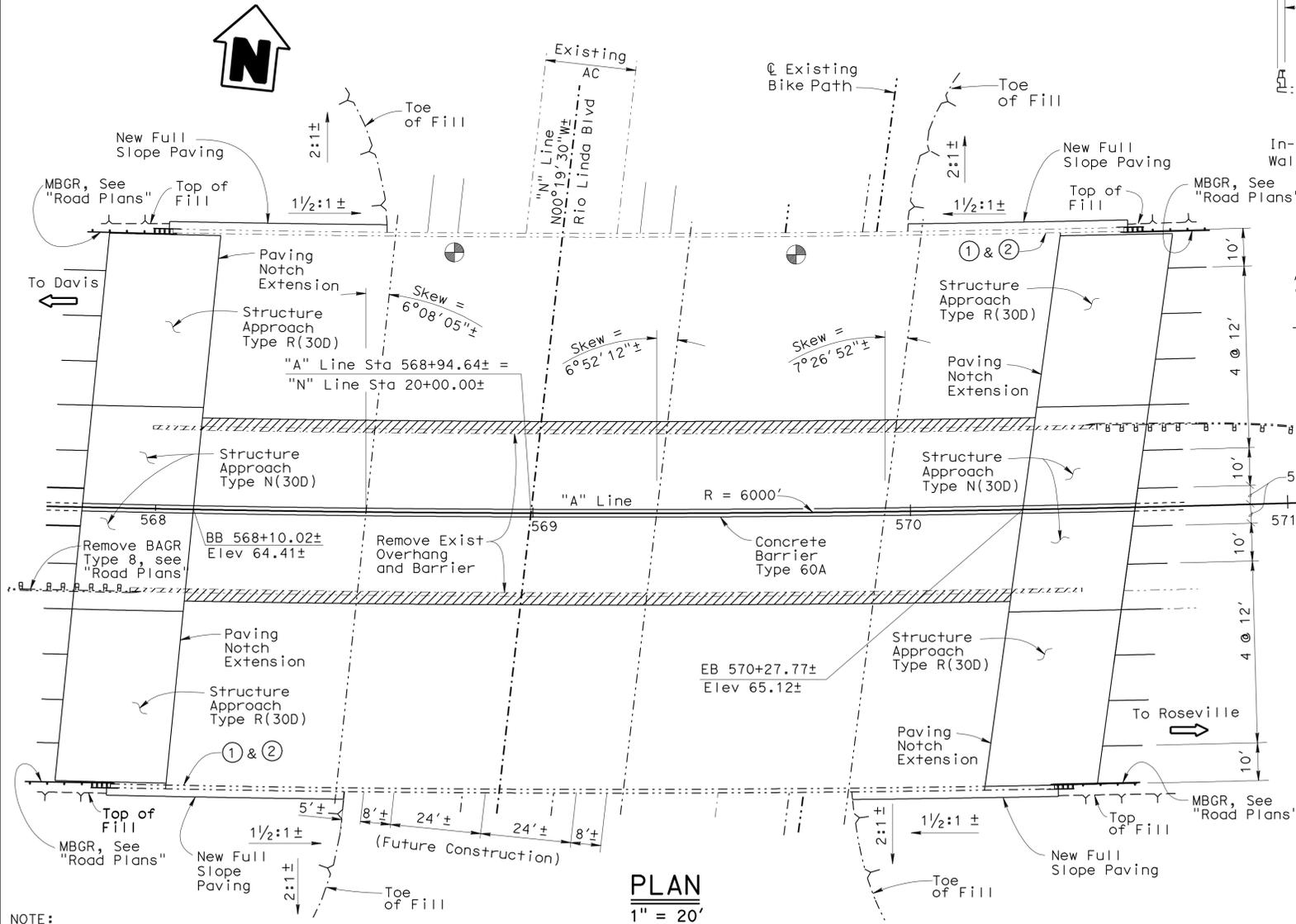
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



**ELEVATION**  
 1" = 20'



**TYPICAL SECTION**  
 1" = 10'



**PLAN**  
 1" = 20'

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

- Notes:
- ① Paint "Rio Linda Blvd Undercrossing".
  - ② Paint "Br. No. 24-0203".
- Legend:
- - - - - Existing Structure
  - ▨ Indicates limits of Bridge Removal
  - ⊕ Indicates Point of Minimum Vertical Clearance

QUANTITIES	
BRIDGE REMOVAL (PORTION), LOCATION C	LUMP SUM
STRUCTURE EXCAVATION (BRIDGE)	746 CY
STRUCTURE BACKFILL (BRIDGE)	683 CY
AGGREGATE BASE (APPROACH SLAB)	23 CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	164 CY
STRUCTURAL CONCRETE, BRIDGE	1,047 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	94 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	235 CY
PAVING NOTCH EXTENSION	151 CF
DRILL AND BOND DOWEL	616 LF
JOINT SEAL (MR 1")	293 LF
BAR REINFORCING STEEL (BRIDGE)	354,258 LB
SLOPE PAVING (CONCRETE)	154 CY
CONCRETE BARRIER (TYPE 60A)	278 LF

DESIGN	BY Huy Tran	CHECKED Yihwin Huang	LRFD DESIGN	LIVE LOADING: HL-93 w/"Low Boy"; Permit Design Vehicle
DETAILS	BY Mike Herron/Jie Tang	CHECKED Yihwin Huang	LAYOUT	BY Mark Simonsen/Huy Tran
QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak	SPECIFICATIONS	BY James Choi

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 DESIGN BRANCH 1

BRIDGE NO. 24-0203  
 POST MILE 6.6

RIO LINDA BLVD UC (WIDEN)  
 GENERAL PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	932	1012

Eric Watson 4/1/10  
 REGISTERED CIVIL ENGINEER DATE

9-7-10  
 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.

### INDEX TO PLANS

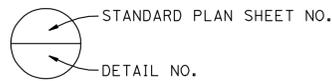
SHEET NO.	TITLE
1	GENERAL PLAN
2	INDEX TO PLANS
3	FOUNDATION PLAN
4	ABUTMENT LAYOUT
5	BENT LAYOUT
6	BENT DETAILS
7	TYPICAL SECTION
8	GIRDER LAYOUT
9	GIRDER REINFORCEMENT
10	STRUCTURE APPROACH TYPE N(30D)
11	STRUCTURE APPROACH TYPE R(30D)
12	STRUCTURE APPROACH DRAINAGE DETAILS
13	SLOPE PAVING - FULL SLOPE
14	BENT SEISMIC RETROFIT DETAILS
15	LOG OF TEST BORING 1 OF 7
16	LOG OF TEST BORING 2 OF 7
17	LOG OF TEST BORING 3 OF 7
18	LOG OF TEST BORING 4 OF 7
19	LOG OF TEST BORING 5 OF 7
20	LOG OF TEST BORING 6 OF 7
21	LOG OF TEST BORING 7 OF 7

### GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

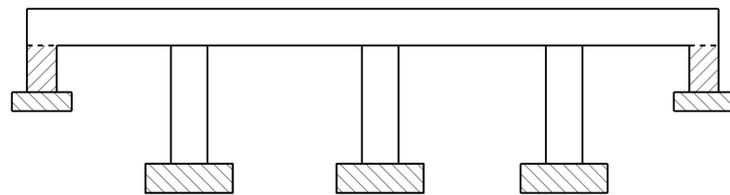
DESIGN: AASHTO LRFD Specifications, Third Edition with the 2006 Interim Revisions and Caltrans Amendments(blue sheets) v 0.06  
 SEISMIC DESIGN: Caltrans Seismic Design Criteria(SDC), Version 1.4 June 2006  
 DEAD LOAD: Includes 35 psf for future wearing surface  
 LIVE LOADING: HL 93 and permit design vehicle  
 SEISMIC LOADING: Site specific Acceleration Response Spectra curve  
 REINFORCED CONCRETE:  $f_y = 60$  ksi  
 $f'_c = 4.0$  ksi,  $n = 8$   
 $f'_c = 3.6$  ksi,  $n = 8$   
 Working Stress Design  
 $f_s = 20$  ksi  
 $f_c = 1.2$  ksi  
 $n = 10$

### STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS 1 OF 2
A10B	ACRONYMS AND ABBREVIATIONS 2 OF 2
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B6-21	JOINT SEALS (Maximum Movement Rating = 2")
B7-1	BOX GIRDER DETAILS



Support Location	Working Stress Design (ESD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	Service Permissible Net Contact Stress (Settlement) (ksf)	Strength Factored Gross Nominal Bearing Resistance $\phi=0.45$ (ksf)	Extreme Event Factored Gross Nominal Bearing Resistance $\phi=1.00$ (ksf)
Abut 1	3.6	3.5	N/A	N/A	N/A
Bent 2	N/A	N/A	7.0	15.0	34.0
Bent 3	N/A	N/A	7.0	15.0	34.0
Bent 4	N/A	N/A	7.0	15.0	34.0
Abut 5	3.6	3.5	N/A	N/A	N/A

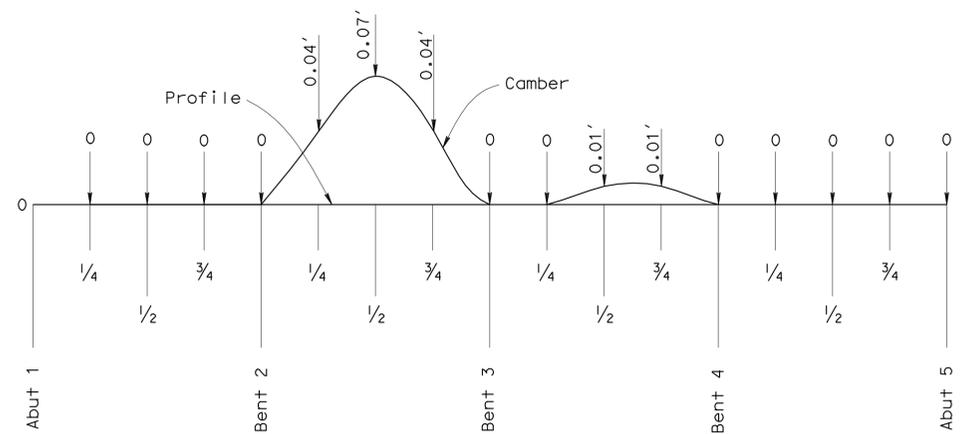


- Structural Concrete, Bridge (4.0 ksi @ 28 Days)
- Structural Concrete Bridge
- Structural Concrete Bridge Footing

### CONCRETE STRENGTH AND TYPE LIMITS

No Scale

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



Does not include allowance for falsework settlement.

### CAMBER DIAGRAM

DESIGN	BY Huy Tran	CHECKED Yihwin Huang
DETAILS	BY Bob Huddleston	CHECKED Yihwin Huang
QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 DESIGN BRANCH 1

BRIDGE NO.  
 24-0203  
 POST MILE  
 6.6

RIO LINDA BLVD UC (WIDEN)

INDEX TO PLANS

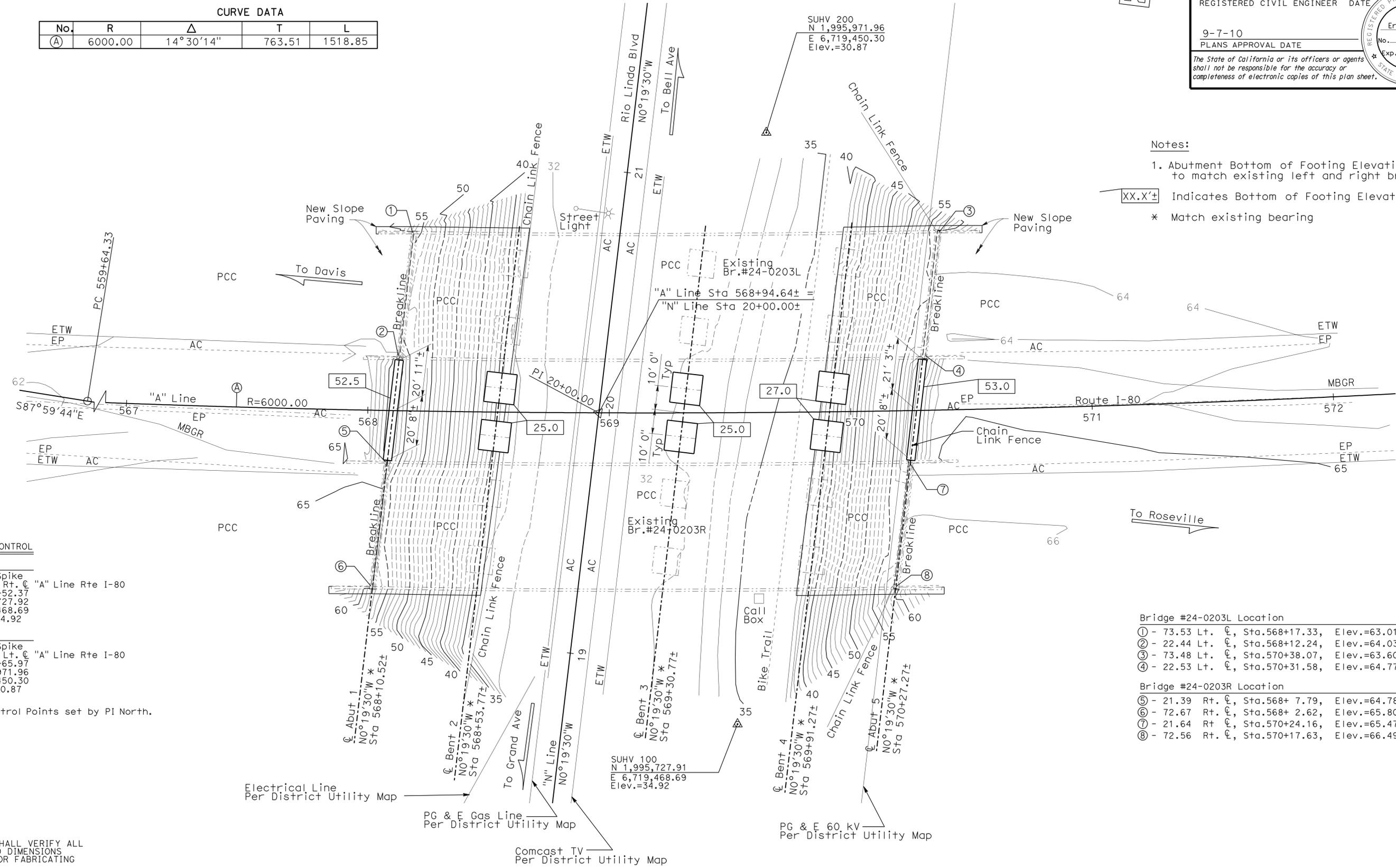
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	933	1012

Eric Watson		4/1/10
REGISTERED CIVIL ENGINEER		DATE
9-7-10		PLANS APPROVAL DATE
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Eric Watson  
 No. 64273  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

No.	R	Δ	T	L
(A)	6000.00	14° 30' 14"	763.51	1518.85



- Notes:**
- Abutment Bottom of Footing Elevations to match existing left and right bridges.
- XX.X'± Indicates Bottom of Footing Elevations
- \* Match existing bearing

**SURVEY CONTROL**

**SUHV 100**  
 Fnd 1" Spike  
 128.71Ft Rt. C "A" Line Rte I-80  
 Sta. 569+52.37  
 N 1,995,727.92  
 E 6,719,468.69  
 Elev. = 34.92

**SUHV 200**  
 Fnd 1" Spike  
 115.66Ft Lt. C "A" Line Rte I-80  
 Sta. 569+65.97  
 N 1,995,971.96  
 E 6,719,450.30  
 Elev. = 30.87

Note: Control Points set by PI North.

**Bridge #24-0203L Location**

①	73.53 Lt. C, Sta. 568+17.33, Elev. = 63.01 ±
②	22.44 Lt. C, Sta. 568+12.24, Elev. = 64.03 ±
③	73.48 Lt. C, Sta. 570+38.07, Elev. = 63.60 ±
④	22.53 Lt. C, Sta. 570+31.58, Elev. = 64.77 ±

**Bridge #24-0203R Location**

⑤	21.39 Rt. C, Sta. 568+ 7.79, Elev. = 64.78 ±
⑥	72.67 Rt. C, Sta. 568+ 2.62, Elev. = 65.80 ±
⑦	21.64 Rt C, Sta. 570+24.16, Elev. = 65.47 ±
⑧	72.56 Rt. C, Sta. 570+17.63, Elev. = 66.49 ±

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

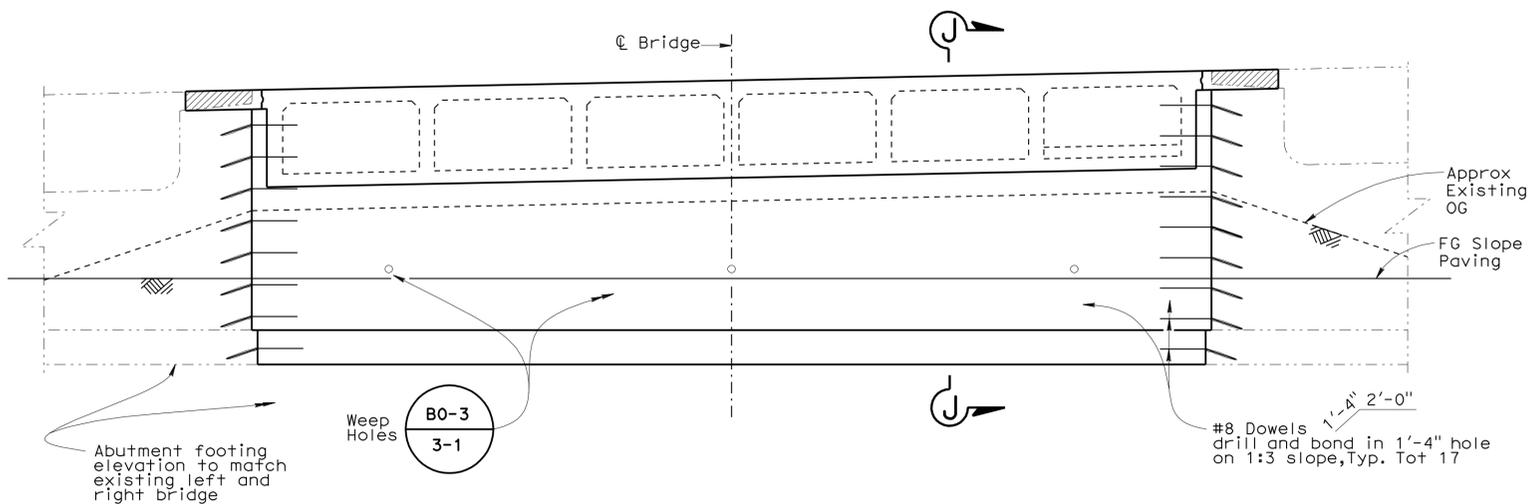
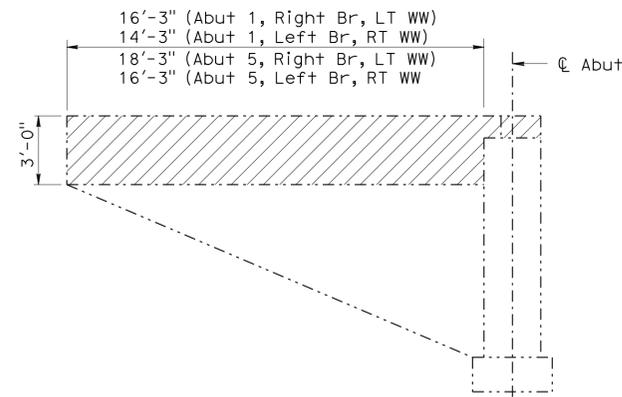
<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY Huy Tran	CHECKED Yinwin Huang	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO. 24-0203	<b>RIO LINDA BLVD UC (WIDEN)</b> FOUNDATION PLAN	
SCALE 1"=20'	VERT. DATUM NGVD29	PHOTOGRAMMETRY AS OF: X	DETAILS BY Bob Huddleston	CHECKED Yinwin Huang	POST MILE 6.6					
ALIGNMENT TIES Dist. Traverse Sheet	SURVEYED BY District/E. Lopez	CHECKED BY E. Lopez 05/2007	QUANTITIES BY Bob Huddleston	CHECKED Vadim Shostak						
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 3 OF 21

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:25

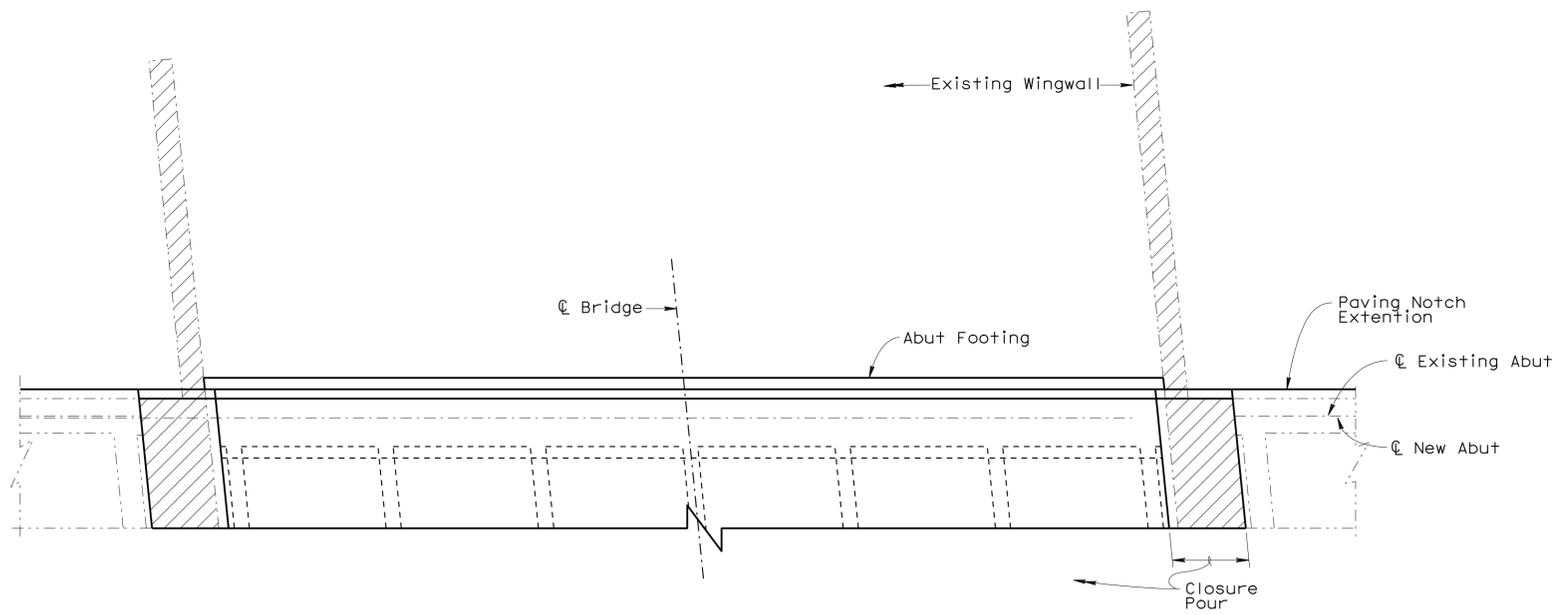
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03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	934	1012

Eric Watson 4/1/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
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Eric Watson	REGISTERED PROFESSIONAL ENGINEER
No. 64273	
Exp. 6/30/11	
CIVIL	STATE OF CALIFORNIA



**ABUTMENT ELEVATION**  
1/4" = 1'-0"

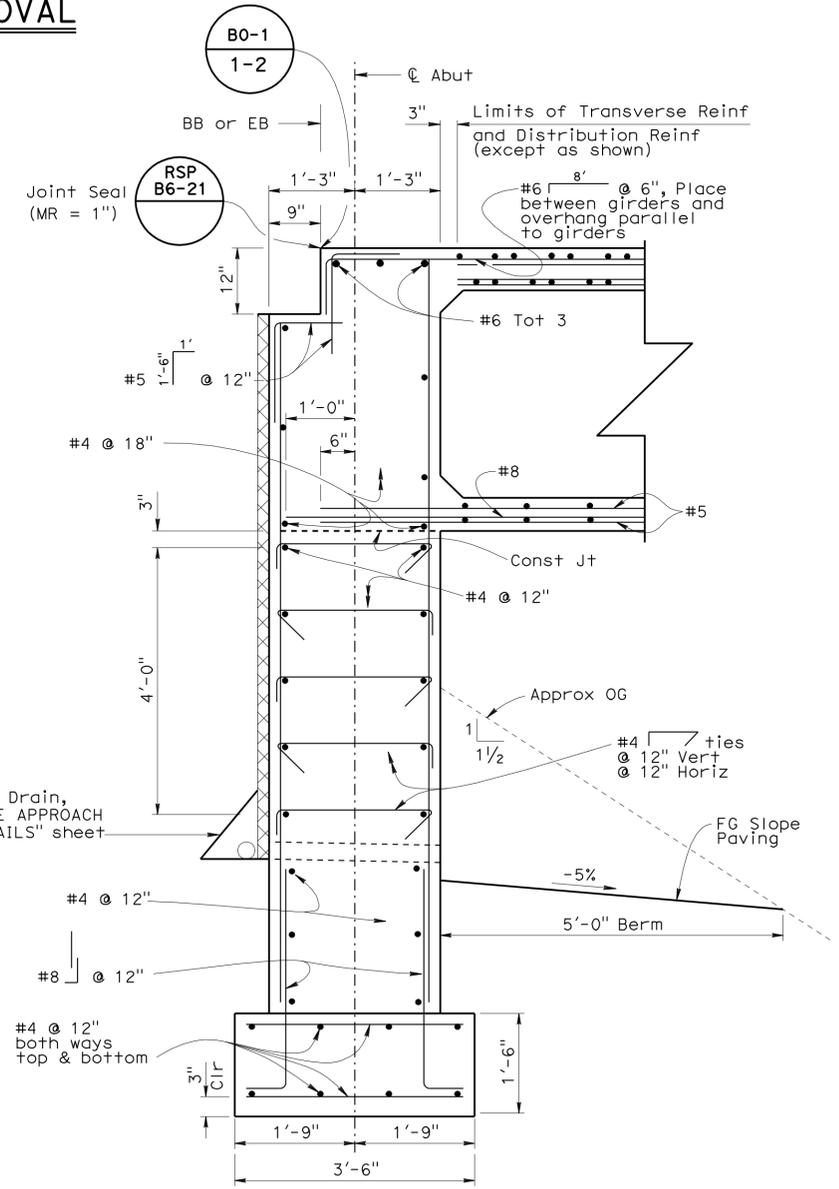


**ABUTMENT PLAN**  
1/4" = 1'-0"

Note:  
Abutment 1 shown, Abutment 5 similar.

Legend:  
 - Indicates Bridge Removal  
 - Indicates Existing Structure

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

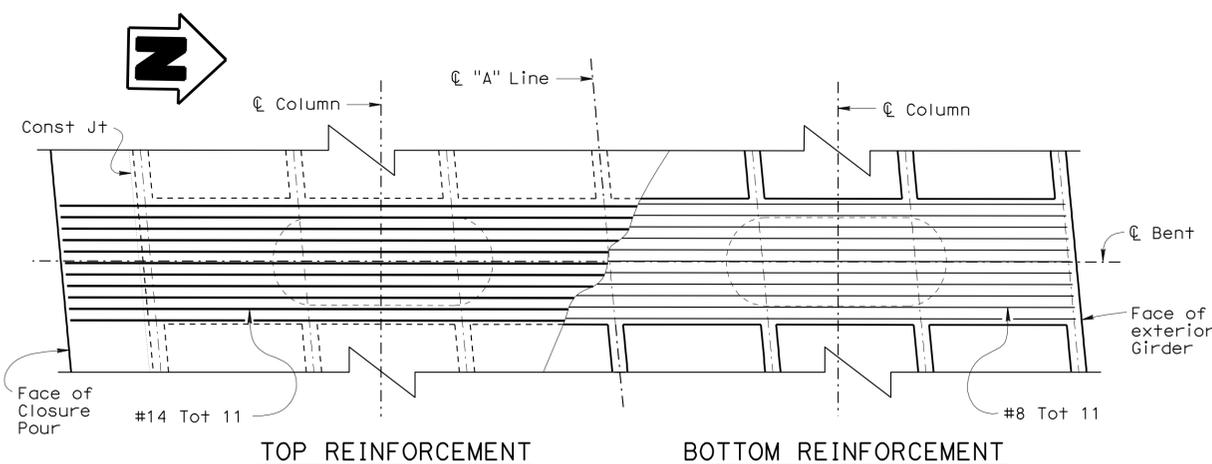


**SECTION J-J**  
3/4" = 1'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Huy Tran	CHECKED Yihwin Huang	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO.	24-0203	<b>RIO LINDA BLVD UC (WIDEN)</b> <b>ABUTMENT LAYOUT</b>
	DETAILS	BY Bob Huddleston	CHECKED Yihwin Huang			POST MILE	6.6	
	QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak			CU 03 EA 3797U1	REVISION DATES	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	FILE => 24-0203-f-a01_lo01.dgn	DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 4 OF 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	935	1012
			Eric Watson	4/1/10	
			REGISTERED CIVIL ENGINEER	DATE	
			9-7-10		
			PLANS APPROVAL DATE		
			Eric Watson	No. 64273	
			Exp. 6/30/11		
			CIVIL		
<small>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.</small>					

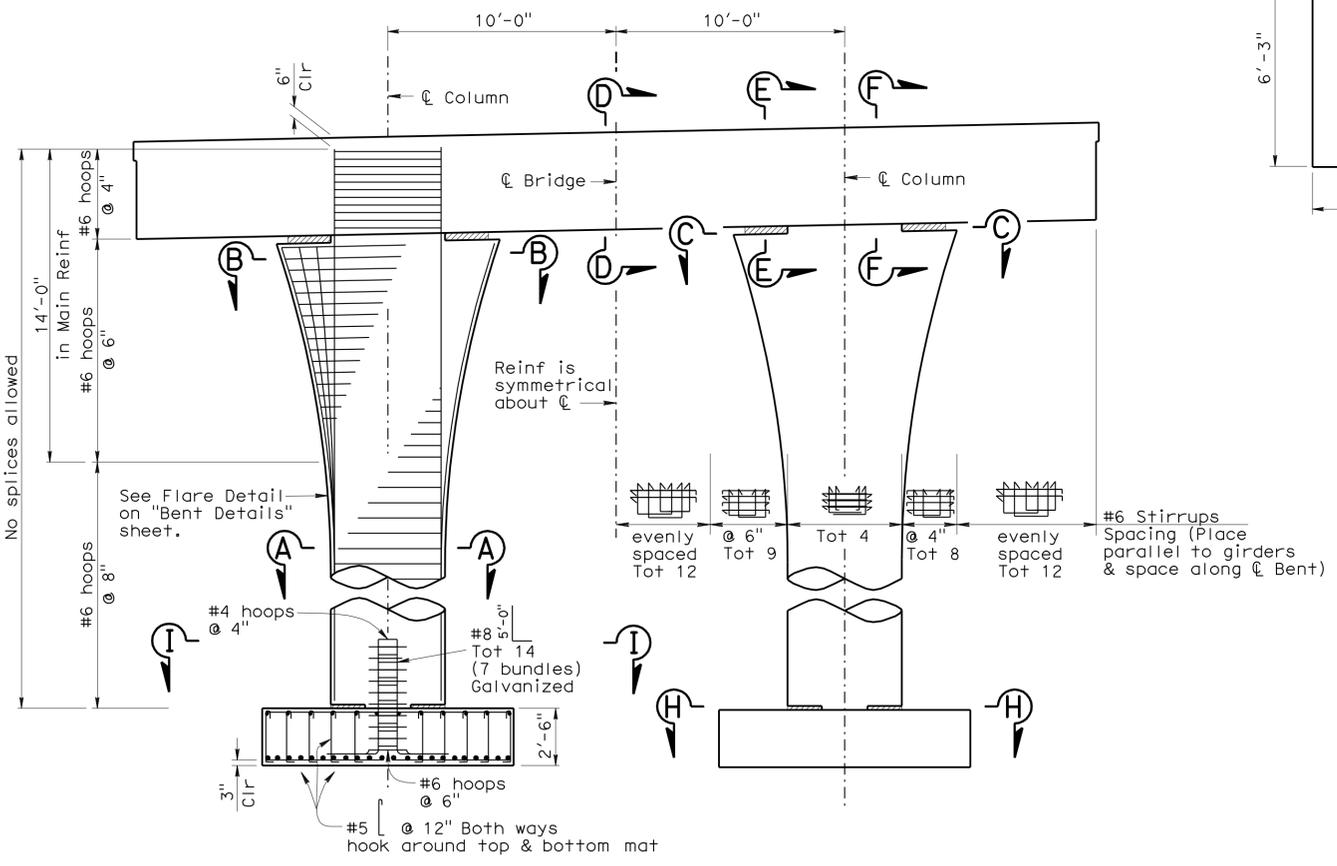
- Notes:
- No splices are allowed in Main Bent Cap Reinf.
  - For Sections A-A, B-B, C-C, H-H & I-I, see "Bent Details" sheet.



TOP REINFORCEMENT  
BOTTOM REINFORCEMENT

**PLAN**

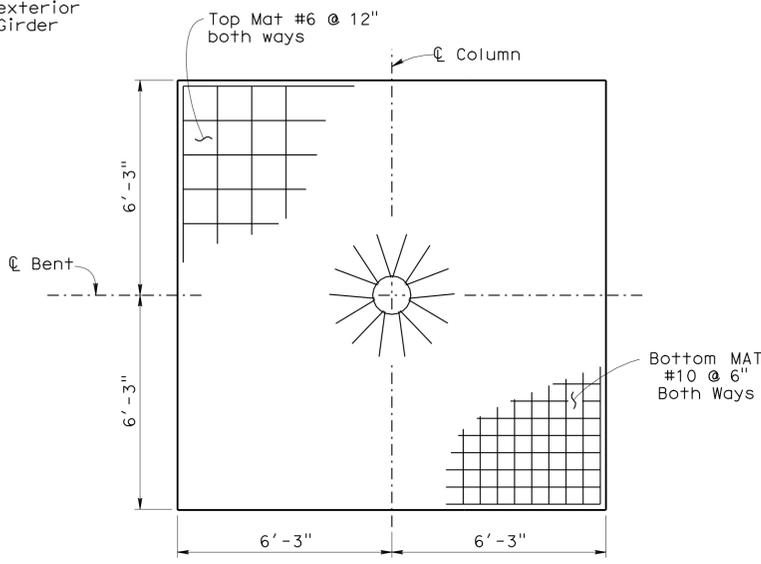
1/4" = 1'-0"



**ELEVATION**

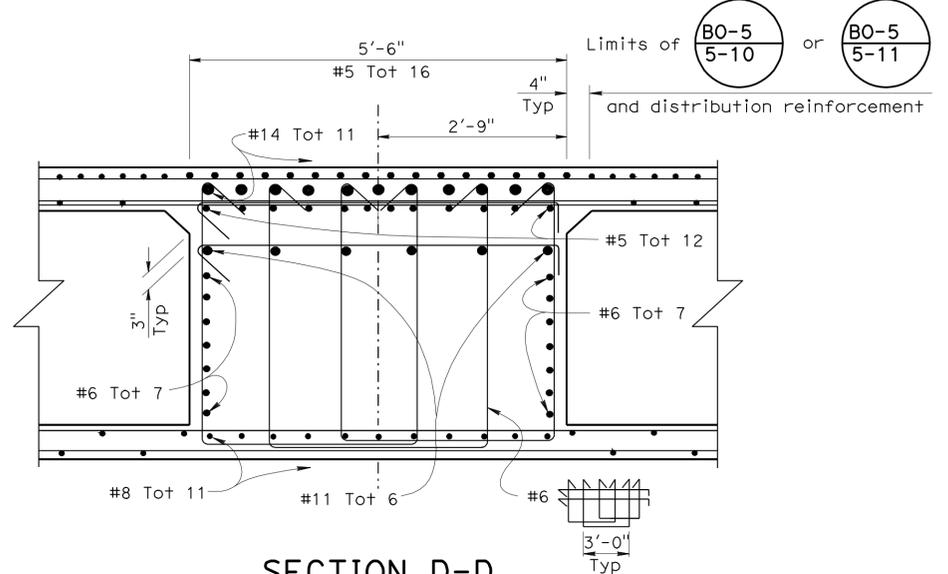
1/4" = 1'-0"

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



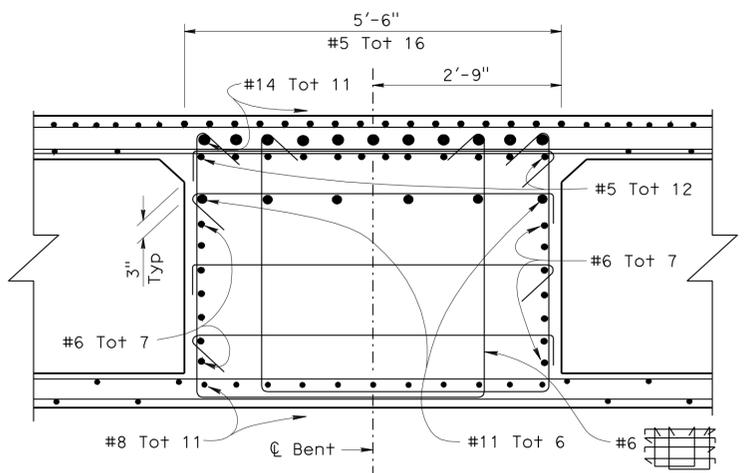
**FOOTING PLAN**

3/8" = 1'-0"



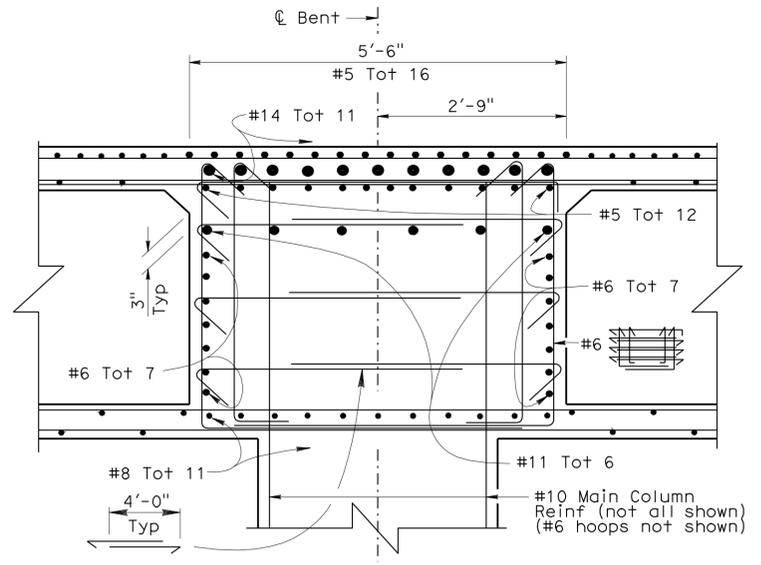
**SECTION D-D**

3/4" = 1'-0"



**SECTION E-E**

3/4" = 1'-0"



**SECTION F-F**

3/4" = 1'-0"

DESIGN	BY Huy Tran	CHECKED Yihwin Huang
DETAILS	BY Bob Huddleston	CHECKED Yihwin Huang
QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

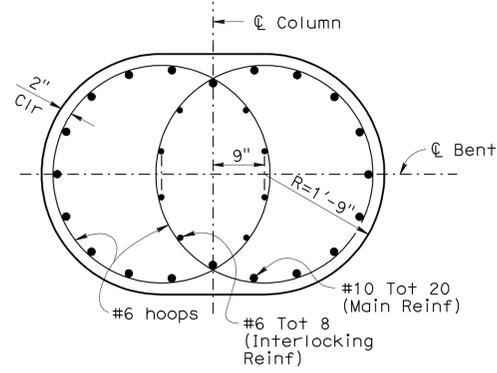
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.	24-0203
POST MILE	6.6

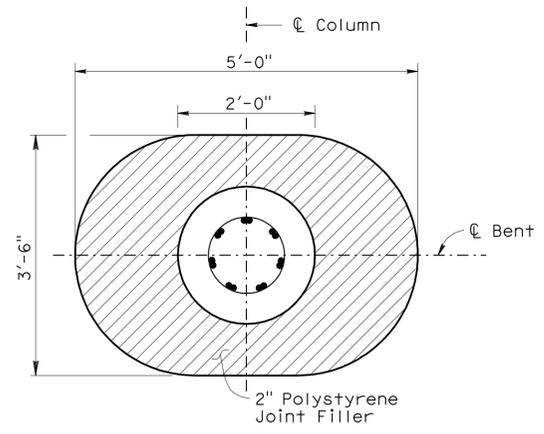
RIO LINDA BLVD UC (WIDEN)  
BENT LAYOUT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	936	1012
Eric Watson			4/1/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6/30/11		
CIVIL			STATE OF CALIFORNIA		
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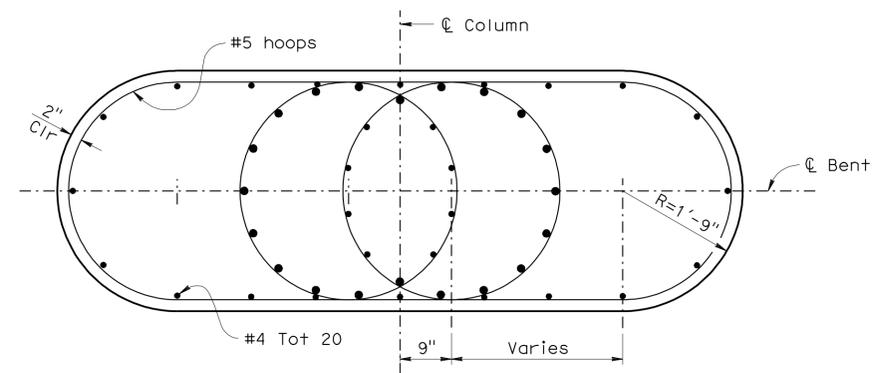
Notes:  
 1. For locations of Sections A-A, B-B, C-C, H-H & I-I, see "Bent Layout" sheet.  
 [Hatched Area] - Indicates Polystyrene Joint Filler



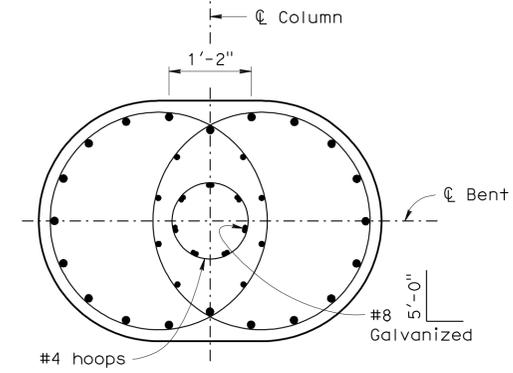
**SECTION A-A**  
 $\frac{3}{4}'' = 1'-0''$



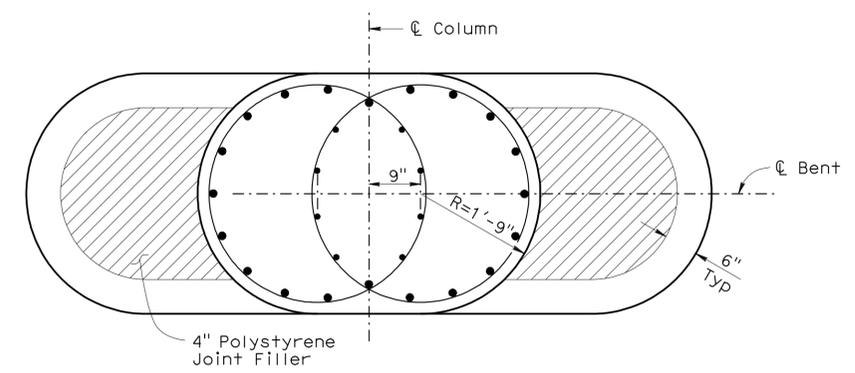
**SECTION H-H**  
 $\frac{3}{4}'' = 1'-0''$



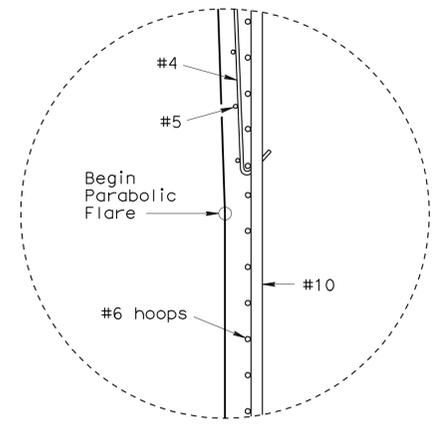
**SECTION B-B**  
 $\frac{3}{4}'' = 1'-0''$



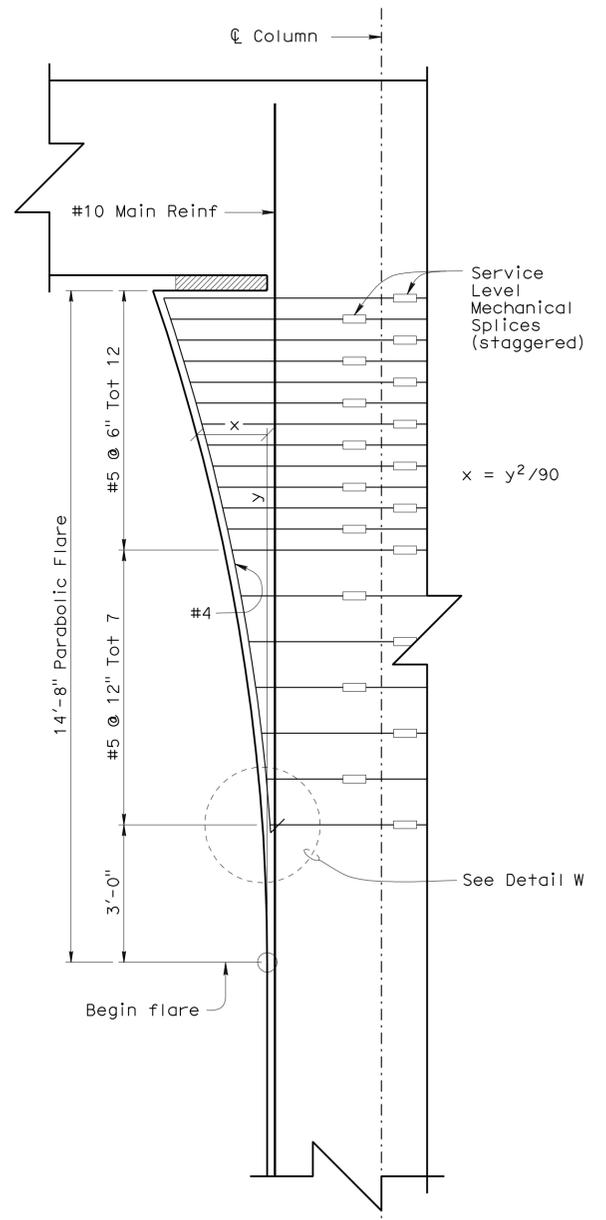
**SECTION I-I**  
 $\frac{3}{4}'' = 1'-0''$



**SECTION C-C**  
 $\frac{3}{4}'' = 1'-0''$



**DETAIL W**  
 NO SCALE



**FLARE DETAIL**  
 $\frac{1}{2}'' = 1'-0''$

NOTE:  
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DESIGN	BY Huy Tran	CHECKED Yihwin Huang
DETAILS	BY Bob Huddleston	CHECKED Yihwin Huang
QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

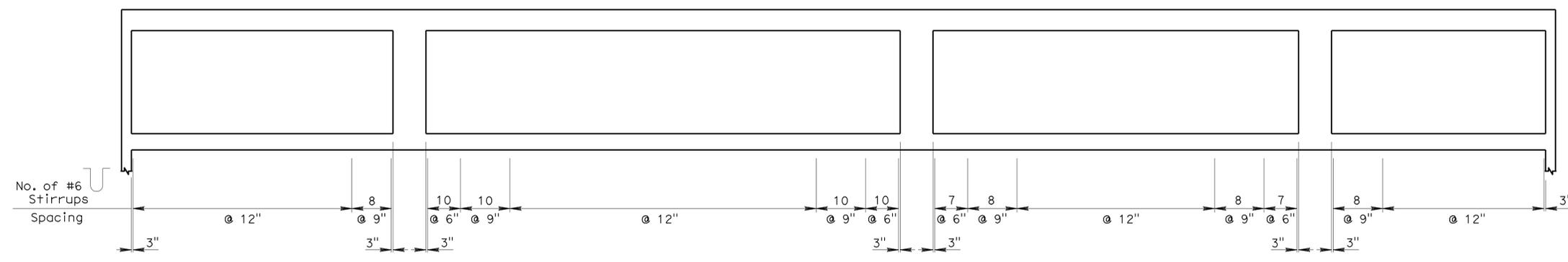
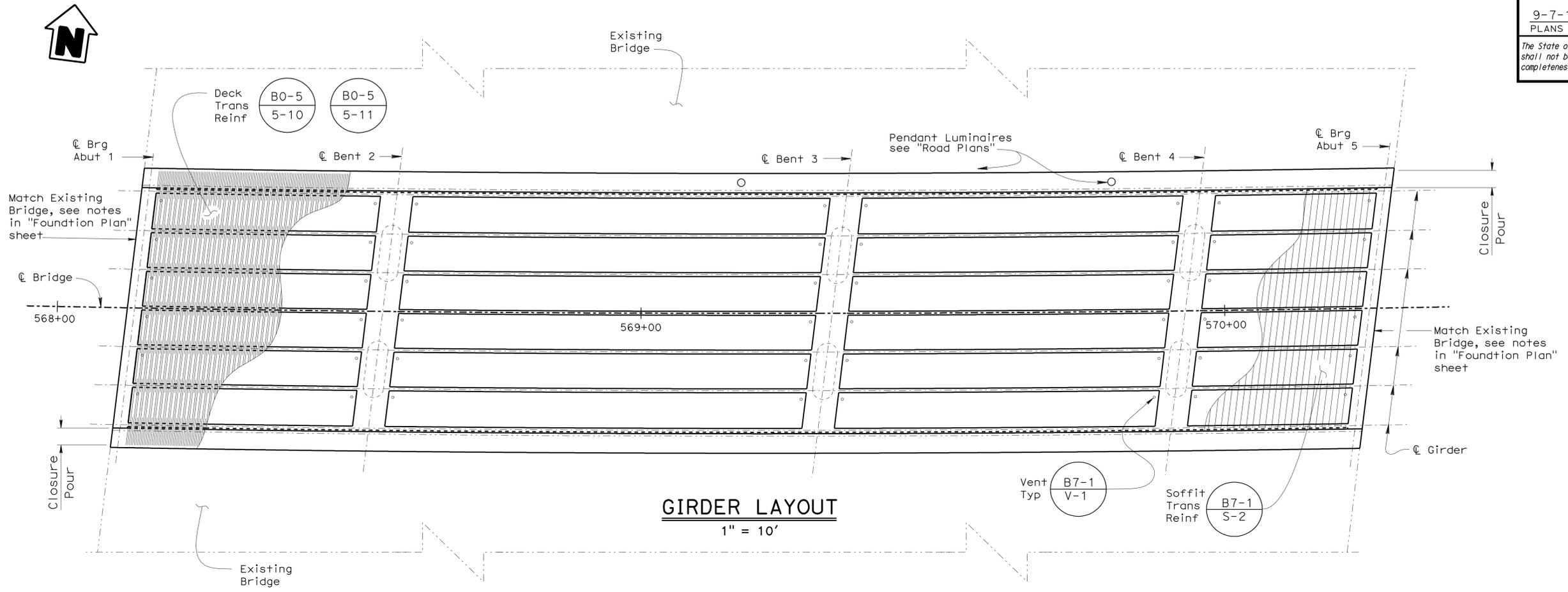
DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO.	24-0203
POST MILE	6.6

RIO LINDA BLVD UC (WIDEN)  
**BENT DETAILS**



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	938	1012
			Eric Watson	4/5/10	
			REGISTERED CIVIL ENGINEER	DATE	
			9-7-10		
			PLANS APPROVAL DATE		
			Eric Watson		
			No. 64273		
			Exp. 6/30/11		
			CIVIL		
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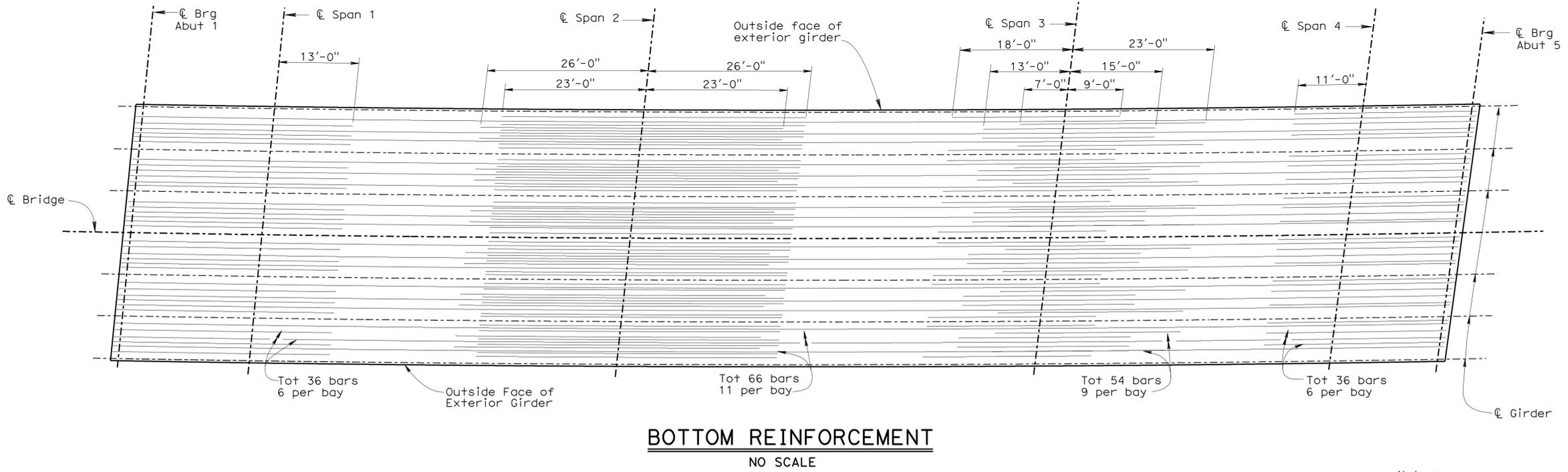
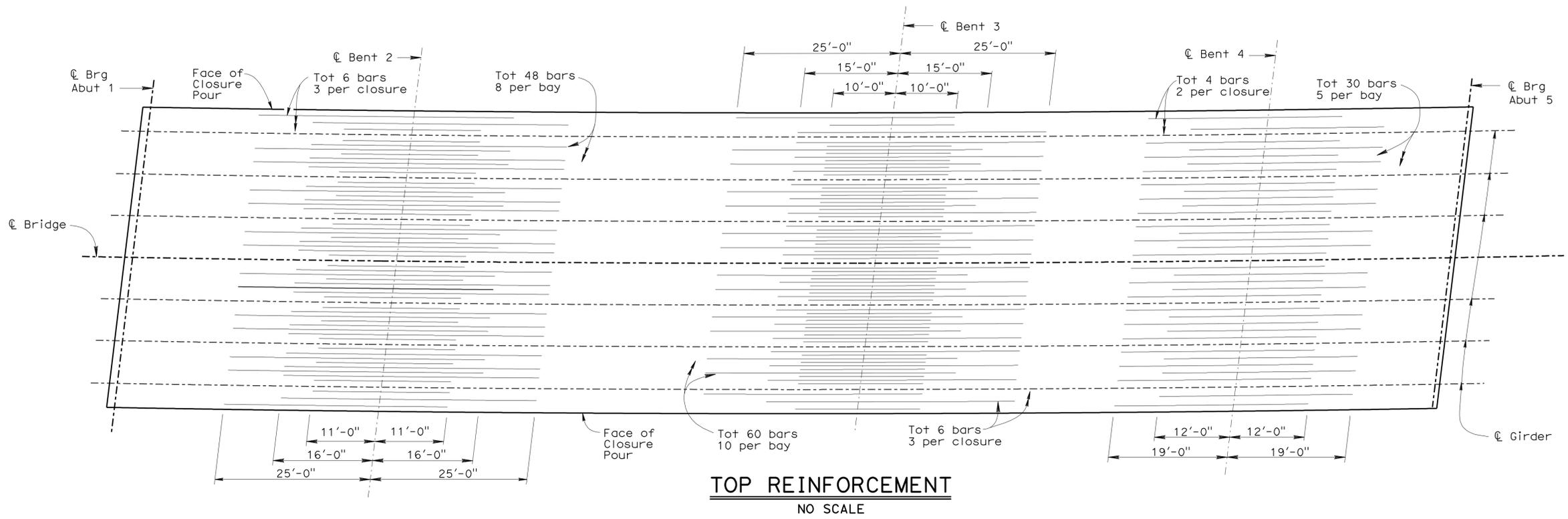


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STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Huy Tran	CHECKED Yihwin Huang	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	RIO LINDA BLVD UC (WIDEN)						
	DETAILS	BY Bob Huddleston	CHECKED Yihwin Huang			24-0203	GIRDER LAYOUT						
	QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak			POST MILE	6.6						
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 03 EA 3797U1	REVISION DATES				SHEET 8 OF 21		
						DISREGARD PRINTS BEARING EARLIER REVISION DATES				08-04-07 10-14-07 10-14-07 11-25-08 12-18-08 04-24-09 05-21-09 04/05/10			

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	939	1012

Eric Watson 4/5/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
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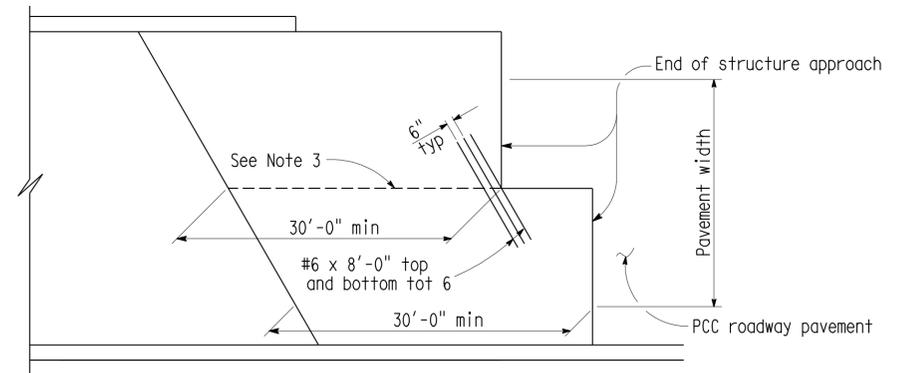
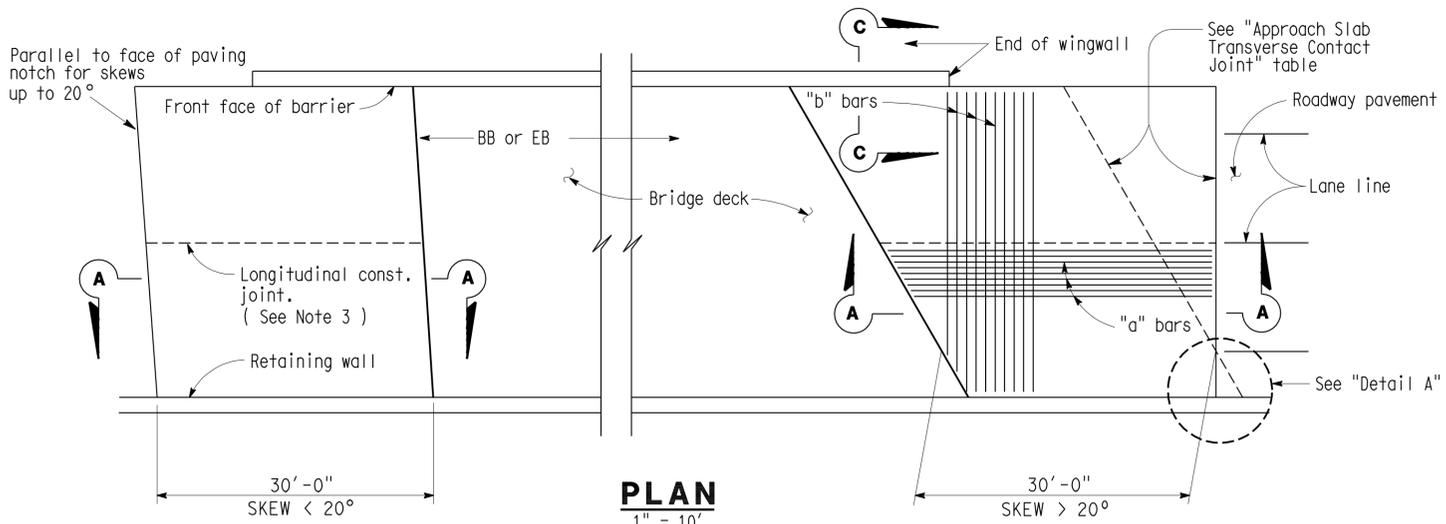
- Notes:
1. All Top Reinf bars are #11.
  2. All Bottom Reinf bars are #8.
  3. Splices for Girder Reinf bars shall meet service level requirements.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Huy Tran	CHECKED Yihwin Huang	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO.	<b>RIO LINDA BLVD UC (WIDEN)</b> <b>GIRDER REINFORCEMENT</b>			
	DETAILS	BY Bob Huddleston	CHECKED Yihwin Huang			24-0203				
	QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak			6.6				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES				SHEET 9 OF 21

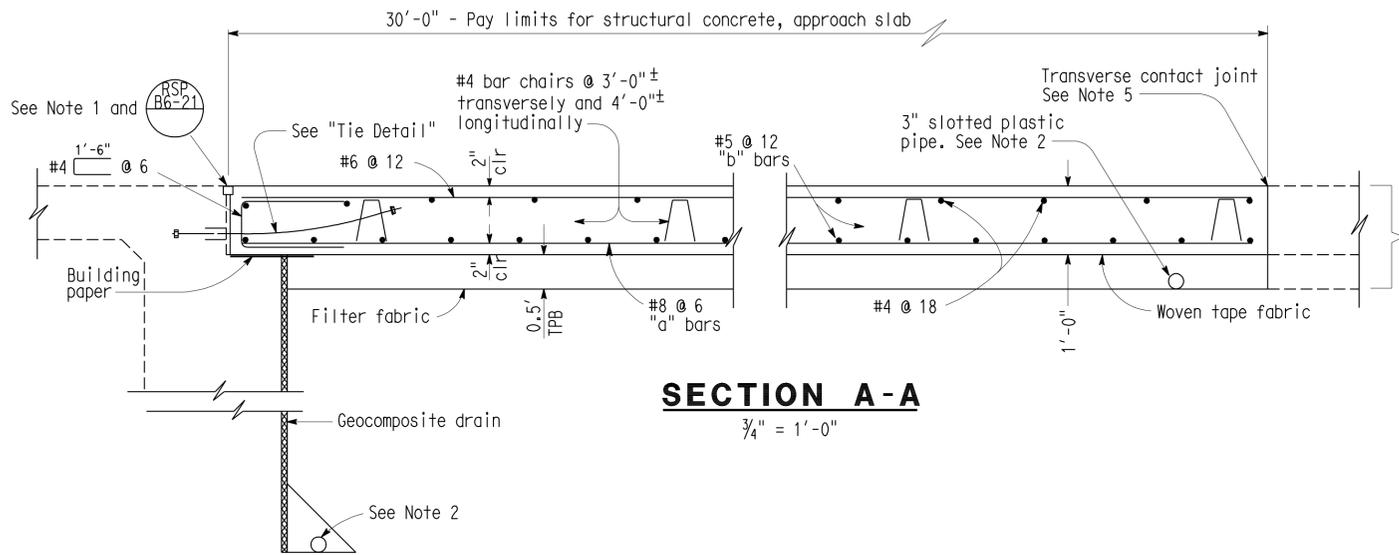
USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:26

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	940	1012
 REGISTERED ENGINEER - CIVIL			4/5/10		
9-7-10					
PLANS APPROVAL DATE					

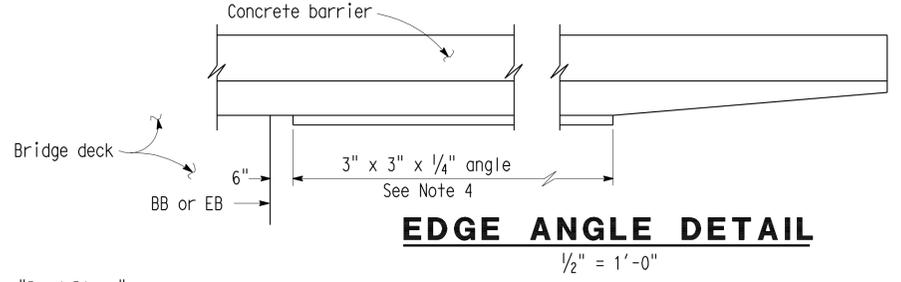
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



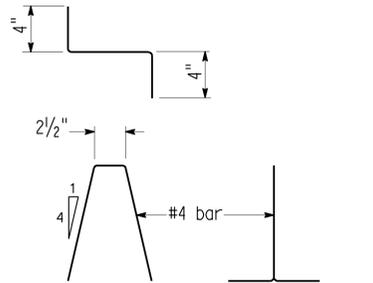
**STRUCTURE APPROACH - END STAGGER DETAIL**



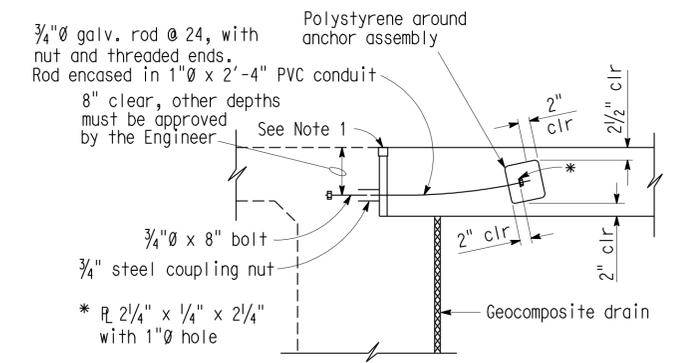
**SECTION A-A**



**EDGE ANGLE DETAIL**

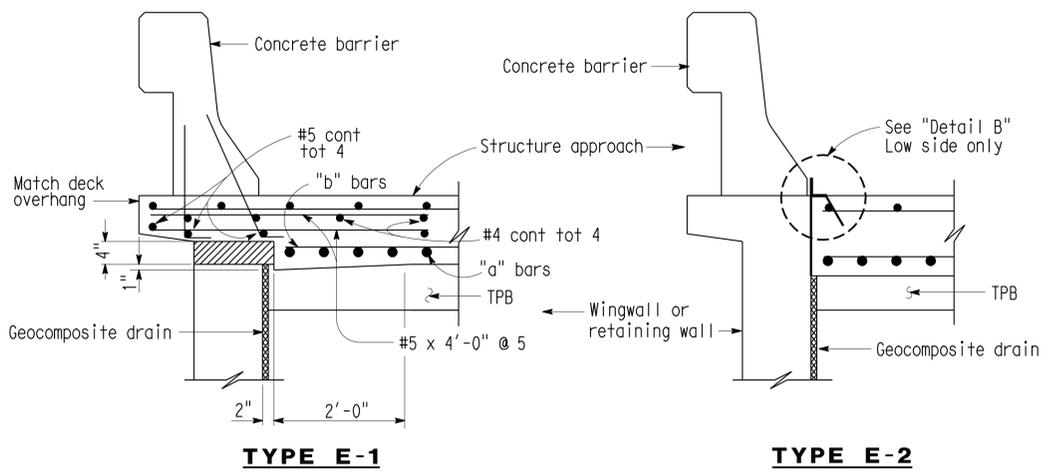


**BAR CHAIR DETAIL**



**TIE DETAIL**

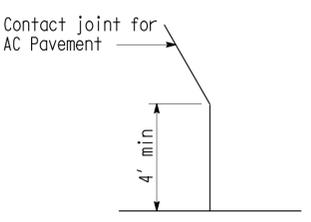
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use ( Detail A )	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use ( Detail A )	Stagger at each lane line



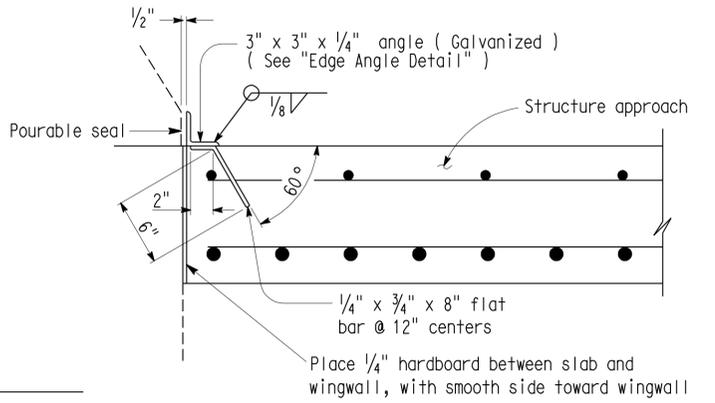
**SECTION C-C**

**TYPE E-1**

**TYPE E-2**



**DETAIL A**



**DETAIL B**

**NOTES:**

- For details not noted or shown, see Structure Plans.
- For drainage details, see "Structure Approach Drainage Details" sheet.
- Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
- End angle at beginning of barrier transition, end of wingwall or end of structure approach, as applicable
- For transverse contact joint with new PCC paving, refer to Standard Plan A35-A.
- At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along  $\phi$  roadway.

 Polystyrene to be removed.

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

<b>STANDARD DRAWING</b>			
FILE NO. <b>XS 22-24</b>	DESIGN BY <b>M. TRAFFALIS</b>	CHECKED <b>E. THORKILDSEN</b>	APPROVAL RECOMMENDED BY 
DESIGN DATE <b>8/92</b>	DETAILS BY <b>R. YEE</b>	CHECKED <b>E. THORKILDSEN</b>	DESIGN SUPERVISOR
	SUBMITTED BY <b>M. HA</b>		

<b>STATE OF CALIFORNIA</b>	<b>DIVISION OF STRUCTURES</b>
<b>DEPARTMENT OF TRANSPORTATION</b>	<b>STRUCTURE DESIGN 1</b>

BRIDGE NO.	24-0203
POST MILE	6.6

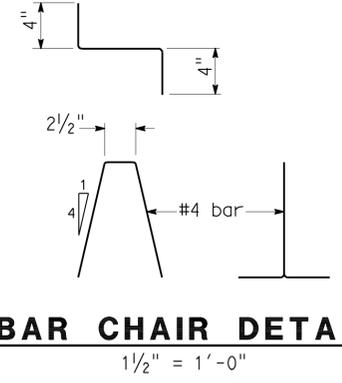
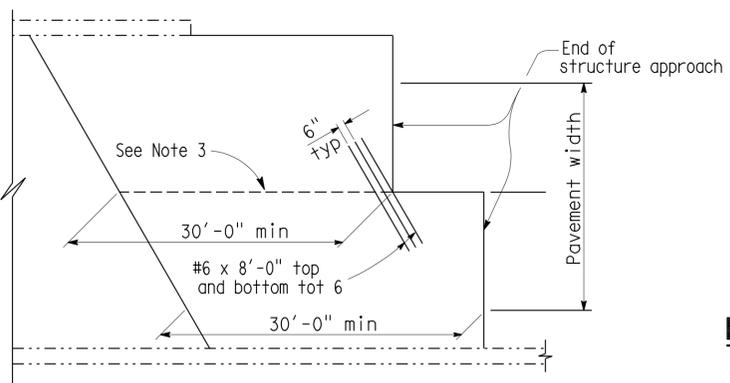
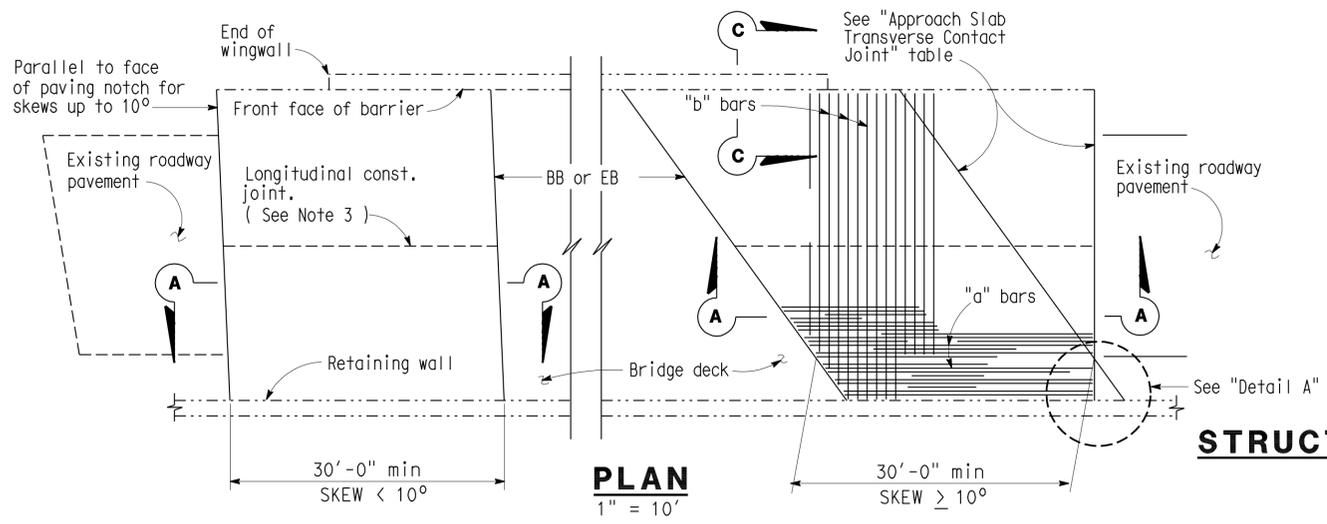
<b>RIO LINDA BLVD UC (WIDEN)</b>	
<b>STRUCTURE APPROACH TYPE N(30D)</b>	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7, MO.0/M10.4	941	1012

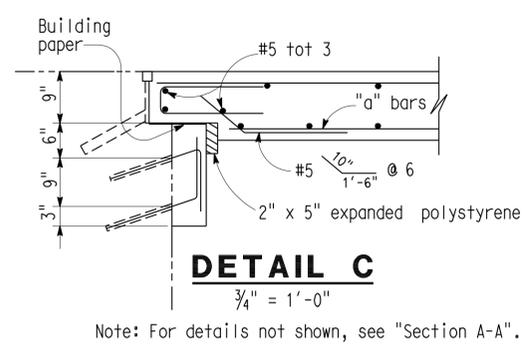
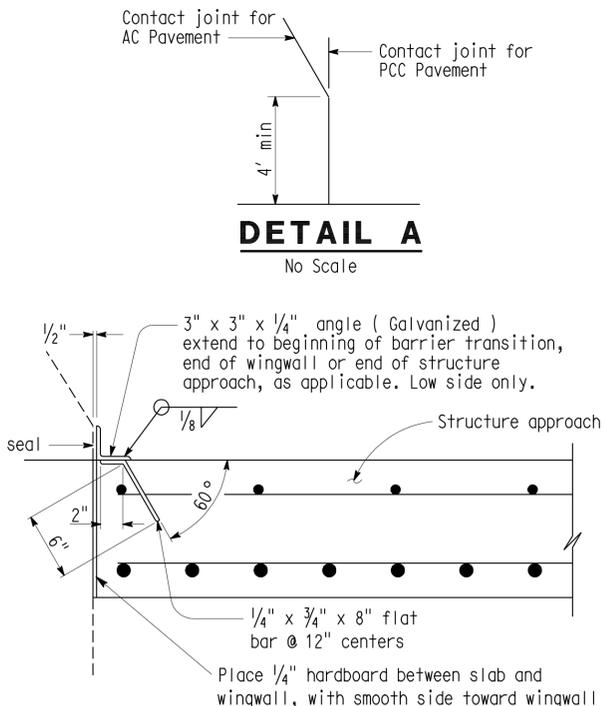
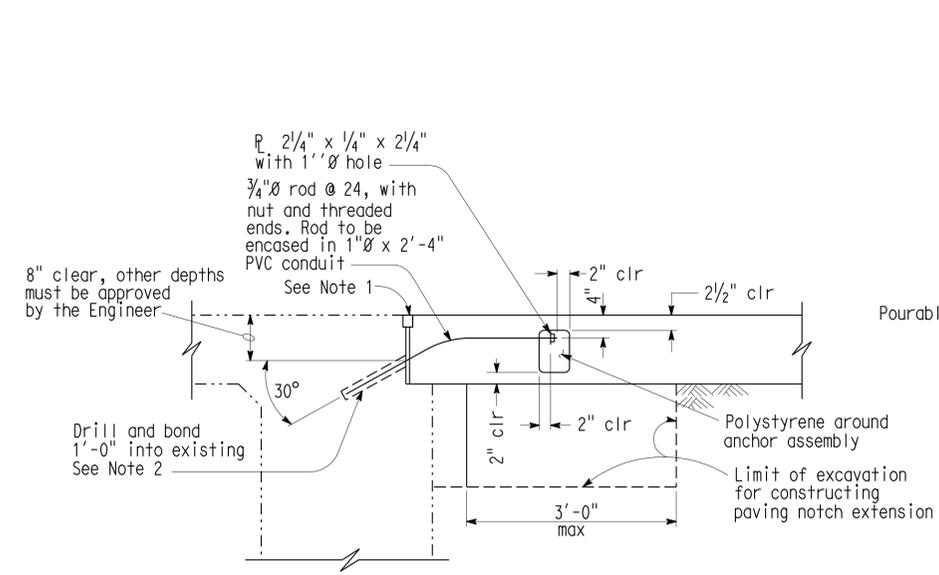
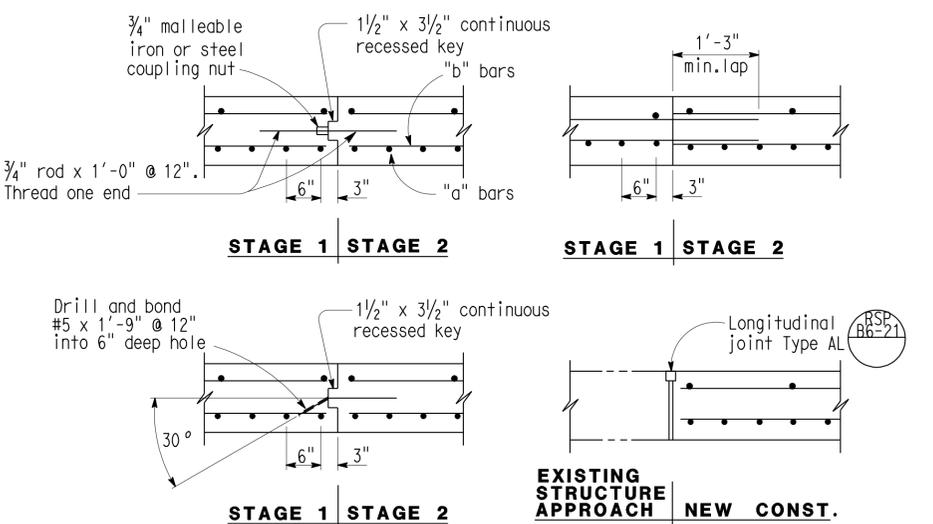
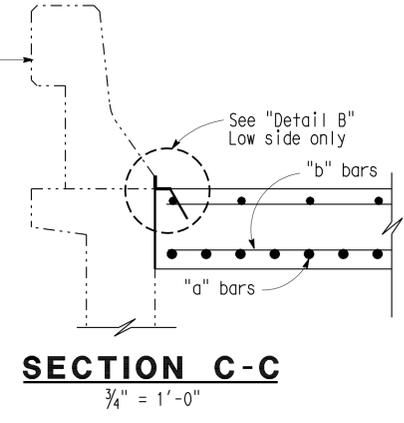
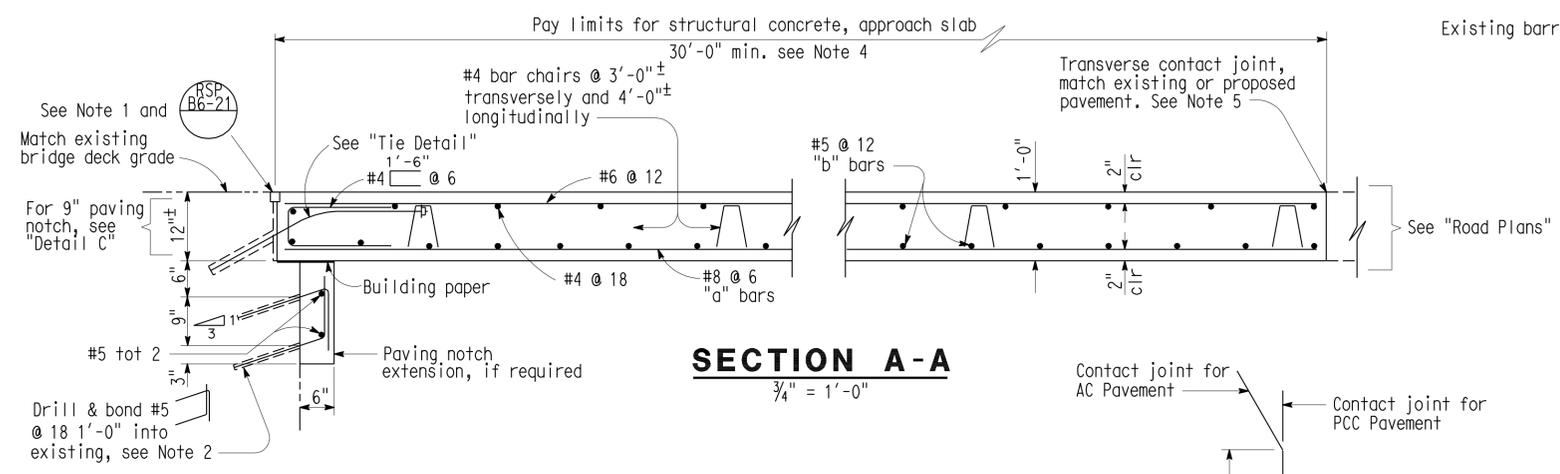
Eric Watson 4/5/10  
REGISTERED ENGINEER - CIVIL

Eric Watson  
No. 64273  
Exp. 6/30/11  
CIVIL  
STATE OF CALIFORNIA

9-7-10  
PLANS APPROVAL DATE



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10 - 45°	Parallel to face of P N use ( Detail A )	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use ( Detail A )	Stagger at each lane line



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

- NOTES:**
- For details not shown or noted, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - Space to avoid existing prestress anchorages and main reinforcement.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - Transverse contact joint shall be a minimum of 5' from an existing or constructed weakened plane joint.
  - For transverse contact joint with new PCC paving refer to Standard Plan A35-A.

STANDARD DRAWING				STATE OF CALIFORNIA		BRIDGE NO. 24-0203		RIO LINDA BLVD UC (WIDEN)	
FILE NO. XS 22-20	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	APPROVAL RECOMMENDED BY	DIVISION OF STRUCTURES		POST MILE 6.6		STRUCTURE APPROACH TYPE R(30D)	
DESIGN DATE 8/92	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	DESIGN SUPERVISOR	STRUCTURE DESIGN 1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES (PRELIMINARY STAGE ONLY)	
DS OSD 2147A (CADD 7/97)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 EA 3797UI		SHEET 11 OF 21	

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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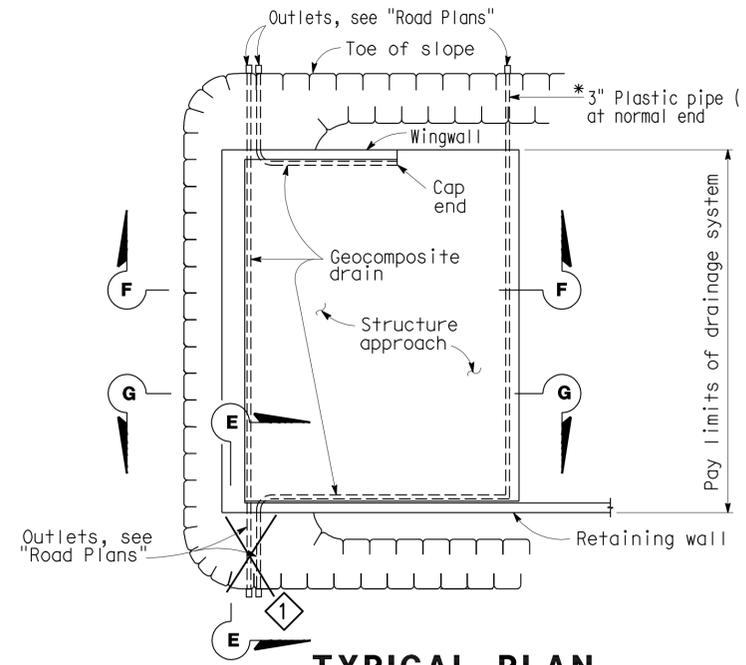
  

<i>Eric Watson</i> 4/5/10	
REGISTERED ENGINEER - CIVIL	
No. 64273	Exp. 6/30/11
STATE OF CALIFORNIA	

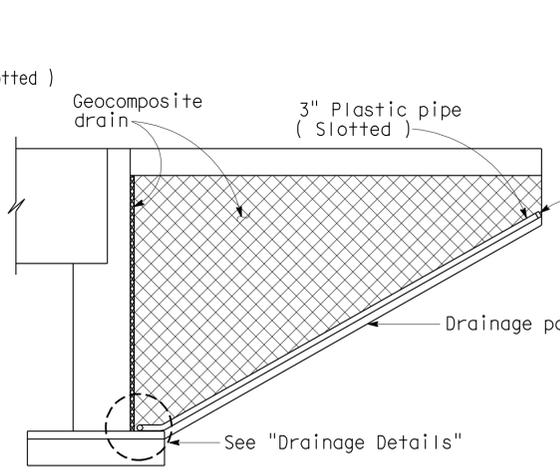
9-7-10  
PLANS APPROVAL DATE

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.

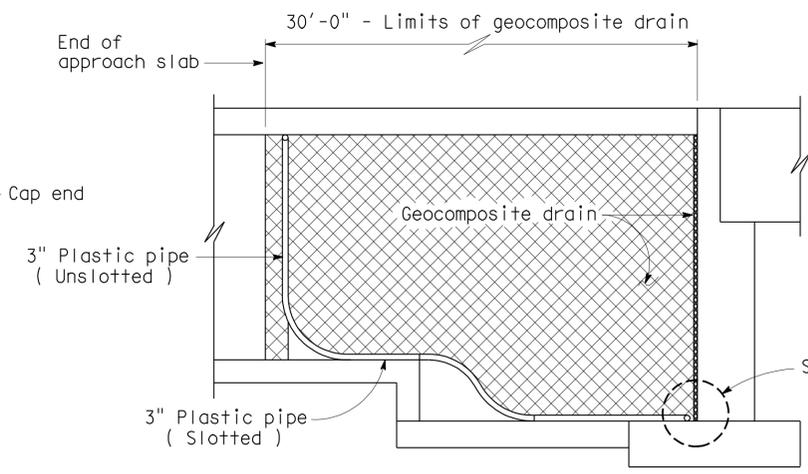


**TYPICAL PLAN**  
1" = 10'

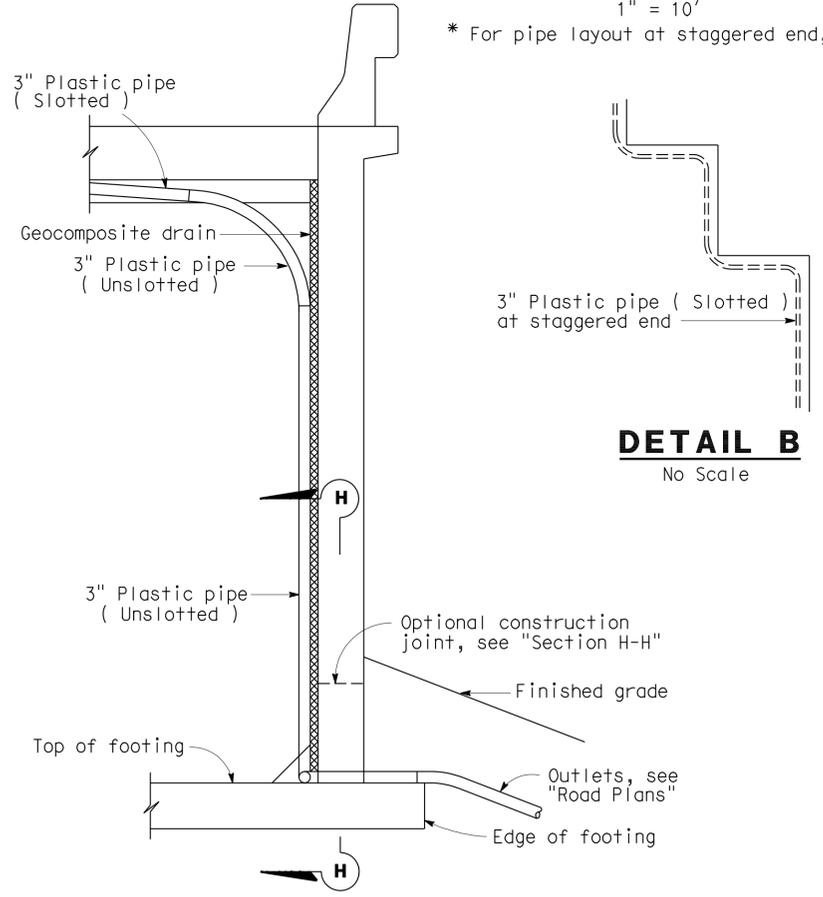
\* For pipe layout at staggered end, see "Detail B."



**CANTILEVER WINGWALL SECTION F-F**  
1/4" = 1'-0"

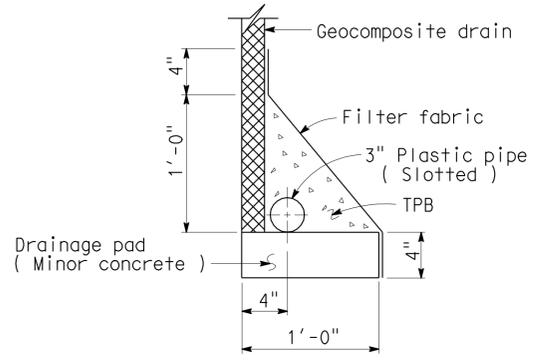


**RETAINING WALL WINGWALL SECTION G-G**  
1/4" = 1'-0"

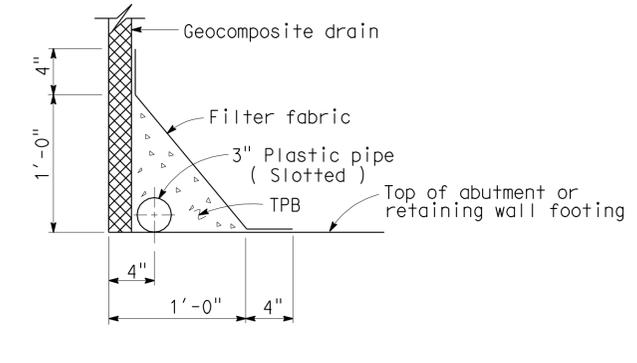


**SECTION E-E**  
1/2" = 1'-0"

Note: Bends and junctions in 3" plastic pipe are 30" radius min.

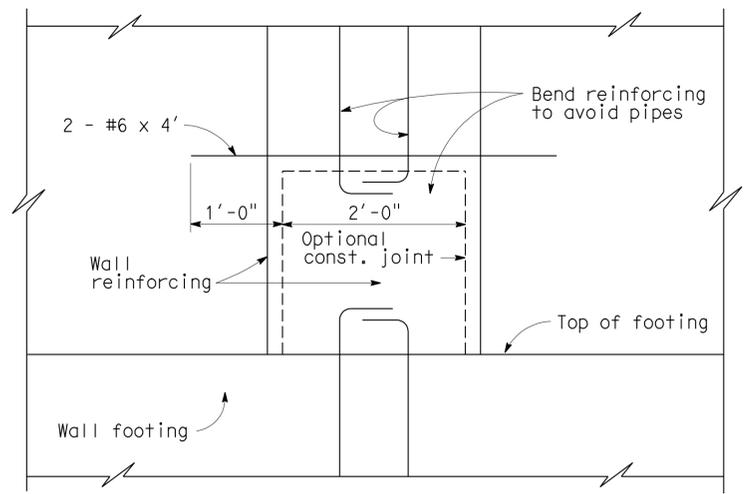


**WITHOUT FOOTING**



**WITH FOOTING**

**DRAINAGE DETAILS**  
1 1/2" = 1'-0"



**SECTION H-H**  
1" = 1'-0"

1 Does not apply

STANDARD DRAWING			
FILE NO. <b>XS 22-17</b>	DESIGN BY <b>M. TRAFFALIS</b>	CHECKED <b>E. THORKILDSEN</b>	APPROVAL-RECOMMENDED BY <i>Richard D. Ford</i>
DESIGN DATE <b>8 / 92</b>	DETAILS BY <b>R. YEE</b>	CHECKED <b>E. THORKILDSEN</b>	DESIGN SUPERVISOR
	SUBMITTED BY <b>M. HA</b>		

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO. 24-0203  
POST MILE 6.6

RIO LINDA BLVD UC (WIDEN)  
STRUCTURE APPROACH DRAINAGE DETAILS

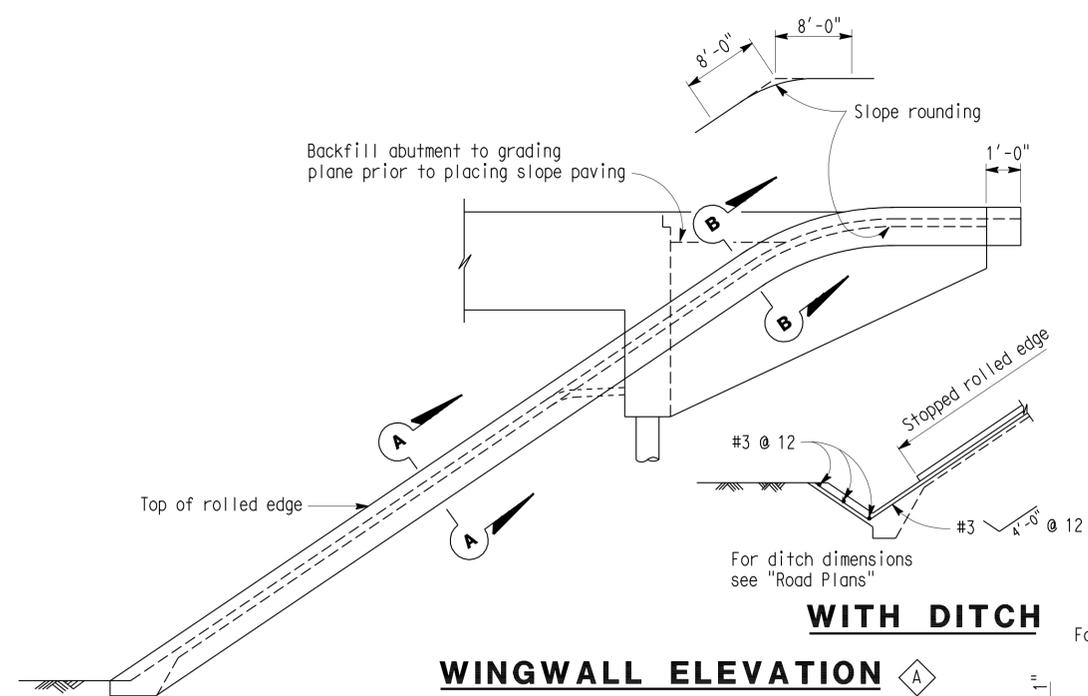
RELEASED 10-30-97

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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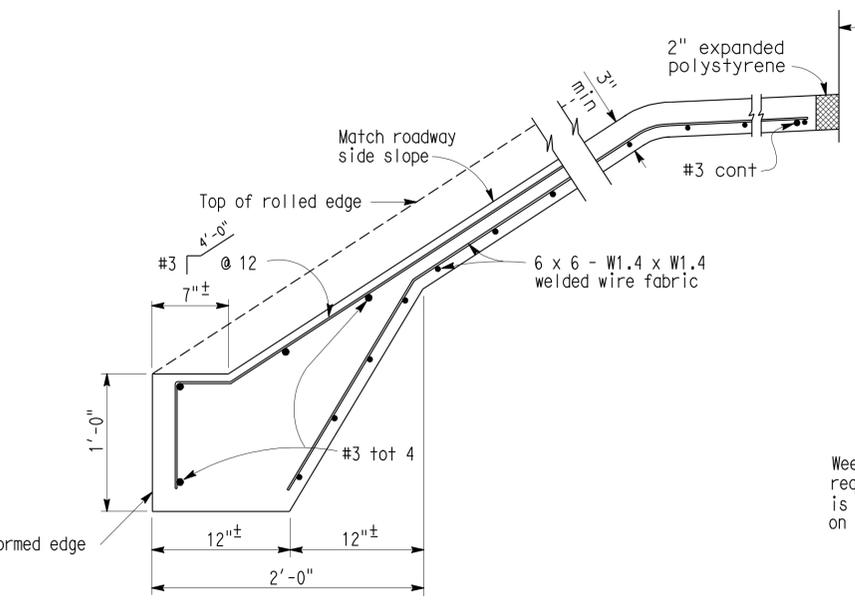
*Eric Watson* 4/5/10  
 REGISTERED ENGINEER - CIVIL  
 No. 64273  
 Exp. 6/30/11  
 CIVIL  
 STATE OF CALIFORNIA

9-7-10  
PLANS APPROVAL DATE

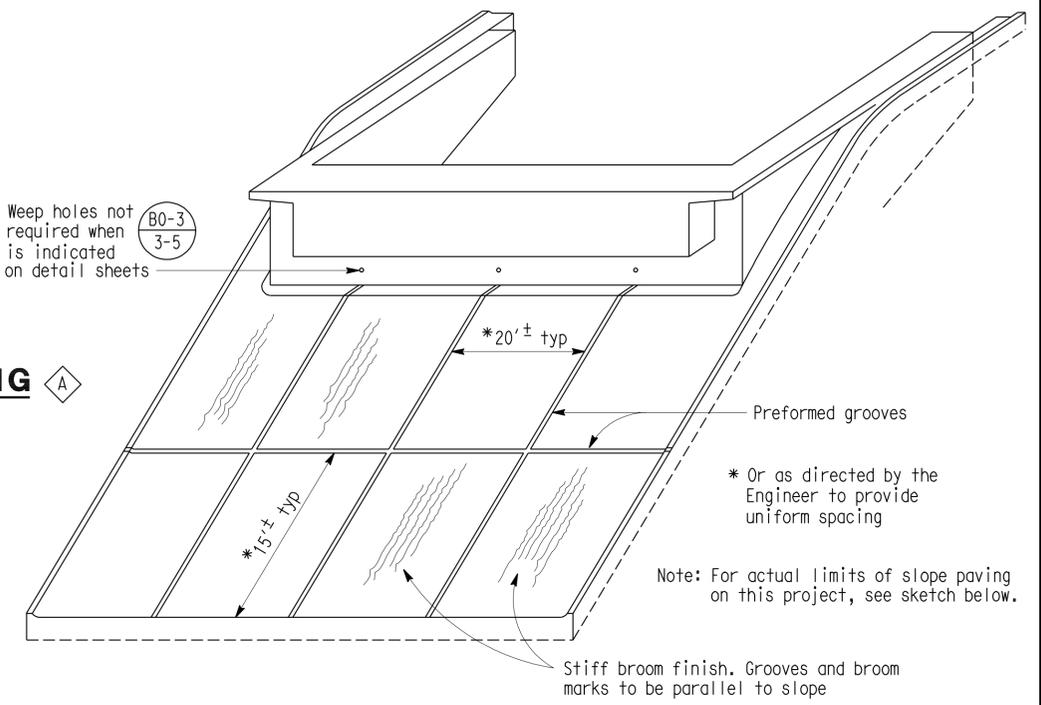
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



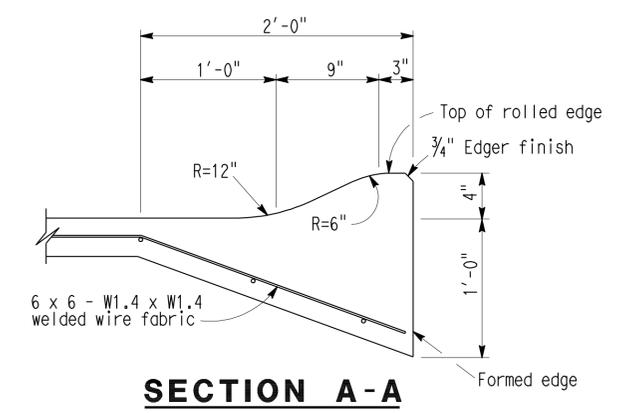
**WINGWALL ELEVATION WITH DITCH**



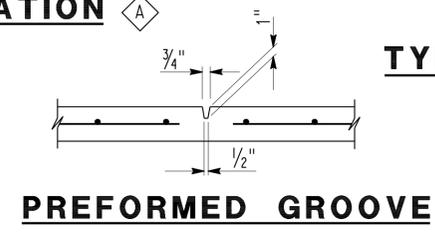
**TYPICAL SECTION - CONCRETE PAVING**



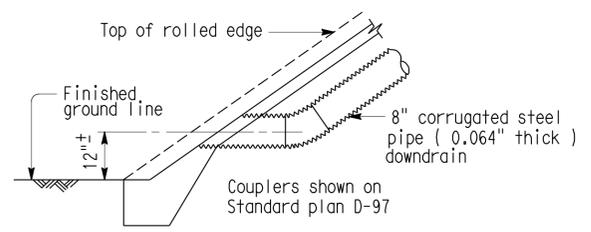
**PICTORIAL VIEW OF TYPICAL INSTALLATION**



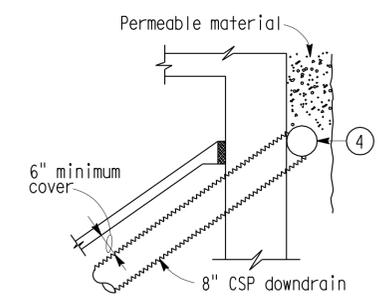
**SECTION A-A**



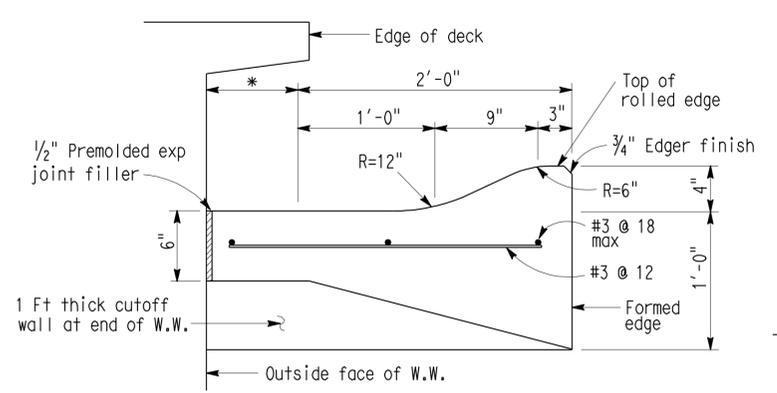
**PREFORMED GROOVE**



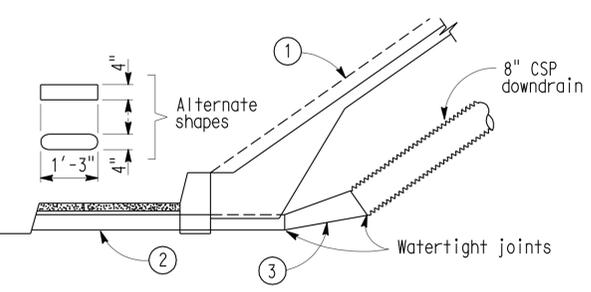
**TYPICAL - NO CURB**



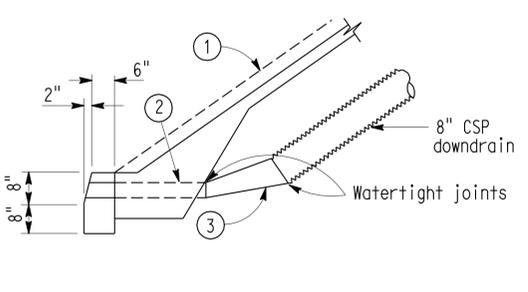
**TYPICAL - DRAIN CONNECTION**



**SECTION B-B**



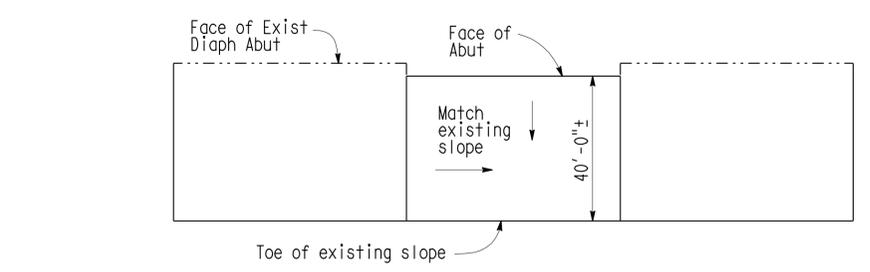
**TYPICAL - WITH SIDEWALK**



**TYPICAL - WITH CURB**

**DRAINAGE DETAILS**

Note: Drainage details are only applicable when is indicated on detail sheets.



**LIMITS OF SLOPE PAVING & DRAINAGE LAYOUT**

- ① Top of rolled edge
- ② Conduit: 0.064" galv corrugated steel or 0.109" smooth galv steel
- ③ Taper: { 0.064" galv corrugated steel or 0.109" smooth galv steel
- ④ 8" perforated steel pipe (0.064" thick) underdrain behind abutment. Connect to down drain as shown on limits of Slope Paving & Drainage layout.

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

\* This dimension becomes zero when edge of deck is at outside face of W.W.

STANDARD DRAWING			APPROVAL - RECOMMENDED BY
FILE NO. <b>XS 22-11</b>	DESIGN BY	CHECKED	<i>Richard D. Ford</i> DESIGN SUPERVISOR
DESIGN DATE <b>3/89</b>	DETAILS BY <b>R. YEE</b>	CHECKED	
	SUBMITTED BY <b>C.W. PURKISS</b>		

Ⓜ Modified Detail

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES  
STRUCTURE DESIGN **1**

BRIDGE NO. 24-0203
POST MILE 6.6

**RIO LINDA BLVD UC (WIDEN)  
SLOPE PAVING - FULL SLOPE**

DS OSD 2147A (CADD 7/97)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

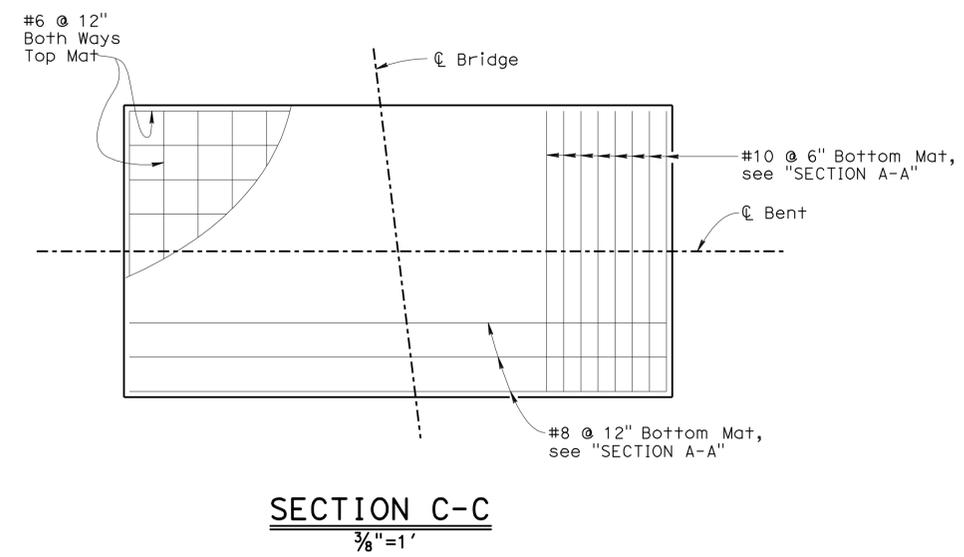
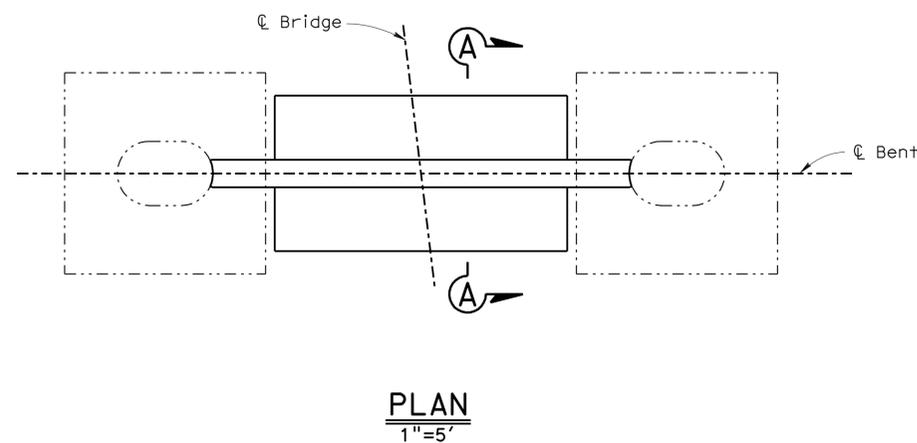
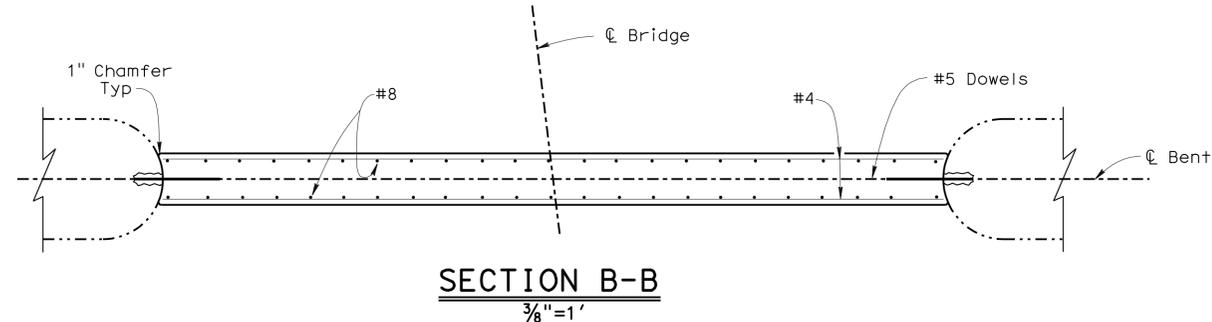
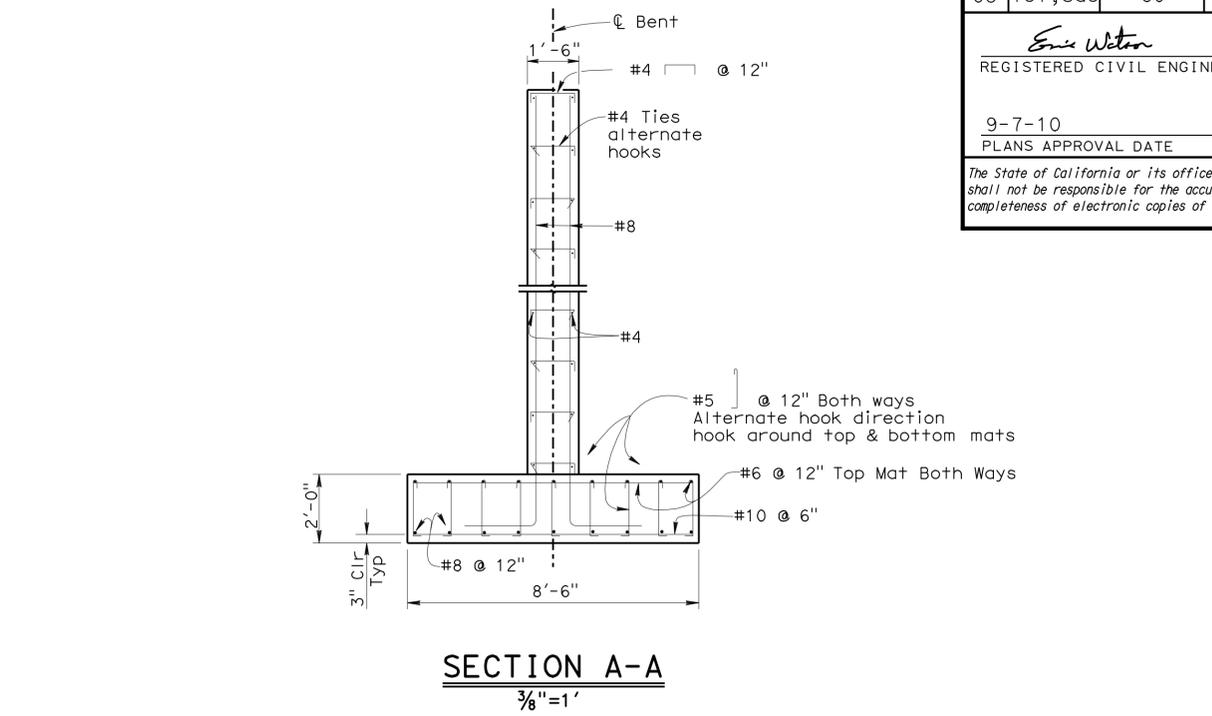
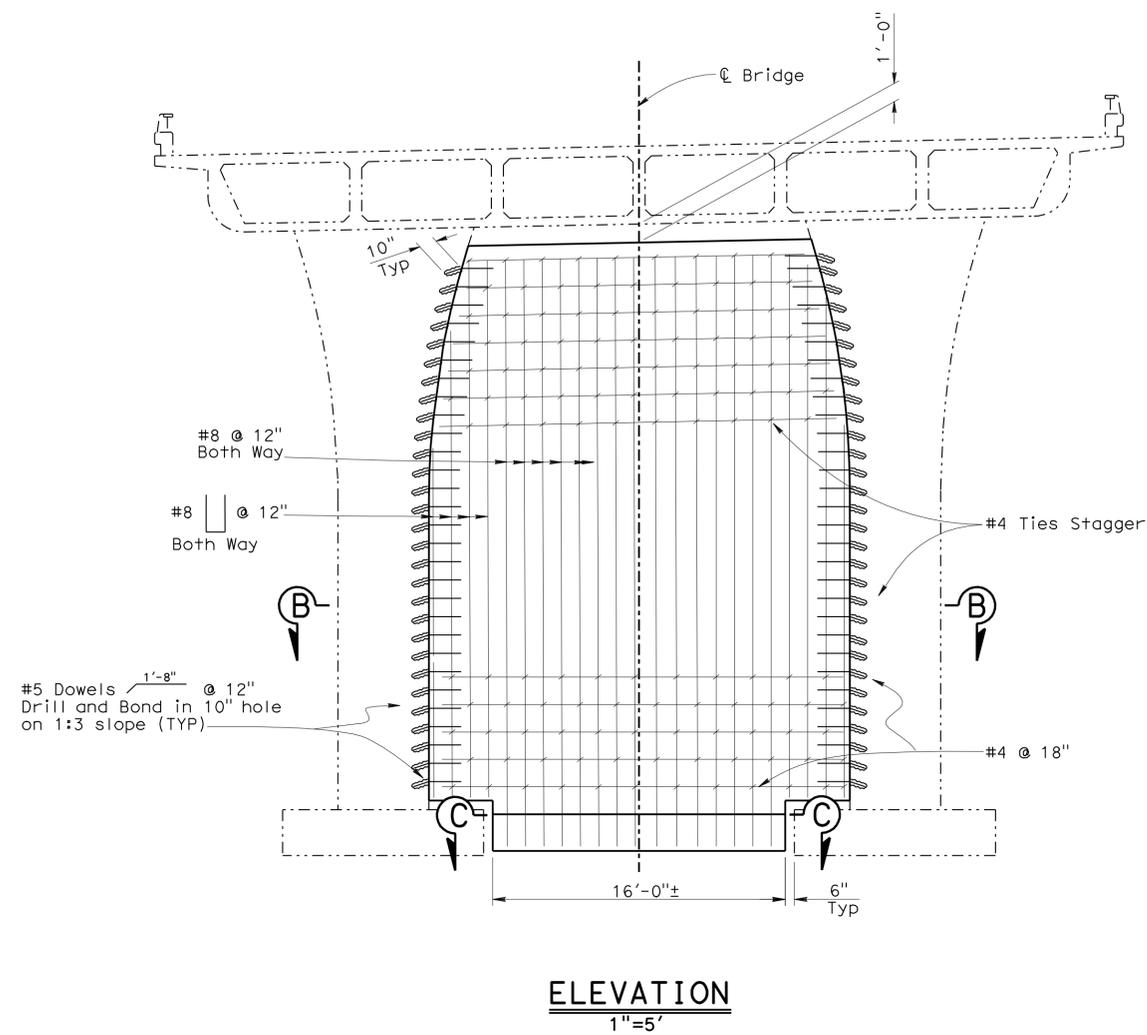
CU 03  
EA 3797UI

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY)		SHEET	OF
8/28/08	4/05/10	13	21

XS221.DGN V=1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	944	1012
Eric Watson			4/5/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6/30/11		
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.					



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

DESIGN	BY Huy Tran	CHECKED Yihwin Huang
DETAILS	BY Jinrong Zhou	CHECKED Yihwin Huang
QUANTITIES	BY Bob Huddleston	CHECKED Vadim Shostak

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.	24-0203
POST MILE	6.6

RIO LINDA BLVD UC (WIDEN)  
BENT SEISMIC RETROFIT DETAILS

01/26/08	03/04/08	11/25/08	12/18/08	01/26/09	04/24/09	04/05/10
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	945	1012

1-12-09  
REGISTERED CIVIL ENGINEER  
KLEINFELDER INC.  
KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
STATE OF CALIFORNIA  
REGISTERED PROFESSIONAL ENGINEER  
GEOTECHNICAL

9-7-10  
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.

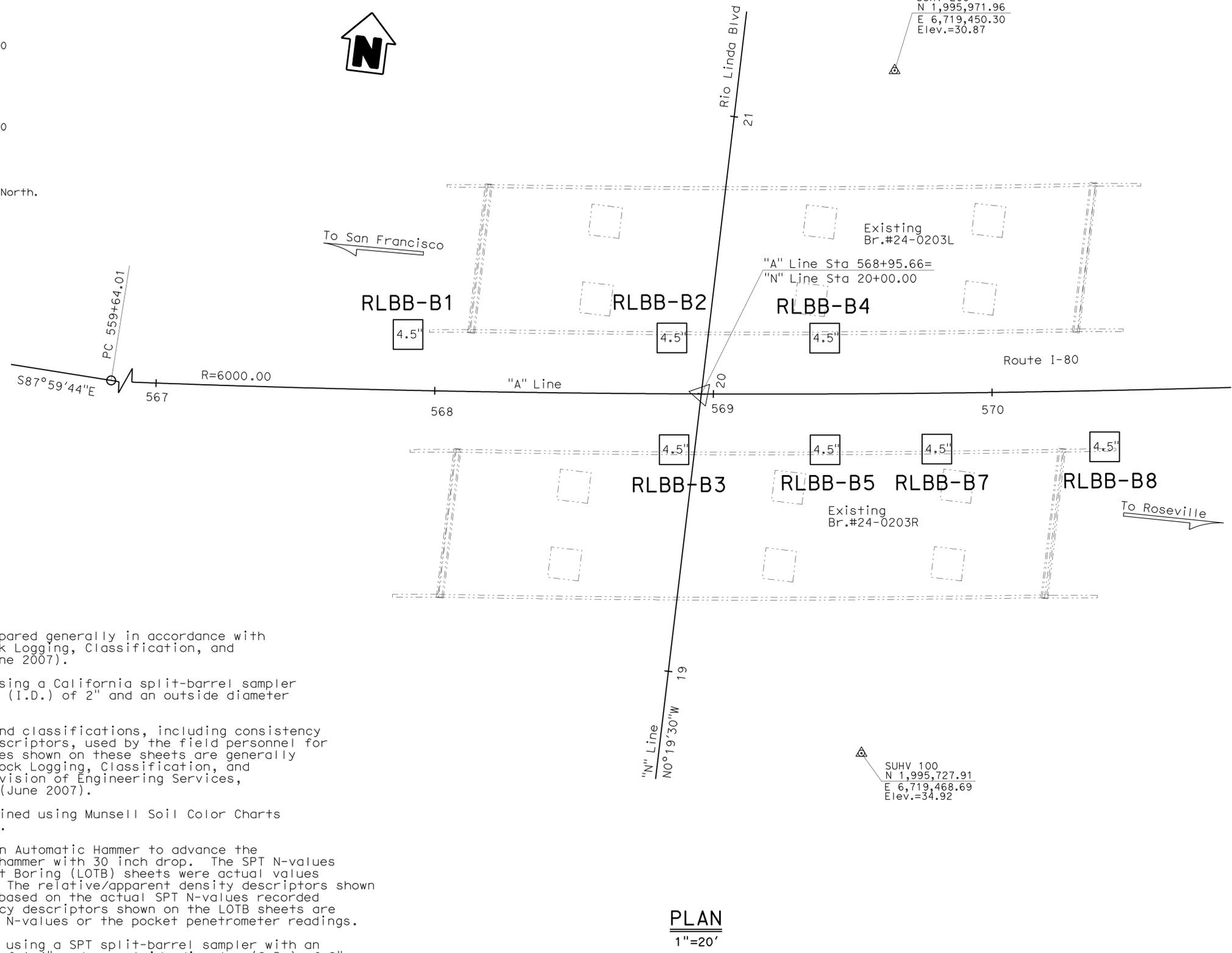
KLEINFELDER INC.  
3077 FITE CIR.  
SACRAMENTO, CA 95826

**SURVEY CONTROL**

SUHV 100  
Fnd 1" Spike  
128.71Ft Rt. C "A" Line Rte I-80  
Sta. 569+52.37  
N 1,995,727.92  
E 6,719,468.69  
Elev. = 34.92

SUHV 200  
Fnd 1" Spike  
115.66Ft Lt. C "A" Line Rte I-80  
Sta. 569+65.97  
N 1,995,971.96  
E 6,719,450.30  
Elev. = 30.87

Note: Control Points set by PI North.



- Notes:
1. This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).
  2. 2" samples were taken using a California split-barrel sampler with an inside diameter (I.D.) of 2" and an outside diameter (O.D.) of 2.5".
  3. The soil descriptions and classifications, including consistency and relative density descriptors, used by the field personnel for the exploration boreholes shown on these sheets are generally based on the Soil and Rock Logging, Classification, and Presentation Manual, Division of Engineering Services, Geotechnical Services, (June 2007).
  4. Soil Colors were determined using Munsell Soil Color Charts (1994, Revised Edition).
  5. Test Borings utilized an Automatic Hammer to advance the sampler using a 140 lb hammer with 30 inch drop. The SPT N-values shown on the Log of Test Boring (LOTB) sheets were actual values recorded in the field. The relative/apparent density descriptors shown on the LOTB sheets are based on the actual SPT N-values recorded in the field. Consistency descriptors shown on the LOTB sheets are based on the actual SPT N-values or the pocket penetrometer readings.
  6. 1.4" samples were taken using a SPT split-barrel sampler with an inside diameter (I.D.) of 1.4" and an outside diameter (O.D.) of 2".
  7. Blowcounts 50/5" means 50 blows per 5" penetration.

**PLAN**  
1"=20'

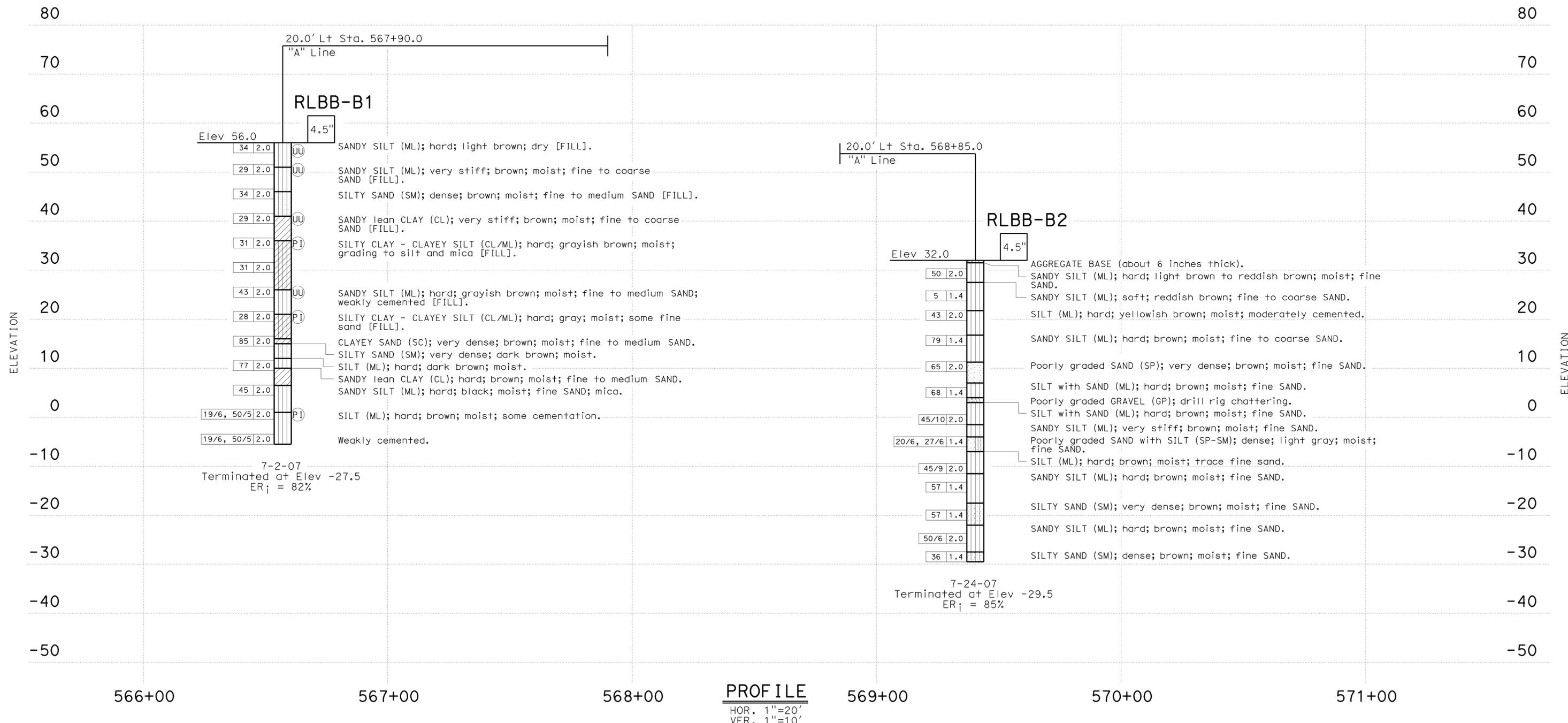
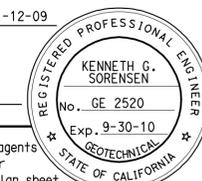
GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0203		<b>RIO LINDA BLVD UC (WIDEN)</b>							
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		G. Zhang		POST MILES 6.60						<b>LOG OF TEST BORINGS 1 OF 7</b>			
065 CIVIL LOG OF TEST BORINGS SHEET						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES					

FILE PLOTTED => 06:27  
USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	946	1012
			1-12-09		
REGISTERED CIVIL ENGINEER					
9-7-10			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.					
KLEINFELDER INC. 3077 FITE CIR. SACRAMENTO, CA 95826					



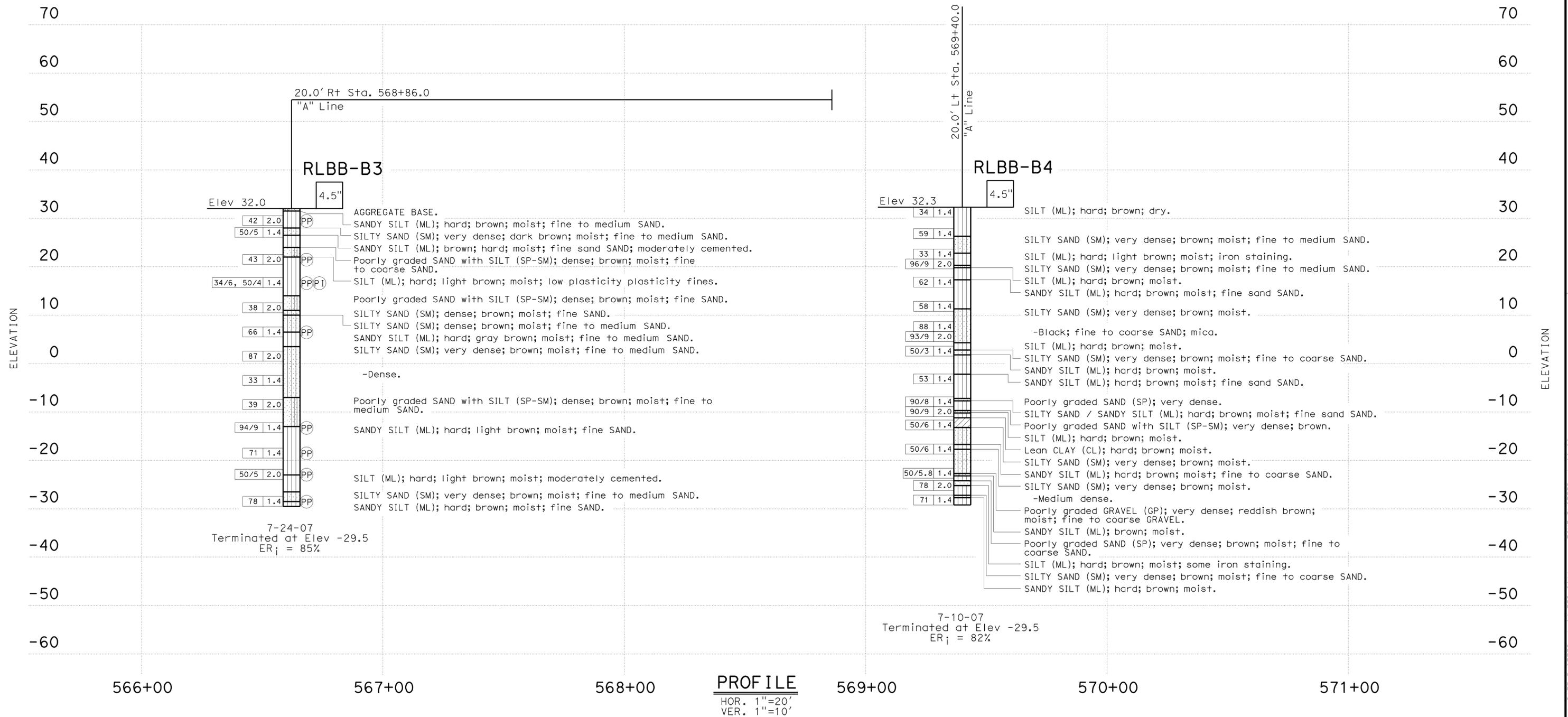
GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0203		<b>RIO LINDA BLVD UC (WIDEN)</b>			
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		DEPARTMENT OF TRANSPORTATION		POST MILES 6.60		<b>LOG OF TEST BORINGS 2 OF 7</b>			
065 CIVIL LOG OF TEST BORINGS SHEET						CU 03240 EA 3797U1		REVISION DATES			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						0 1 2 3		7-14-08 12-22-08 1-12-09 04/24/09 04/05/10			
DISREGARD PRINTS BEARING EARLIER REVISION DATES						FILE => 24-0203-z-1+b02.dgn		SHEET 16 OF 21			

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:27

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	947	1012
			1-12-09		
REGISTERED CIVIL ENGINEER					
9-7-10			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.					
KLEINFELDER INC. 3077 FITE CIR. SACRAMENTO, CA 95826					



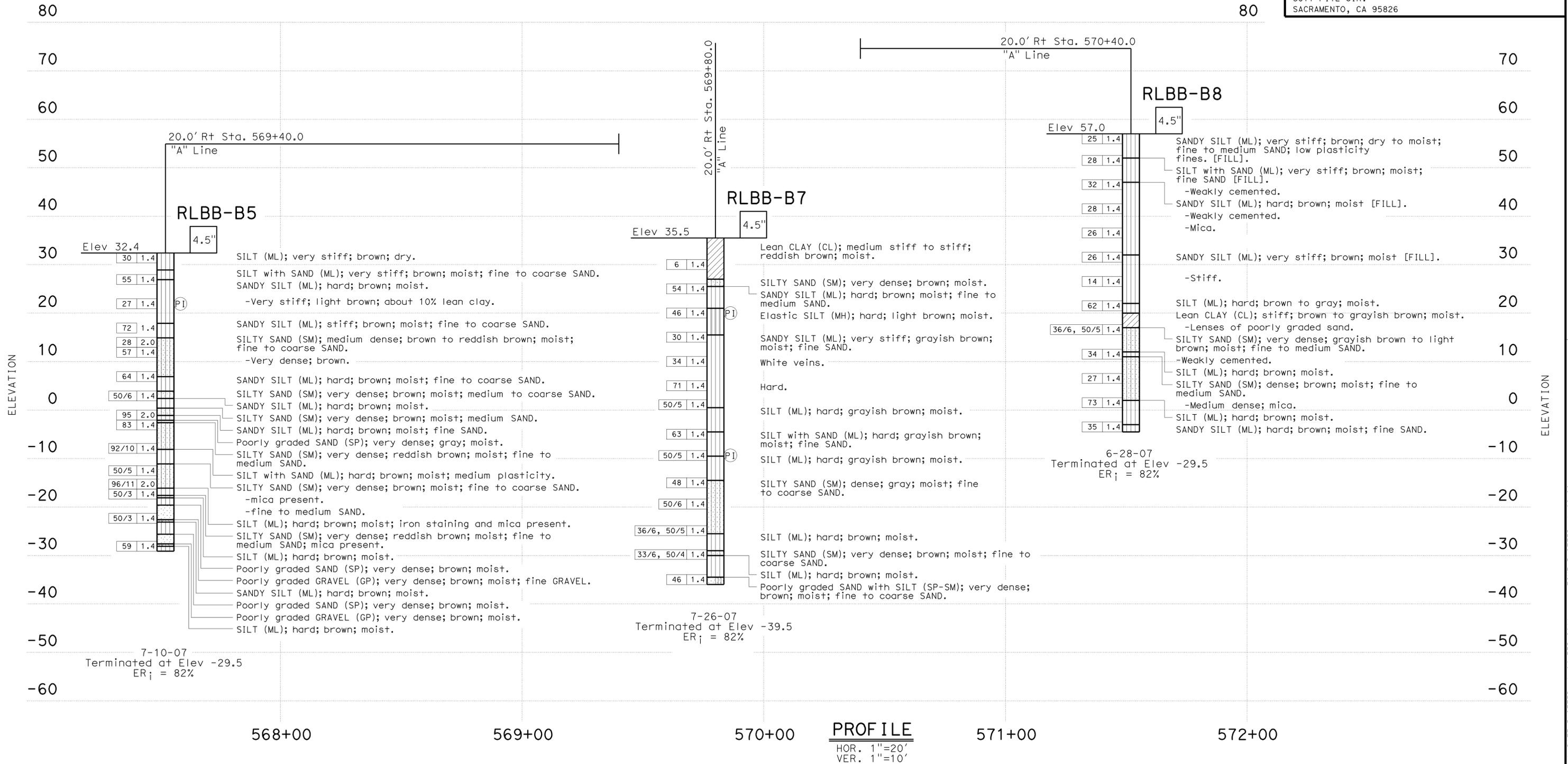
GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0203		<b>RIO LINDA BLVD UC (WIDEN)</b>	
FUNCTIONAL SUPERVISOR NAME: K. Sorensen		CHECKED BY: G. Zhang		PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		<b>LOG OF TEST BORINGS 3 OF 7</b>	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03240 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
				0 1 2 3		7-14-08 12-22-08 1-12-09 04/24/09 04/05/10		SHEET 17 OF 21	

FILE PLOTTED => 04-FEB-2011 USERNAME => hrmikes

NOTE: This LOTB sheet was prepared generally in accordance with the Caltrans Soil & Rock Logging, Classification, and Presentation Manual (June 2007).

FOR PLAN VIEW AND ADDITIONAL NOTES, SEE "LOG OF TEST BORINGS" SHEET 1 OF 7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	948	1012
			1-12-09		
REGISTERED CIVIL ENGINEER					
9-7-10					
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.		
KLEINFELDER INC. 3077 FITE CIR. SACRAMENTO, CA 95826					



GEOTECHNICAL SERVICES OVERSIGHT: J. Martin		DRAWN BY: A. Sanchez		FIELD INVESTIGATION BY: G. Zhang		BRIDGE NO. 24-0203		<b>RIO LINDA BLVD UC (WIDEN)</b> <b>LOG OF TEST BORINGS 4 OF 7</b>			
FUNCTIONAL SUPERVISOR NAME: K. Sorenson		CHECKED BY: G. Zhang				POST MILES 6.60					
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION						DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1		DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES: 7-14-08, 12-22-08, 1-12-09, 04/24/09, 04/05/10 SHEET 18 OF 21			

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0 1 2 3

CU 03240 EA 3797U1

FILE => 24-0203-z-1+04.dgn

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	949	1012

1-12-09  
REGISTERED CIVIL ENGINEER DATE

9-7-10  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
STATE OF CALIFORNIA  
GEOTECHNICAL

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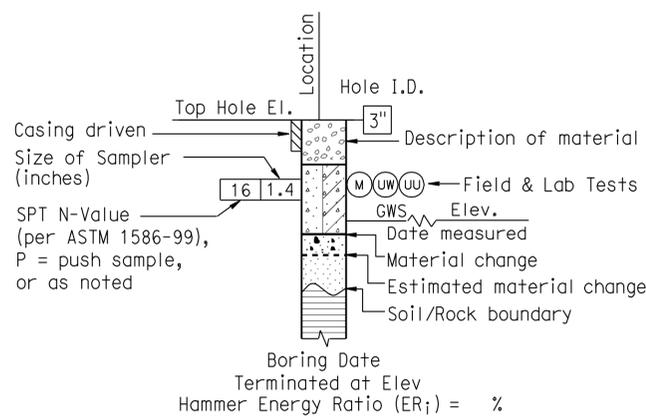
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

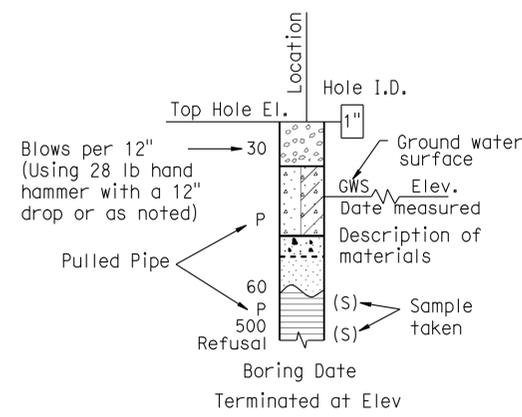
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

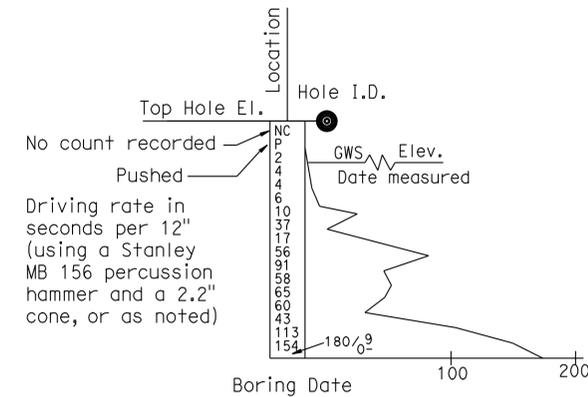
PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



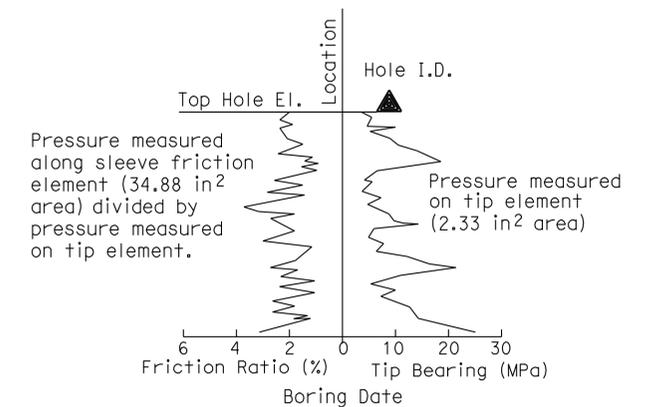
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin

FUNCTIONAL SUPERVISOR: K. Sorensen

PREPARED BY: A. Sanchez

CHECKED BY: G. Zhang

PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.

24-0203L/R

POST MILE

6.60

RIO LINDA BLVD (WIDEN)

LOG OF TEST BORINGS 5 OF 7

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES  
FOR REDUCED PLANS

0 1 2 3

CU 03240  
EA 3797U1

FILE => 24-0203-z-1+tb051.dgn

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES

REVISION DATES

7-14-08 12-22-08 1-12-09 04/24/09 04/05/10

SHEET OF

19 21

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	950	1012

1-12-09  
REGISTERED CIVIL ENGINEER DATE

9-7-10  
PLANS APPROVAL DATE

KENNETH G. SORENSEN  
No. GE 2520  
Exp. 9-30-10  
REGISTERED PROFESSIONAL ENGINEER  
GEOTECHNICAL  
STATE OF CALIFORNIA

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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW Well-graded GRAVEL		CL Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
	GP Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
	GW-GM Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND		CL-ML SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
	GW-GC Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	GP-GM Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND		ML SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
	GP-GC Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
	GM SILTY GRAVEL SILTY GRAVEL with SAND		OL ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
	GC CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
	GC-GM SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND		OL ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
	SW Well-graded SAND Well-graded SAND with GRAVEL		
	SP Poorly graded SAND Poorly graded SAND with GRAVEL		CH Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
	SW-SM Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
	SW-SC Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		MH Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
	SP-SM Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
	SP-SC Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		OH ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
	SM SILTY SAND SILTY SAND with GRAVEL		
	SC CLAYEY SAND CLAYEY SAND with GRAVEL		OH ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
	SC-SM SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
	PT PEAT		OL/OH ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS 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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(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)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

GEOTECHNICAL SERVICES OVERSIGHT: J. Martin

FUNCTIONAL SUPERVISOR: K. Sorensen

PREPARED BY: A. Sanchez

CHECKED BY: G. Zhang

GS LOTB SOIL LEGEND

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

PREPARED FOR THE  
**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO.  
24-0203L/R

POST MILE  
6.60

CU 03240  
EA 3797U1

FILE => 24-0203-z-1+tb061.dgn

**RIO LINDA BLVD (WIDEN)**  
**LOG OF TEST BORINGS 6 of 7**

REVISION DATES

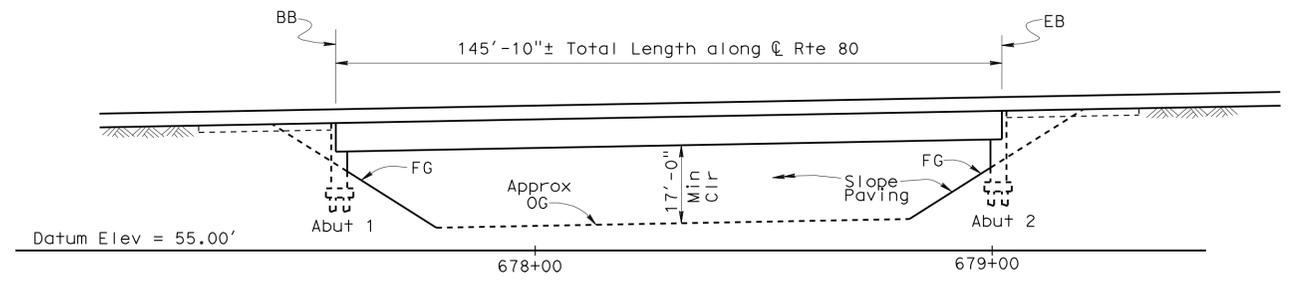
4-29-08	12-28-08	1-12-09	04/24/09	04/05/10
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SHEET 20 OF 21

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	952	1012
			Eric Watson	4/6/10	
			REGISTERED CIVIL ENGINEER	DATE	
			9-7-10		
			PLANS APPROVAL DATE		
			Eric Watson	No. 64273	
			Exp. 6-30-11		
			CIVIL		
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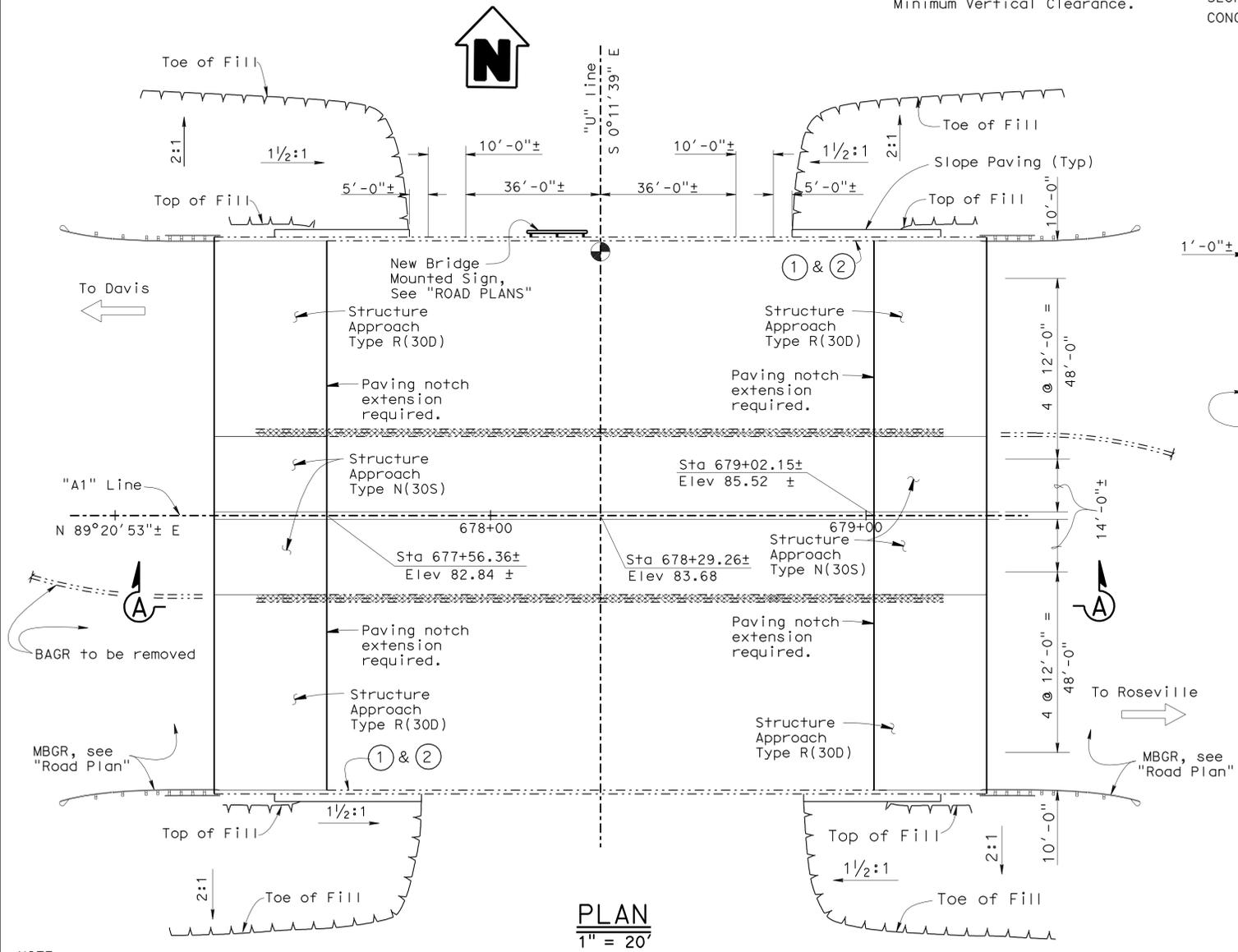
**ELEVATION A-A**  
1" = 20'

- Notes:
- Paint "Winters Street Undercrossing".
  - Paint "Br. No. 24-0205".

- Legend :
- Existing Structure.
  - ▨ Indicates limits of Bridge Removal.
  - ⊙ Indicates Point of Minimum Vertical Clearance.

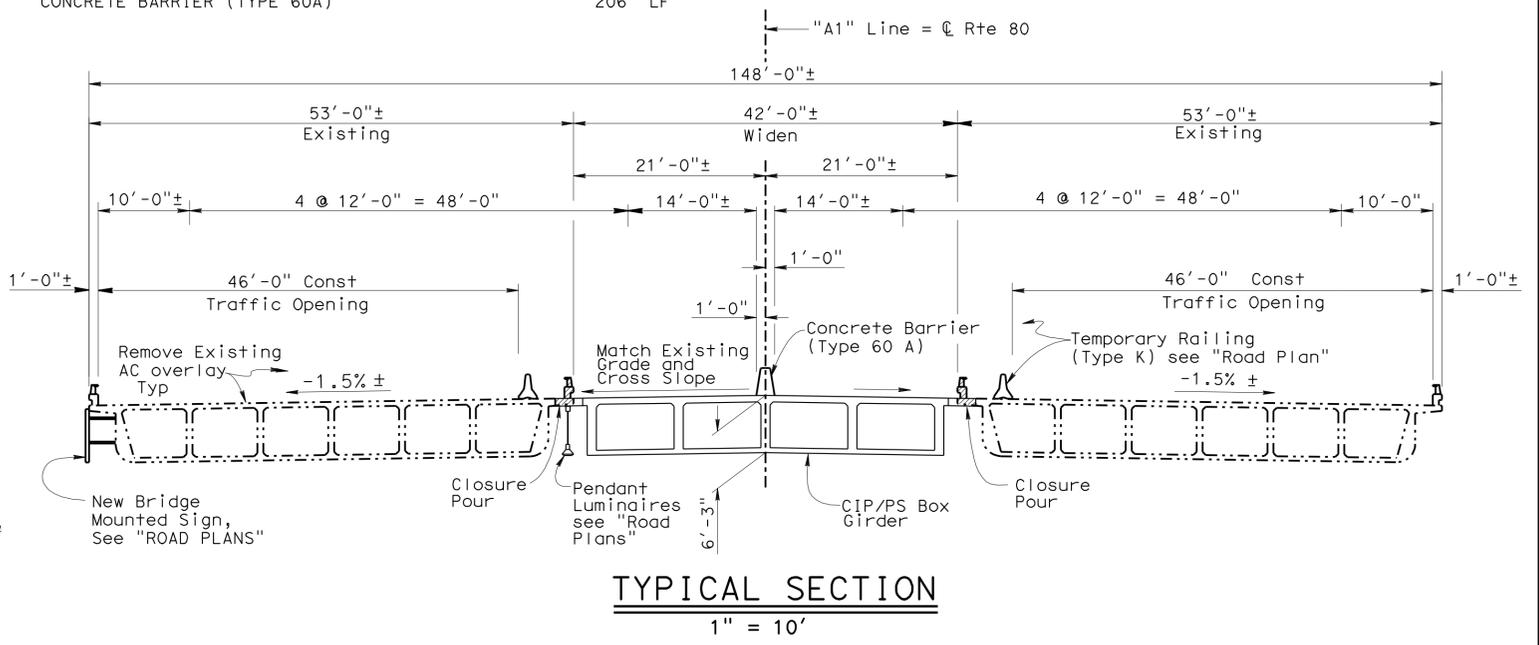
QUANTITIES

REMOVE ASPHALT CONCRETE SURFACING	14,290	SQFT
BRIDGE REMOVAL (PORTION), LOCATION D	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	124	CY
STRUCTURE BACKFILL (BRIDGE)	267	CY
AGGREGATE BASE (APPROACH SLAB)	24	CY
16" CAST-IN-DRILLED-HOLE CONCRETE PILING	1,739	LF
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	37	CY
STRUCTURAL CONCRETE, BRIDGE	590	CY
STRUCTURAL CONCRETE, APPROACH SLAB	94	CY
(TYPE N)		
STRUCTURAL CONCRETE, APPROACH SLAB	234	CY
(TYPE R)		
PAVING NOTCH EXTENSION	151	CF
JOINT SEAL (MR 1")	296	LF
BAR REINFORCING STEEL (BRIDGE)	108,980	LB
SLOPE PAVING (CONCRETE)	102	CY
CONCRETE BARRIER (TYPE 60A)	206	LF



**PLAN**  
1" = 20'

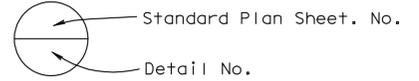
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



**TYPICAL SECTION**  
1" = 10'

**INDEX TO PLANS**

SHEET NO.	TITLE	STANDARD PLANS DATED MAY, 2006
1	GENERAL PLAN	
2	FOUNDATION PLAN	
3	ABUTMENT LAYOUT	
4	ABUTMENT DETAILS NO. 1	
5	ABUTMENT DETAILS NO. 2	
6	TYPICAL SECTION	
7	GIRDER LAYOUT	
8	STRUCTURE APPROACH TYPE R(300)	A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
9	STRUCTURE APPROACH TYPE N(300)	A76A CONCRETE BARRIER TYPE 60
10	STRUCTURE APPROACH DRAINAGE DETAIL	B0-1 BRIDGE DETAILS
11	SLOPE PAVING	B0-3 BRIDGE DETAILS
12	LOG OF TEST BORINGS 1 OF 5	B0-5 BRIDGE DETAILS
13	LOG OF TEST BORINGS 2 OF 5	B0-13 BRIDGE DETAILS
14	LOG OF TEST BORINGS 3 OF 5	B2-3 16" AND 24" CAST-IN-DRILLED-HOLE CONCRETE PILE
15	LOG OF TEST BOTINGS 4 OF 5	RSP B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
16	LOG OF TEST BOTINGS 5 OF 5	B7-1 BOX GIRDER DETAILS
		B8-5 CAST-IN-PLACE PRESTRESSED GIRDER DETAILS



DESIGN	BY Timothy Schmalz	CHECKED Danny LaLonde	LRFD	LIVE LOADING: HL93 & PERMIT DESIGN VEHICLE
DETAILS	BY Mike Herron	CHECKED Danny LaLonde	LAYOUT	BY John O'Mara
QUANTITIES	BY April Pearson	CHECKED Yiwan Huang	SPECIFICATIONS	BY James Choi

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO. 24-0205  
POST MILE M 8.67

**WINTERS STREET UC (WIDEN)  
GENERAL PLAN**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	953	1012

Eric Watson		4/6/10
REGISTERED CIVIL ENGINEER		DATE
9-7-10		
PLANS APPROVAL DATE		

Eric Watson		No. 64273
REGISTERED PROFESSIONAL ENGINEER		Exp. 6-30-11
STATE OF CALIFORNIA		CIVIL

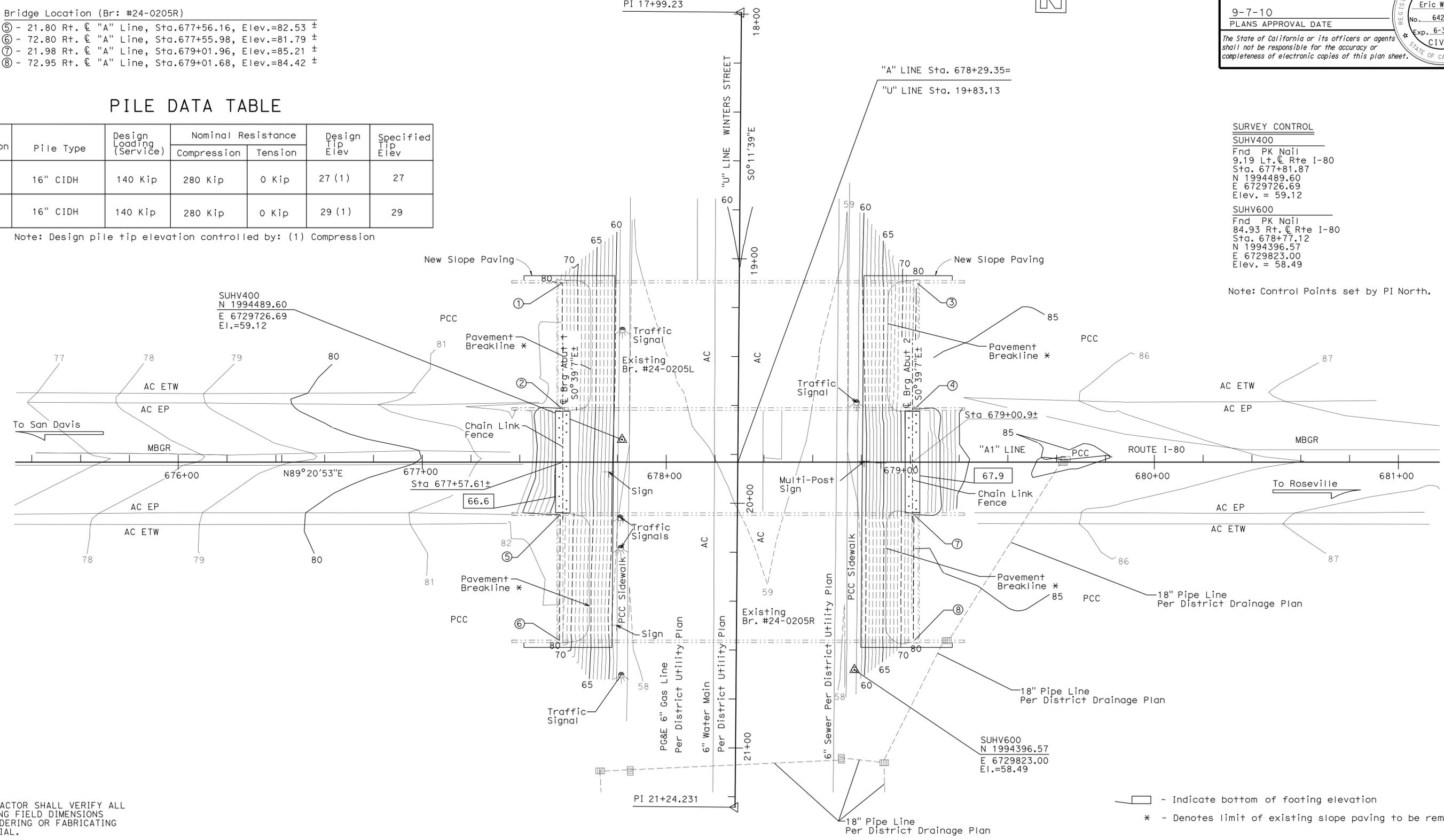
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- Bridge Location (Br: #24-0205L)
- ① - 73.10 Lt. C "A" Line, Sta. 677+57.19, Elev.=81.76 ±
  - ② - 22.27 Lt. C "A" Line, Sta. 677+56.73, Elev.=82.53 ±
  - ③ - 73.15 Lt. C "A" Line, Sta. 679+02.93, Elev.=84.47 ±
  - ④ - 22.16 Lt. C "A" Line, Sta. 679+02.19, Elev.=85.20 ±
- Bridge Location (Br: #24-0205R)
- ⑤ - 21.80 Rt. C "A" Line, Sta. 677+56.16, Elev.=82.53 ±
  - ⑥ - 72.80 Rt. C "A" Line, Sta. 677+55.98, Elev.=81.79 ±
  - ⑦ - 21.98 Rt. C "A" Line, Sta. 679+01.96, Elev.=85.21 ±
  - ⑧ - 72.95 Rt. C "A" Line, Sta. 679+01.68, Elev.=84.42 ±

### PILE DATA TABLE

Location	Pile Type	Design Loading (Service)	Nominal Resistance		Design Tip Elev	Specified Tip Elev
			Compression	Tension		
Abut 1	16" CIDH	140 Kip	280 Kip	0 Kip	27 (1)	27
Abut 2	16" CIDH	140 Kip	280 Kip	0 Kip	29 (1)	29

Note: Design pile tip elevation controlled by: (1) Compression



**SURVEY CONTROL**

**SUV400**  
 Fnd PK Nail  
 9.19 Lt. C Rte I-80  
 Sta. 677+81.87  
 N 1994489.60  
 E 6729726.69  
 Elev. = 59.12

**SUV600**  
 Fnd PK Nail  
 84.93 Rt. C Rte I-80  
 Sta. 678+77.12  
 N 1994396.57  
 E 6729823.00  
 Elev. = 58.49

Note: Control Points set by PI North.

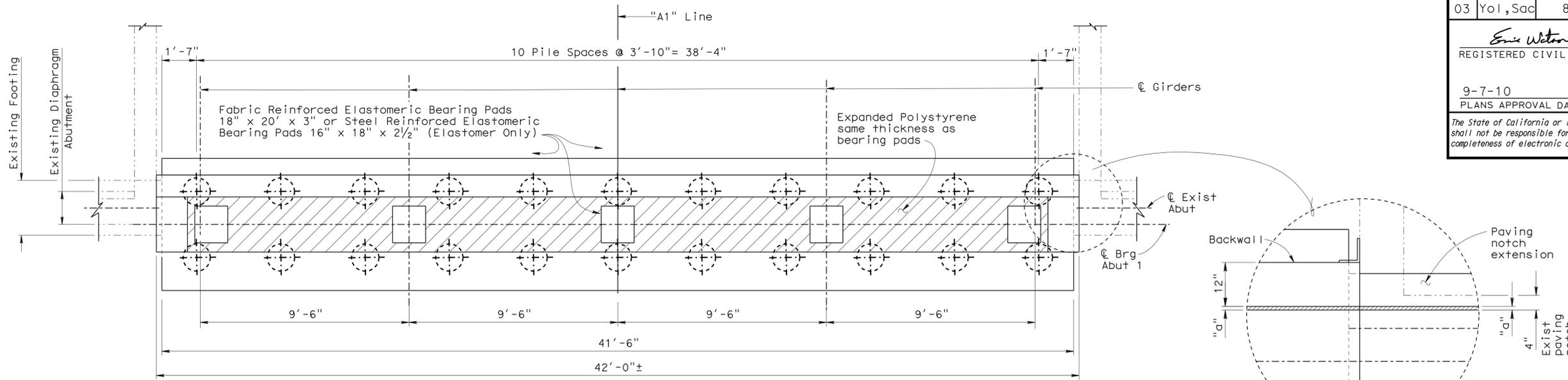
NOTE:  
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□ - Indicate bottom of footing elevation  
 \* - Denotes limit of existing slope paving to be removed

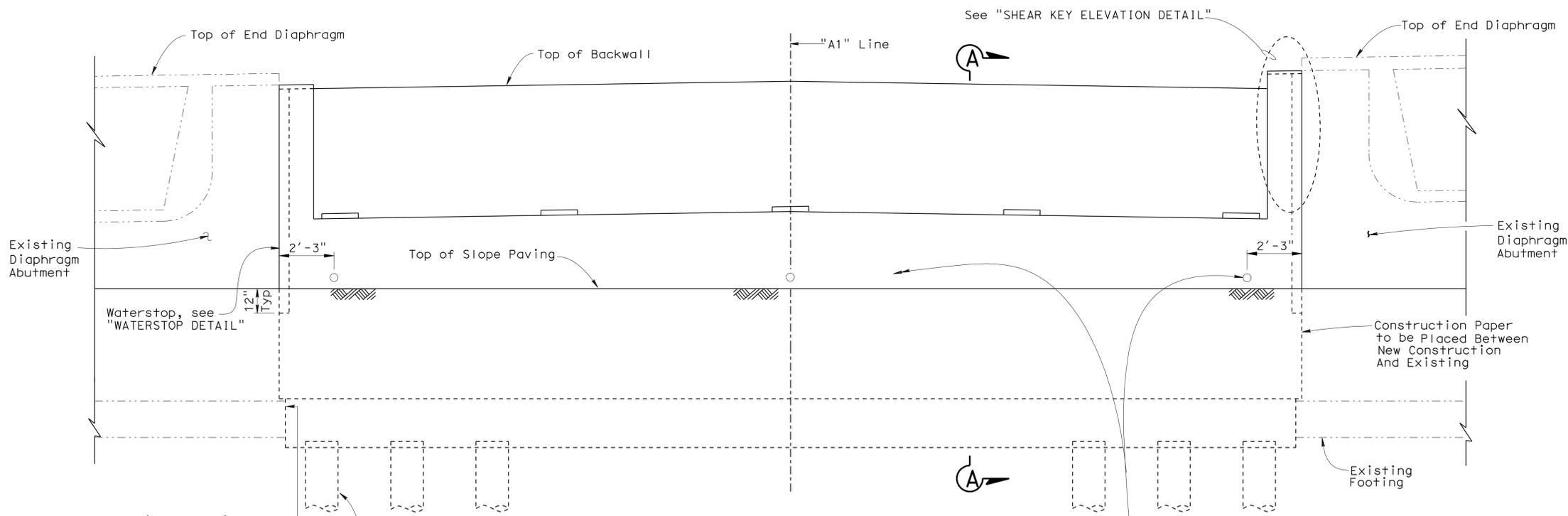
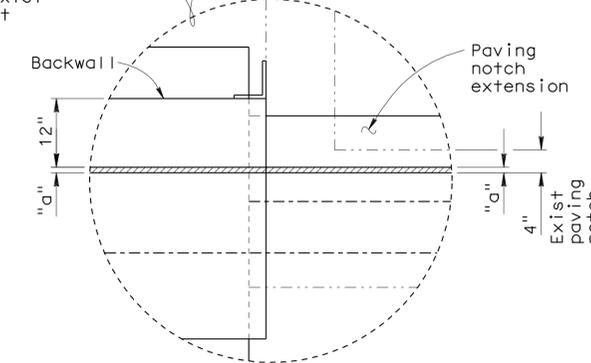
<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN	By: Timothy Schmalz	CHECKED	Danny LaLonde	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO.	24-0205	<b>WINTERS STREET UC (WIDEN)</b> FOUNDATION PLAN						
SCALE	VERT. DATUM	NGVD29	PHOTOGRAMMETRY	AS OF: X	DETAILS	By: Jinrong Zhou	CHECKED			Danny LaLonde	POST MILE			8.67				
1"=20'	HORZ. DATUM	NAD83 (1991.35)	SURVEYED	BY	DISTRICT/E. LOPEZ	CHECKED	BY			E. LOPEZ 05/2007	REVISION DATES							
ALIGNMENT TIES				DISTR. TRAVERSE SHEET	DRAFTED	BY	Y. ZHANG 05/2007	CHECKED	BY	T. ZOLNIKOVA 05/2007	<table border="1"> <tr> <td>5/8/2007</td> <td>12/03/08</td> <td>03/24/08</td> <td>08/19/08</td> <td>02/22/09</td> <td>04/06/10</td> </tr> </table>		5/8/2007	12/03/08	03/24/08	08/19/08	02/22/09	04/06/10
5/8/2007	12/03/08	03/24/08	08/19/08	02/22/09	04/06/10													
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)								ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET	2	OF	16			

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:29

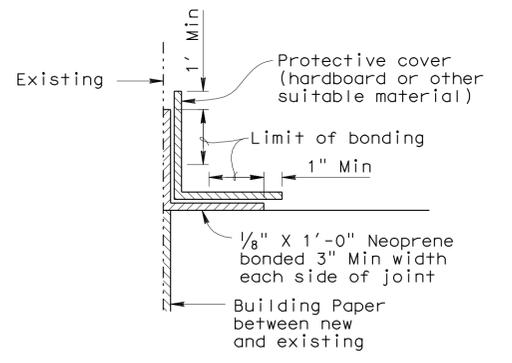
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1, Sac	80	R10.9/R11.7 M0.0/M10.4	954	1012
Eric Watson			4/6/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			No. 64273		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.			Exp. 6-30-11 CIVIL STATE OF CALIFORNIA		



**PLAN**  
3/8"=1'



**ELEVATION**  
3/8"=1'



**WATERSTOP DETAIL**  
No Scale

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

B0-13  
13-2

B2-3

B0-3  
3-1

- Notes:
1. Abutment 1 shown, Abutment 2 similar.
  2. For "SECTION A-A" see "ABUTMENT DETAILS NO. 1" sheet.
  3. For "SHEAR KEY ELEVATION DETAIL", see "ABUTMENT DETAILS NO. 2" sheet
  4. All piles not shown in Elevation

DESIGN	BY Timothy Schmalz	CHECKED Danny LaLonde
DETAILS	BY Jinrong Zhou/Jie Tang	CHECKED Danny LaLonde
QUANTITIES	BY April Pearson	CHECKED Yihwin Huang

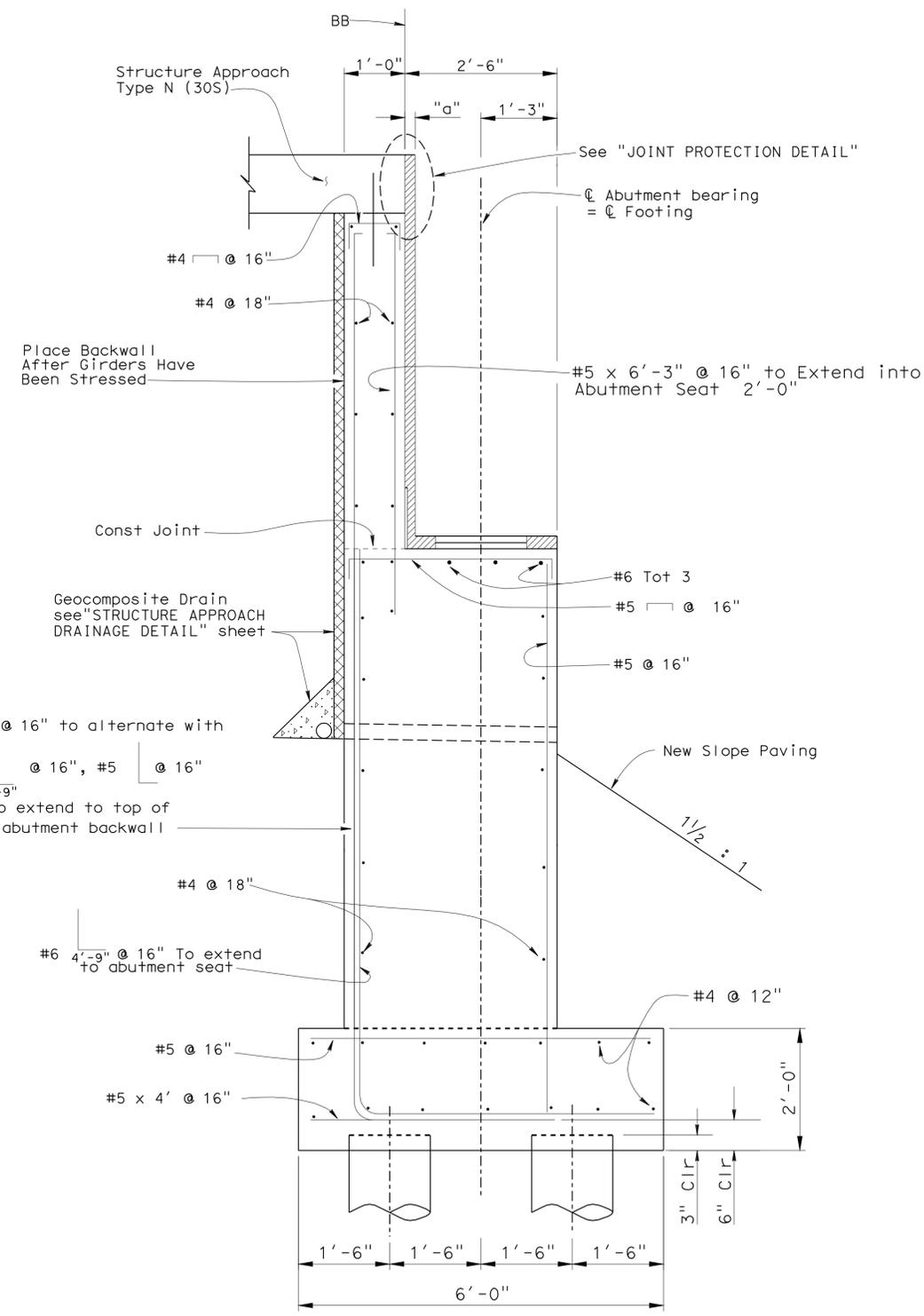
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.	24-0205
POST MILE	M8.67

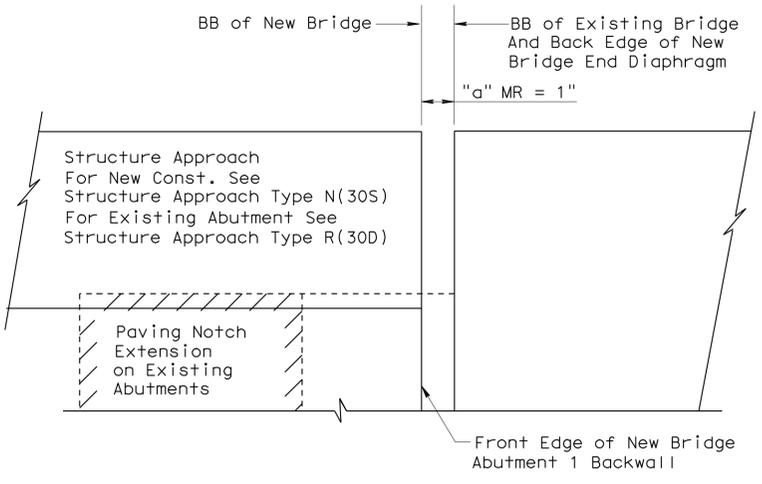
WINTERS STREET UC (WIDEN)  
ABUTMENT LAYOUT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	955	1012
Eric Watson			4/6/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6-30-11		
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.			STATE OF CALIFORNIA CIVIL		



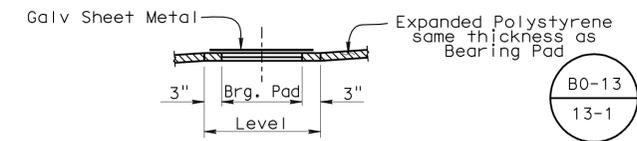
**SECTION A-A**  
3/4" = 1'-0"

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



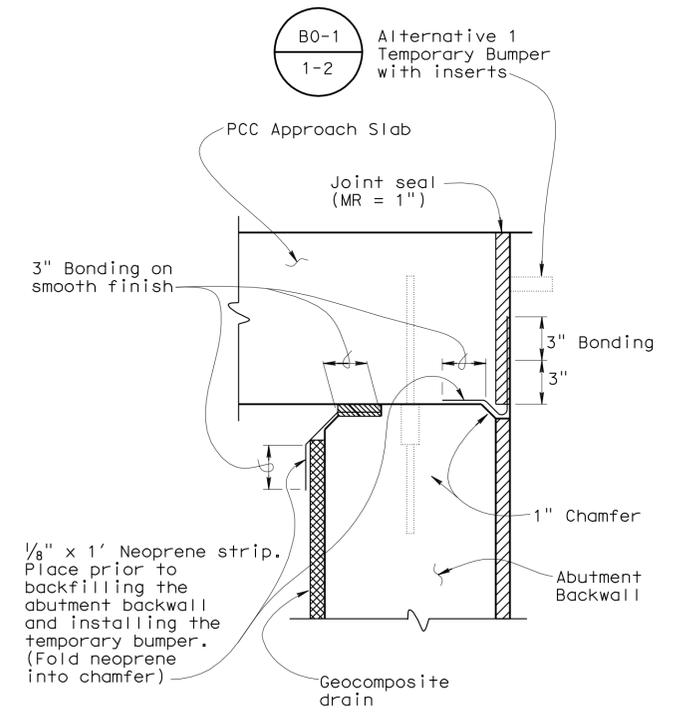
**EXISTING AND NEW JOINT SEAL DETAIL**  
No Scale

- Note:
- 1: The BB of new bridge and BB of existing bridge are offset by distance "a" thereby maintaining straight an continuous joint seal through the existing bridge and across the new.
  - 2: Joint seal shown for abutment 1 joint seal for abutment 2 similar.



**BEARING PAD DETAIL**  
No Scale

Bearing pads to be placed with long dimension along bridge transverse axis



**JOINT PROTECTION DETAIL**  
No Scale

Notes:  
Abutment 1 shown, Abutment 2 similar.

DESIGN	BY	Timothy Schmalz	CHECKED	Danny LaLonde	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	24-0205	WINTERS STREET UC (WIDEN) ABUTMENT DETAILS NO. 1	
	DETAILS	BY	Jinrong Zhou	CHECKED			Danny LaLonde	POST MILE		M 8.67
	QUANTITIES	BY	April Pearson	CHECKED			Yihwan Huang	REVISION DATES		03/08/07 03/14/08 04/24/09 05/06/10 6/8/10
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 4 OF 16	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	956	1012

<i>Eric Watson</i>	4/6/10
REGISTERED CIVIL ENGINEER	DATE
9-7-10	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER

Eric Watson

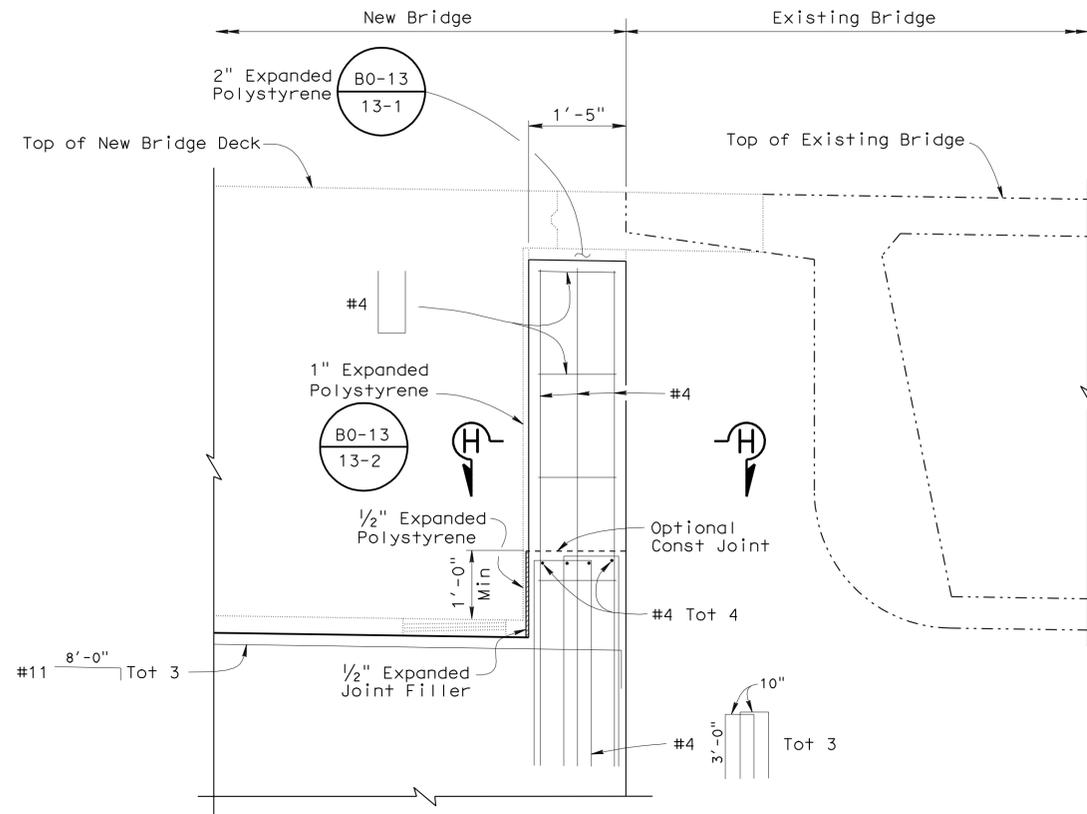
No. 64273

Exp. 6-30-11

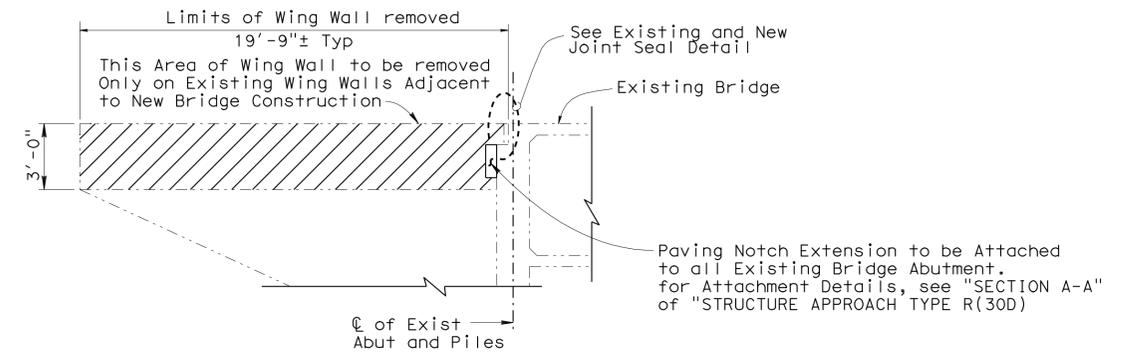
CIVIL

STATE OF CALIFORNIA

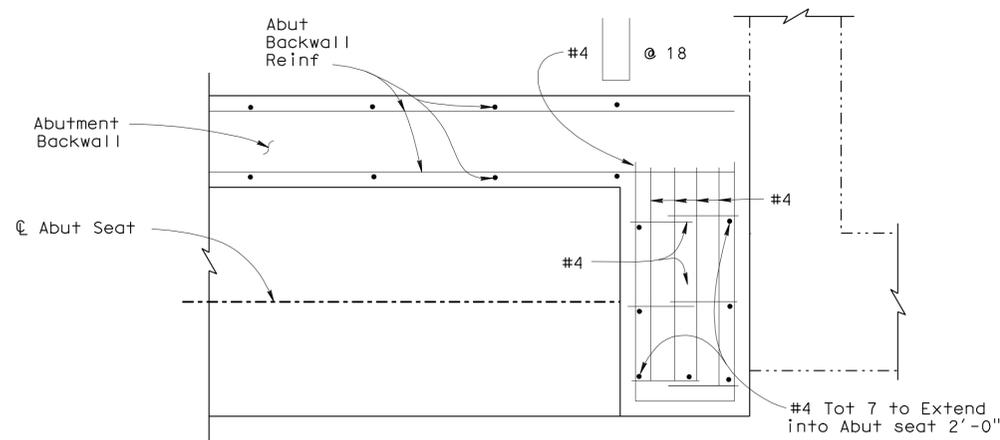
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



**SHEAR KEY ELEVATION DETAIL**  
3/4" = 1'-0"



**BRIDGE REMOVAL AND PAVING NOTCH EXTENSION DETAIL**  
NO SCALE



**SECTION H-H**  
1" = 1'-0"

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

Legend:  
 - Indicates limits of Bridge removal

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Timothy Schmalz	CHECKED Danny LaLonde	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO.	<b>WINTERS STREET UC (WIDEN)</b> <b>ABUTMENT DETAILS NO. 2</b>	
	DETAILS	BY Jinrong Zhou/Jie Tang	CHECKED Danny LaLonde			24-0205		
	QUANTITIES	BY April Pearson	CHECKED Yihwin Huang			POST MILE M 8.67		
				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES		
				0 1 2 3	REVISION DATES 04/15/07 05/13/08 08/26/08 03/09/09 04/24/09 04/06/10		SHEET 5	OF 16

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:29

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	957	1012
Eric Watson			4/6/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6-30-11		
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.					

## GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

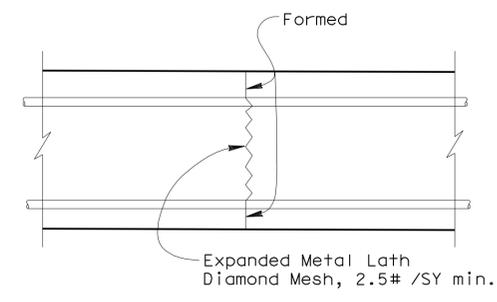
DESIGN: AASHTO LRFD Specifications, 3rd Edition with the 2006 Interim Revisions and Caltrans Amendments, V3.06.01.

DEAD LOAD: Includes 35 psf for future wearing surface

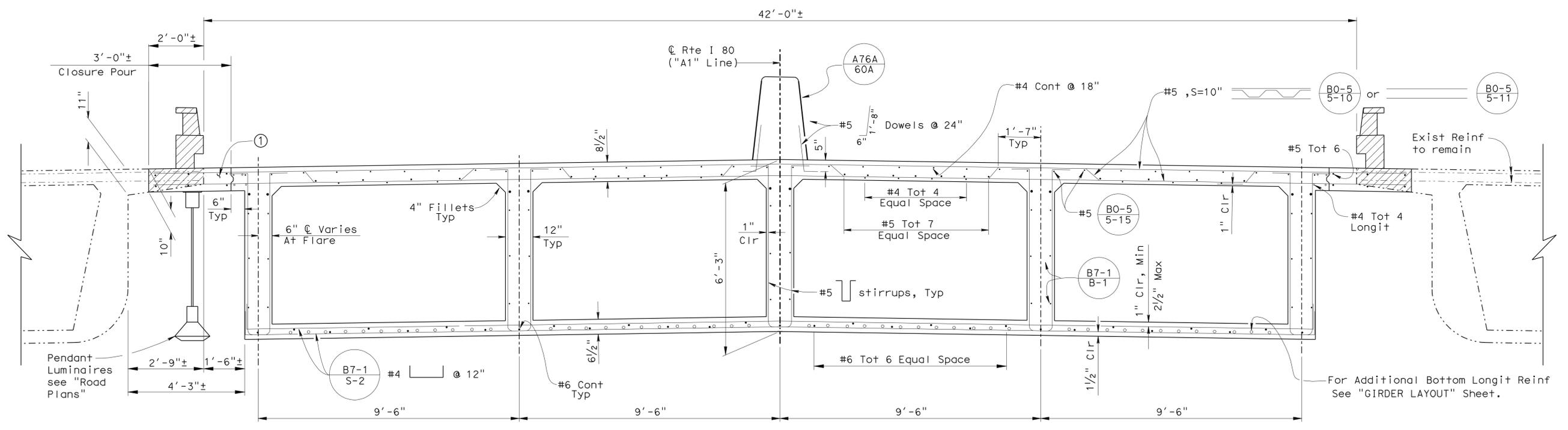
LIVE LOADING: HL 93 and permit design vehicle

REINFORCED CONCRETE:  $f_y = 60$  Ksi  $f'_c = 3.6$  Ksi  $n = 8$

PRESTRESSING CONCRETE: See "PRESTRESSING NOTES" on "GIRDER LAYOUT" sheet.



## ALTERNATIVE DECK CONSTRUCTION JOINT TOP OR BOTTOM SLAB



**TYPICAL SECTION**  
1/2" = 1'

- Indicate bridge removal

- Notes:
- Mechanical splice required to lap closure pour new & existing #5 top slab transverse reinforcement
  - Falswork shall be removed as soon as permitted by the specifications. Closure pour shall not be placed sooner than 60 days after the falswork has been released

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

DESIGN	BY Timothy Schmalz	CHECKED Danny LaLonde
DETAILS	BY Jinrong Zhou	CHECKED Danny LaLonde
QUANTITIES	BY April Pearson	CHECKED Yihwan Huang

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 1**

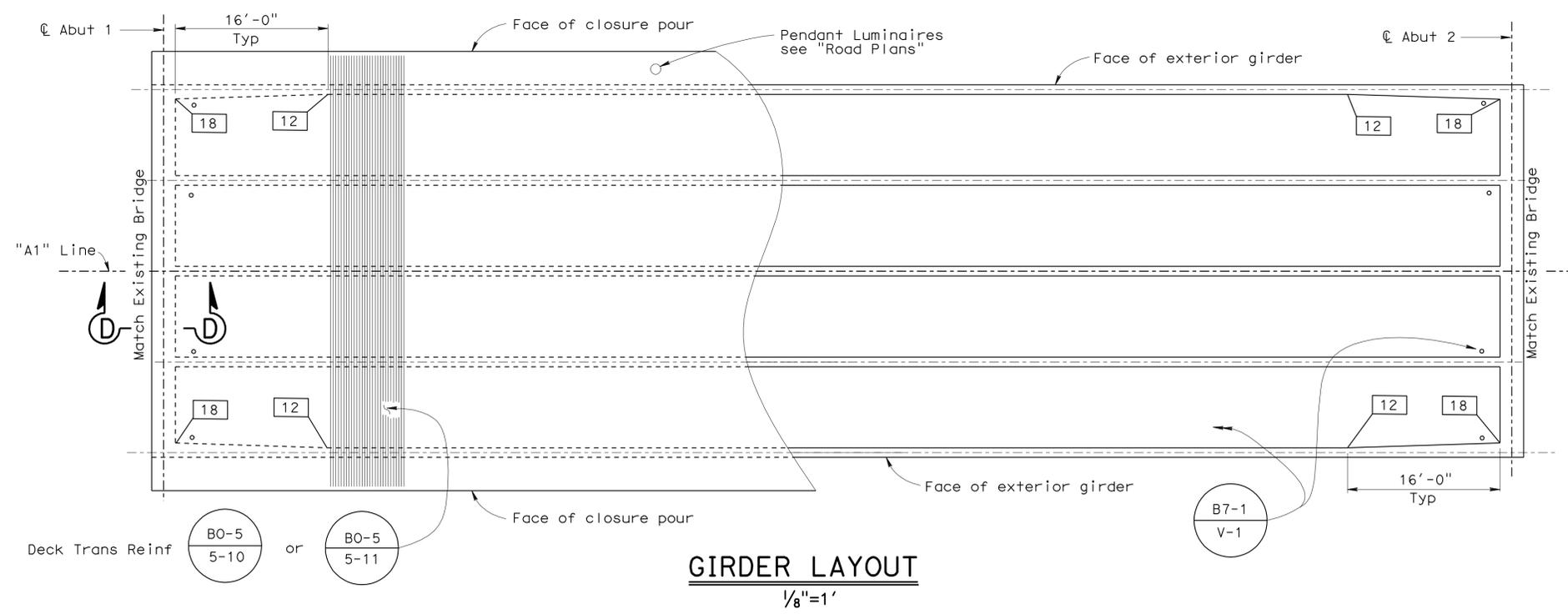
BRIDGE NO.  
24-0205  
POST MILE  
M 8.67

**WINTERS STREET UC (WIDEN)**  
**TYPICAL SECTION**

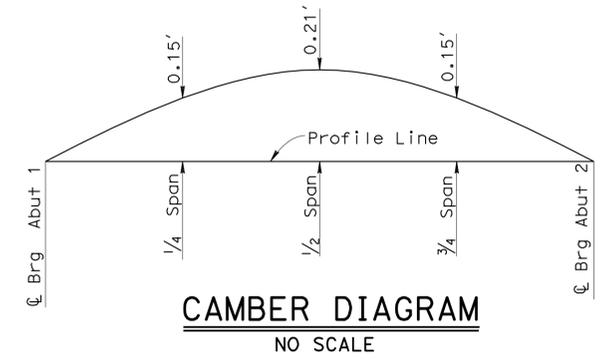
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	958	1012
Eric Watson			4/6/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6-30-11		
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.					

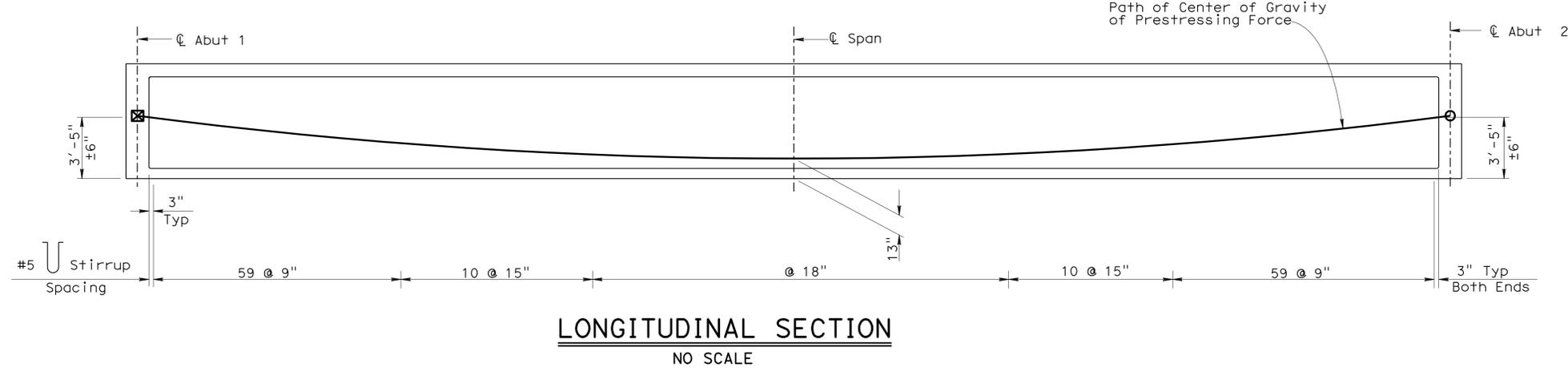
X - Indicates Girder stem width in inches.



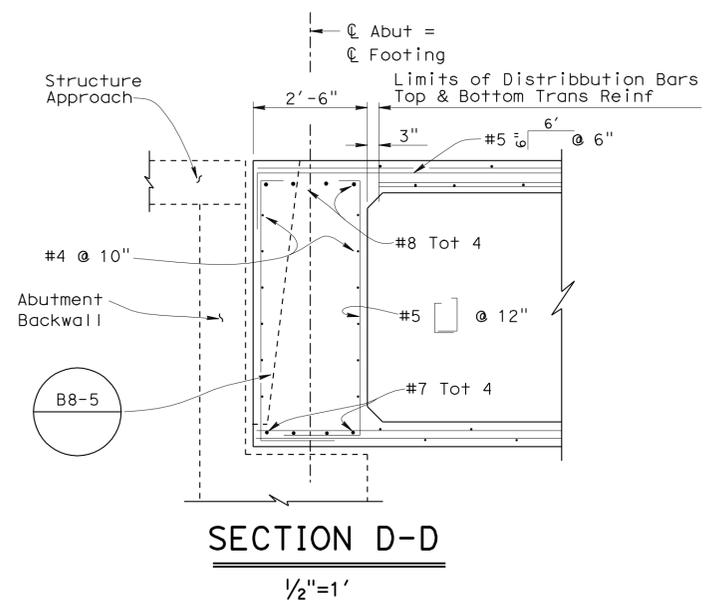
**GIRDER LAYOUT**  
1/8"=1'



**CAMBER DIAGRAM**  
NO SCALE

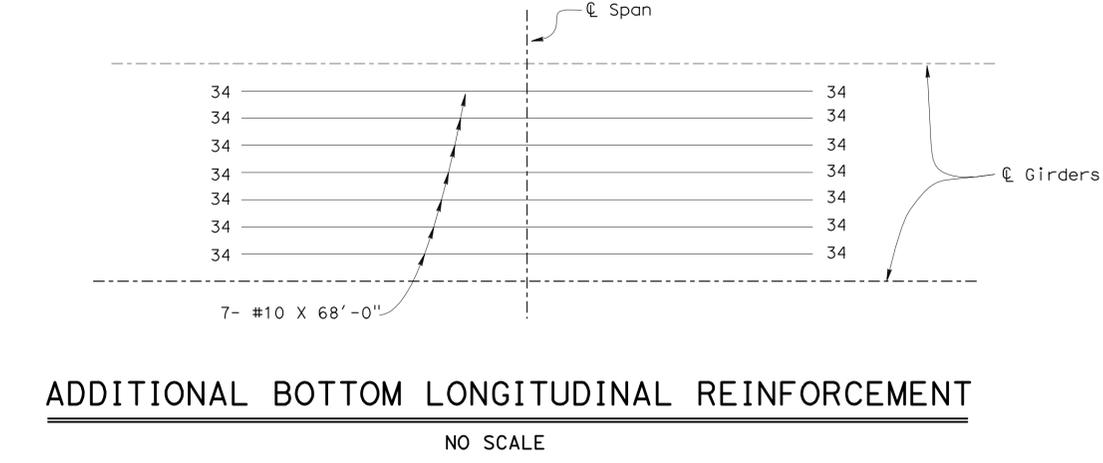


**LONGITUDINAL SECTION**  
NO SCALE

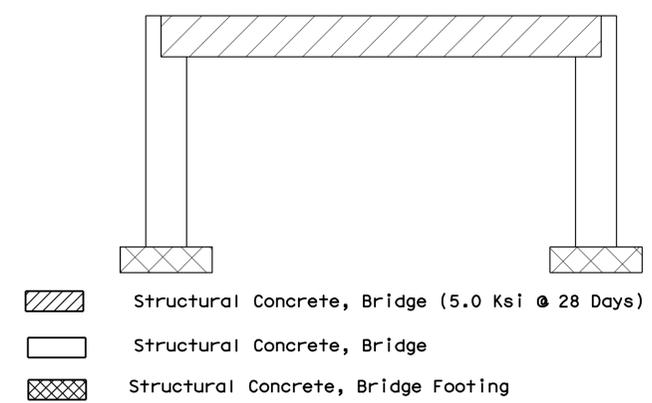


**SECTION D-D**  
1/2"=1'

**PRESTRESSING NOTES**  
 270 KSI Low Relaxation Strand:  
 $P_{jack}$  = 12,750 kips  
 Anchor Set = 3/8 in  
 Total Number of Girders = 5  
 Distribution of prestress force ( $P_{jack}$ ) between girders shall not exceed the ratio of 3:2.  
 Maximum final force variation between girders shall not exceed 725 kips.  
 Concrete:  $f'_c$  = 5.0 ksi @ 28 days  
 $f'_ci$  = 4.0 ksi @ time of stressing  
 Contractor shall submit elongation calculations based on initial stress at  
 $\lambda = 0.954$  times jacking stress.  
 One end stressing shall be performed at right end.



**ADDITIONAL BOTTOM LONGITUDINAL REINFORCEMENT**  
NO SCALE



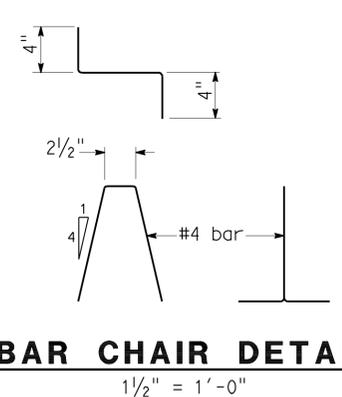
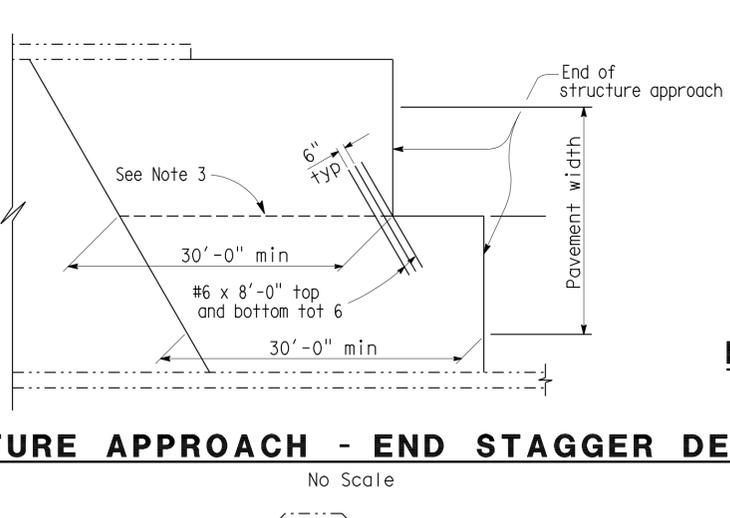
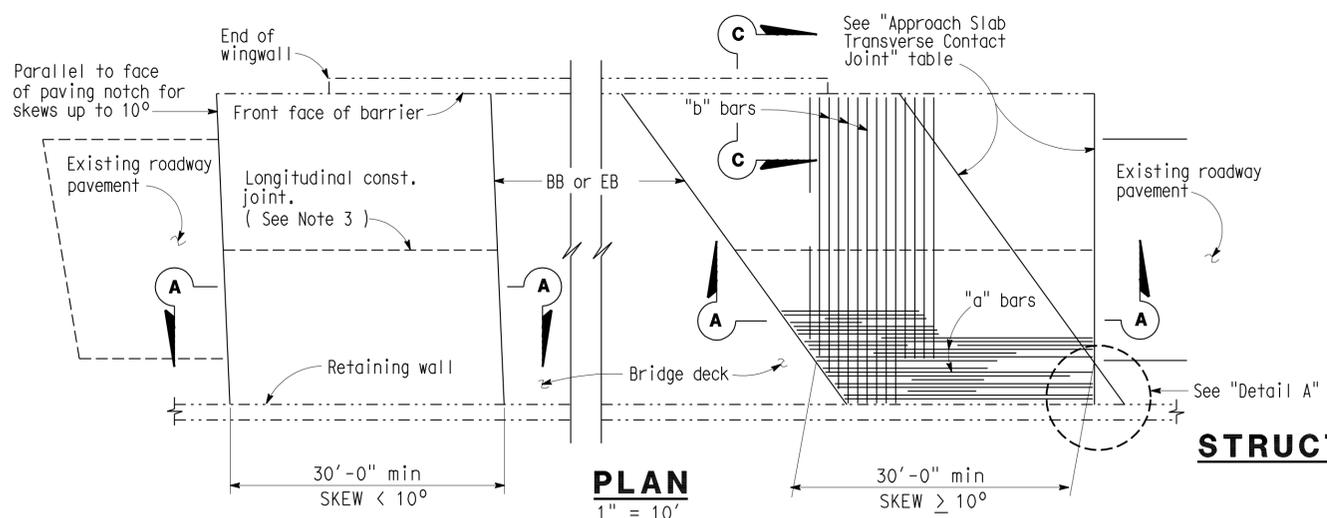
**CONCRETE STRENGTH AND TYPE LIMITS**  
No Scale

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

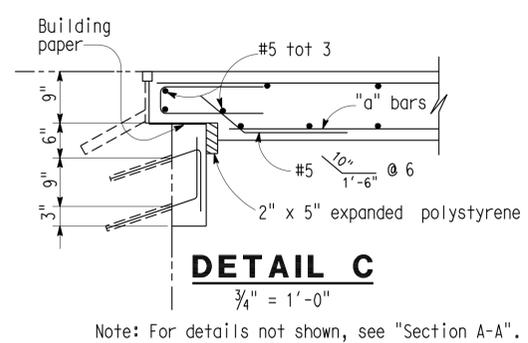
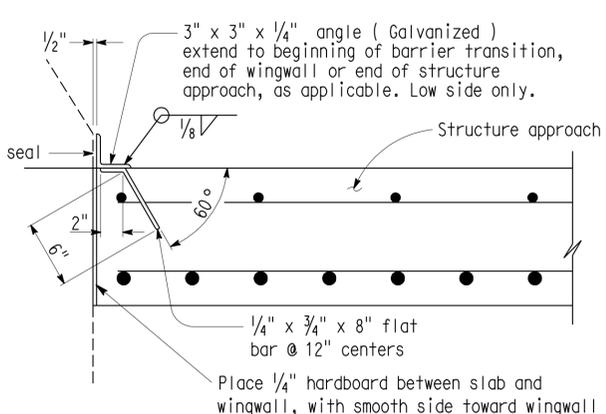
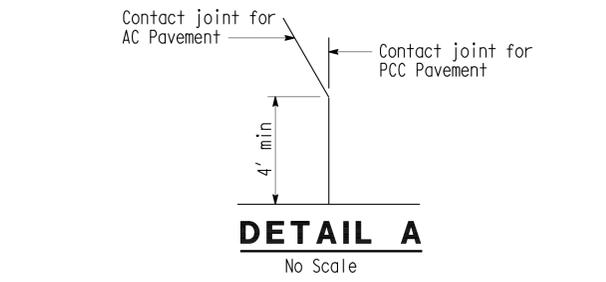
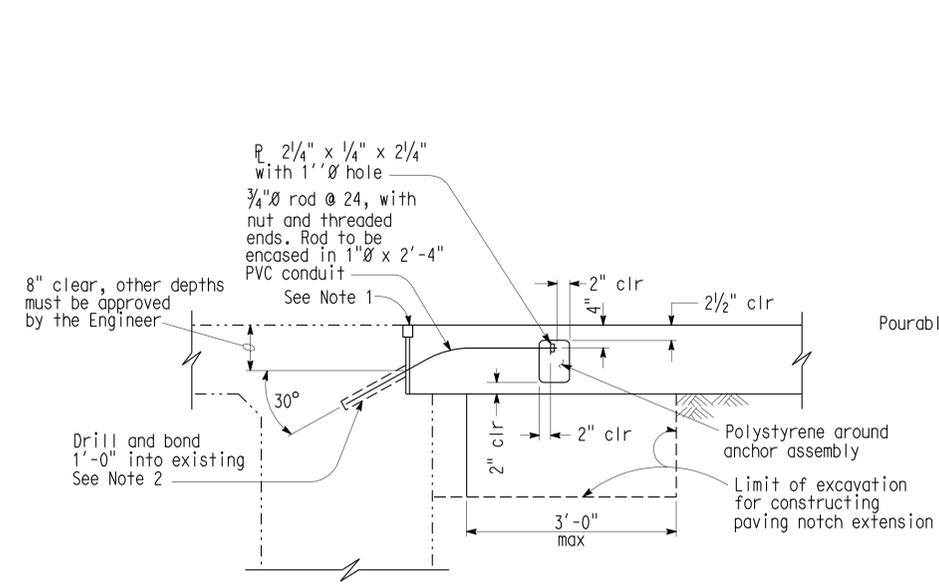
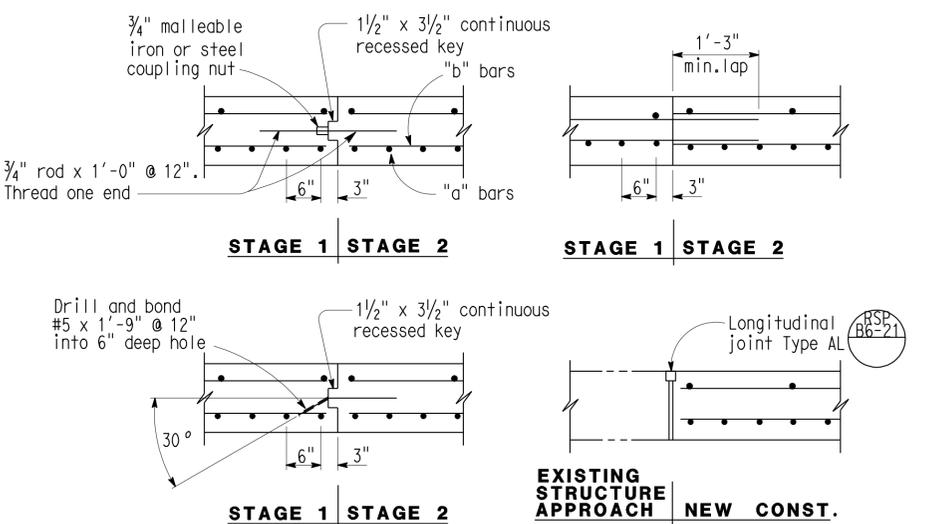
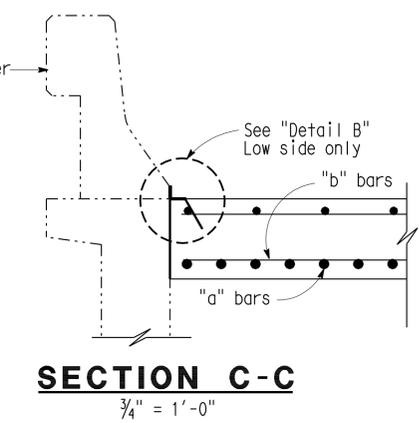
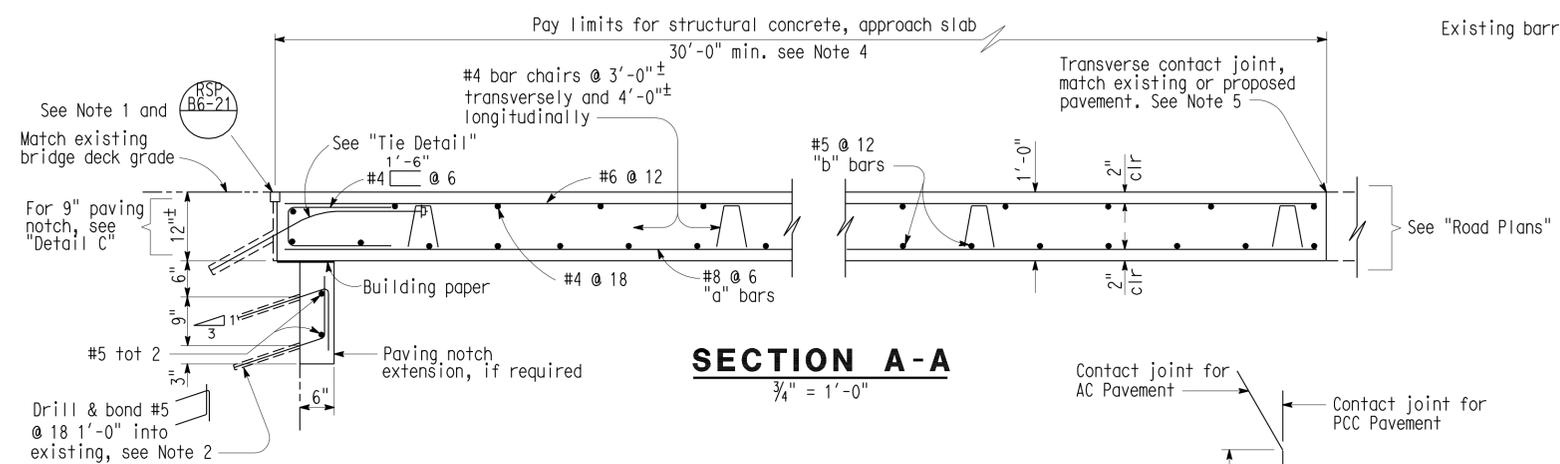
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Timothy Schmalz	CHECKED Danny LaLonde	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	WINTERS STREET UC (WIDEN)				
	DETAILS	BY Jinrong Zhou	CHECKED Danny LaLonde			24-0205	GIRDER LAYOUT				
	QUANTITIES	BY April Pearson	CHECKED Yihwan Huang			POST MILE	M 8.67				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 03 EA 3797U1	REVISION DATES				SHEET 7 OF 16
FILE => 24-0205-1-g_1o01.dgn						DISREGARD PRINTS BEARING EARLIER REVISION DATES				04/16/07 03/12/08 08/21/08 03/07/09 04/24/09 04/06/10	

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:29

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	959	1012
Eric Watson REGISTERED ENGINEER - CIVIL			4/6/10	Eric Watson No. 64273 Exp. 6-30-11 CIVIL STATE OF CALIFORNIA	
9-7-10					
PLANS APPROVAL DATE					



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10 - 45°	Parallel to face of P N use ( Detail A )	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use ( Detail A )	Stagger at each lane line



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

- NOTES:**
- For details not shown or noted, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - Space to avoid existing prestress anchorages and main reinforcement.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - Transverse contact joint shall be a minimum of 5' from an existing or constructed weakened plane joint.
  - For transverse contact joint with new PCC paving refer to Standard Plan A35-A.

STANDARD DRAWING				STATE OF CALIFORNIA		BRIDGE NO.		WINTERS STREET UC (WIDEN)			
FILE NO. XS 22-20	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	APPROVAL RECOMMENDED BY	DEPARTMENT OF TRANSPORTATION		24-0205		STRUCTURE APPROACH TYPE R(30D)			
DESIGN DATE 8/92	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	DESIGN SUPERVISOR	DIVISION OF STRUCTURES		POST MILE M 8.67		REVISION DATES (PRELIMINARY STAGE ONLY)			
SUBMITTED BY M. HA				STRUCTURE DESIGN 1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 8 OF 16			
DS OSD 2147A (CADD 7/97)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 EA 3797U1		03/21/08			

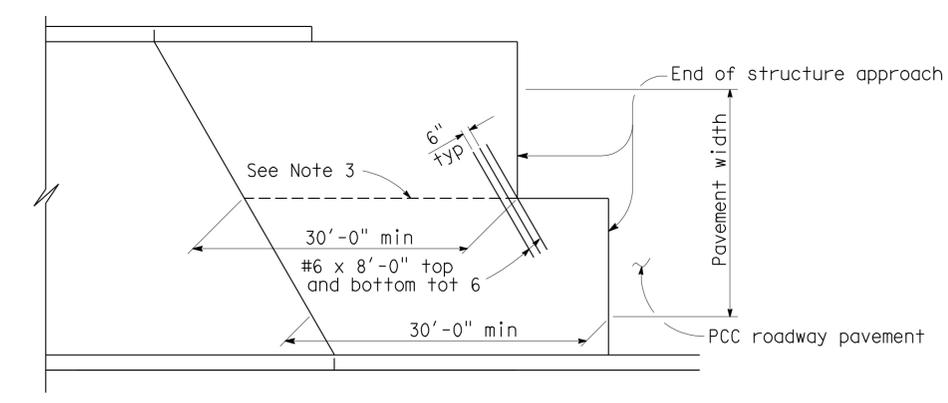
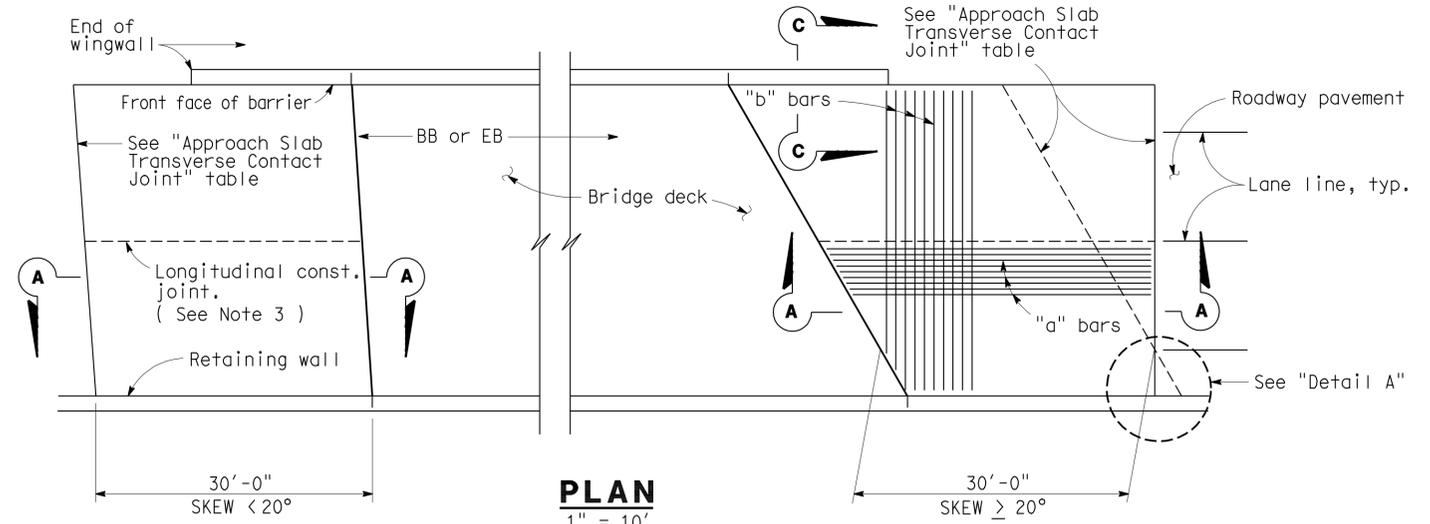
RELEASED 11-4-97

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	960	1012

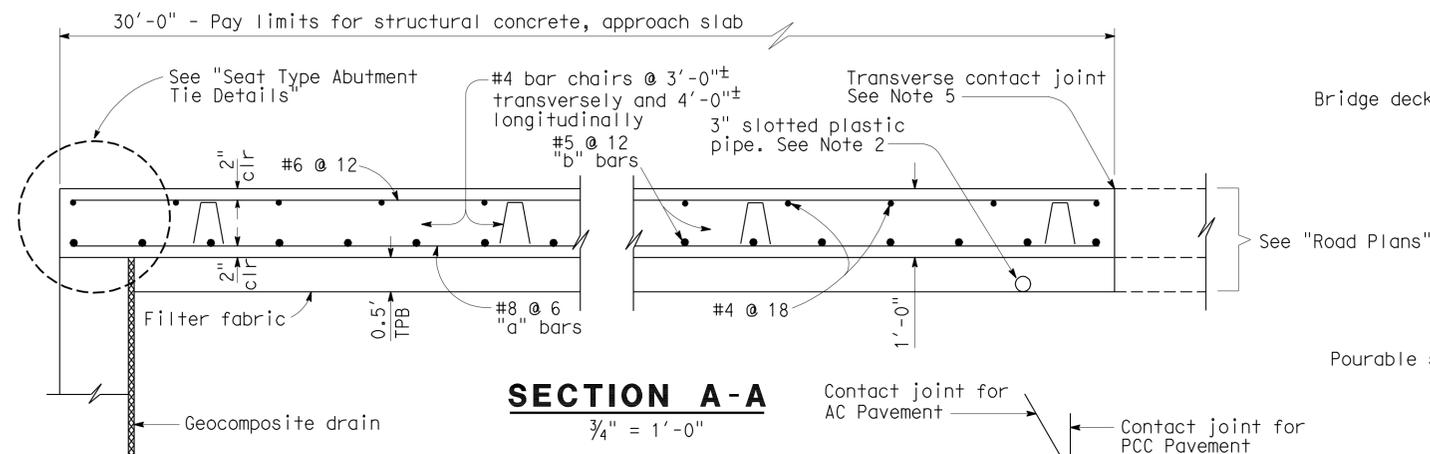
  

Eric Watson		4/6/10
REGISTERED ENGINEER - CIVIL		
9-7-10		
PLANS APPROVAL DATE		

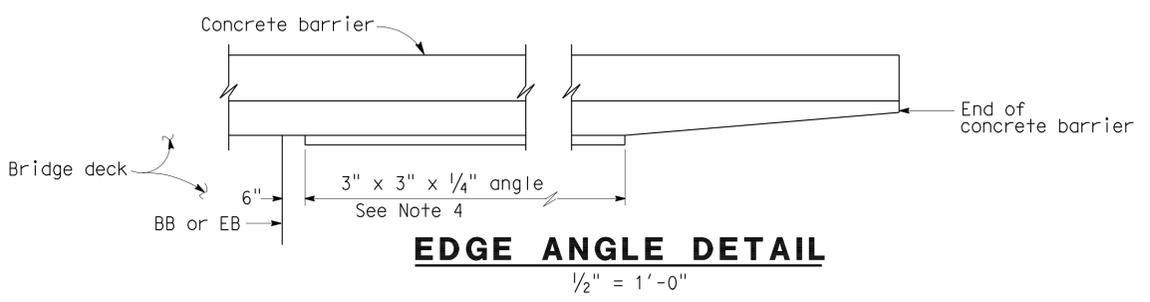
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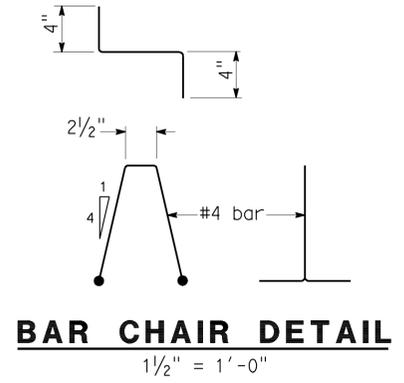
**STRUCTURE APPROACH - END STAGGER DETAIL**  
No Scale



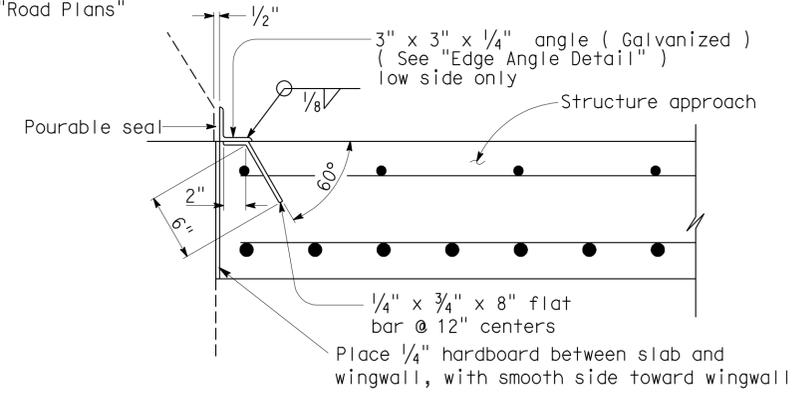
**SECTION A-A**  
3/4" = 1'-0"



**EDGE ANGLE DETAIL**  
1/2" = 1'-0"

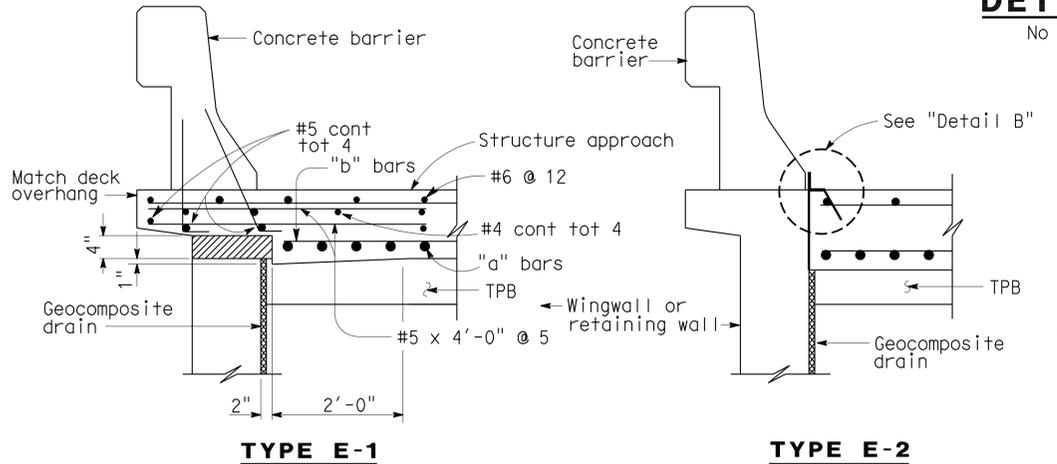


**BAR CHAIR DETAIL**  
1 1/2" = 1'-0"

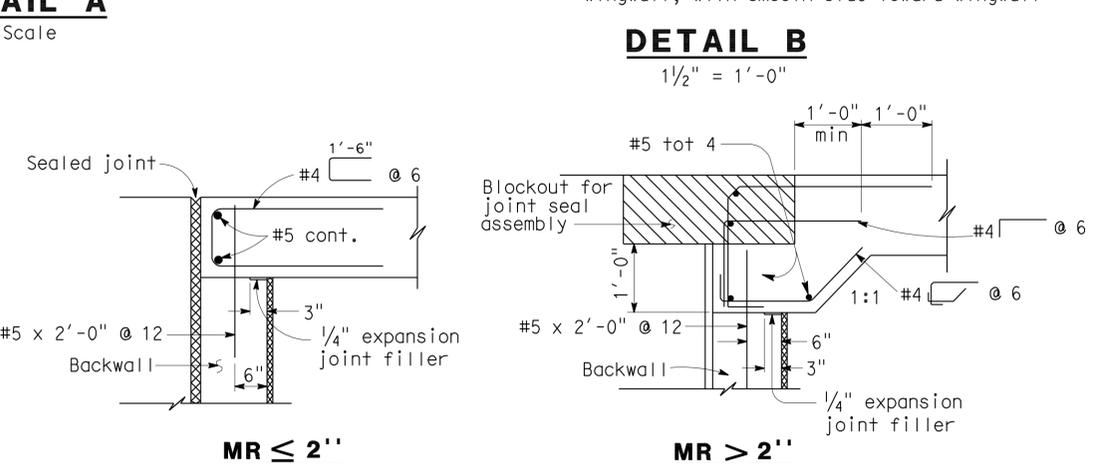


**DETAIL B**  
1/2" = 1'-0"

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20 - 45°	Parallel to face of P N use ( Detail A )	Stagger lines 24' to 36' apart.
> 45°	Parallel to face of P N use ( Detail A )	Stagger at each lane line.



**SECTION C-C**  
3/4" = 1'-0"



**SEAT TYPE ABUTMENT TIE DETAILS ( SEE NOTE 1 )**  
3/4" = 1'-0"

- NOTES:**
- For details not shown, see Structure Plans. For MR ≤ 2", adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - For drainage details, see "Structure Approach Drainage Details" sheet.
  - Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines.
  - End angle at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
  - For transverse contact joint with new PCC paving, refer to Standard Plan A35-A.
  - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along centerline of roadway.

Remove all polystyrene.

STANDARD DRAWING			
FILE NO. XS 22-18	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	APPROVAL/RECOMMENDED BY
DESIGN DATE 8/92	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	
	SUBMITTED BY M. HA		DESIGN SUPERVISOR

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF STRUCTURES  
STRUCTURE DESIGN 1

BRIDGE NO. 24-0205  
POST MILE M 8.67

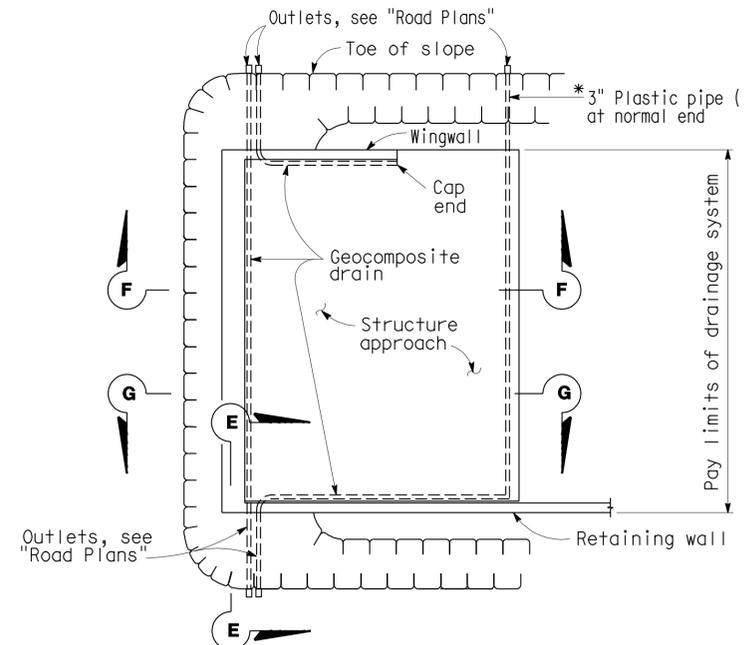
WINTERS STREET UC (WIDEN)	
STRUCTURE APPROACH TYPE N(30S)	
DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)
03/21/08	
SHEET 9	OF 16

RELEASED 11-4-97

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	961	1012
			4/6/10		
Eric Watson			REGISTERED ENGINEER - CIVIL		
			No. 64273 Exp. 6-30-11 CIVIL		
9-7-10			PLANS APPROVAL DATE		

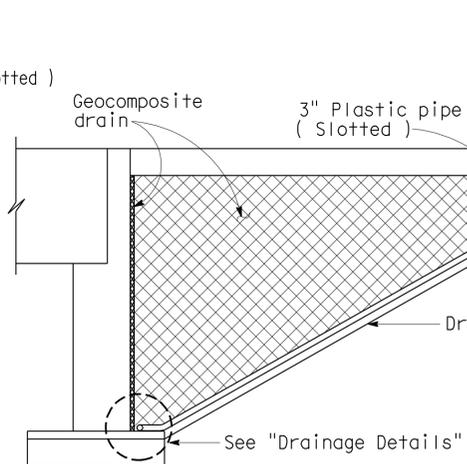


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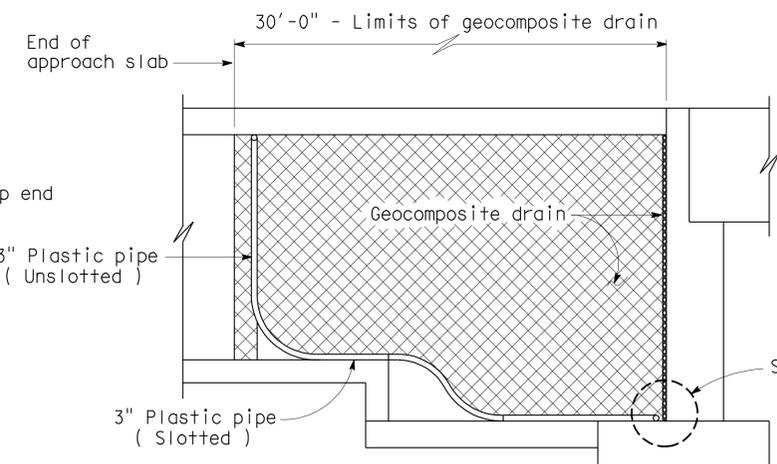


**TYPICAL PLAN**  
1" = 10'

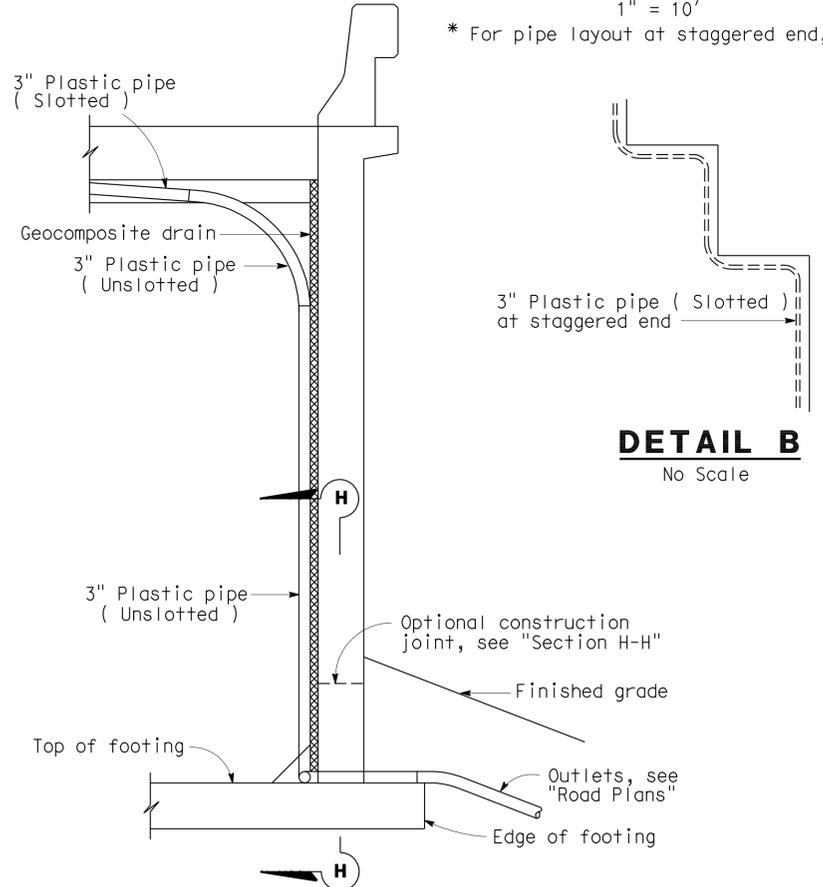
\* For pipe layout at staggered end, see "Detail B."



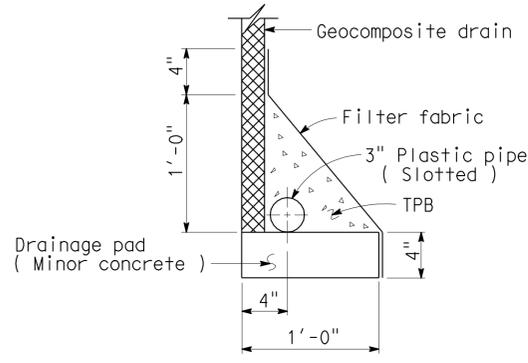
**CANTILEVER WINGWALL SECTION F-F**  
1/4" = 1'-0"



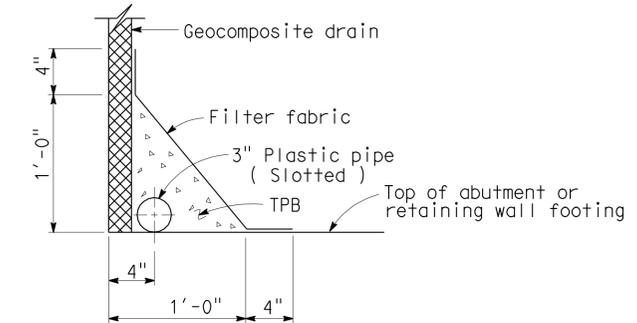
**RETAINING WALL WINGWALL SECTION G-G**  
1/4" = 1'-0"



**DETAIL B**  
No Scale

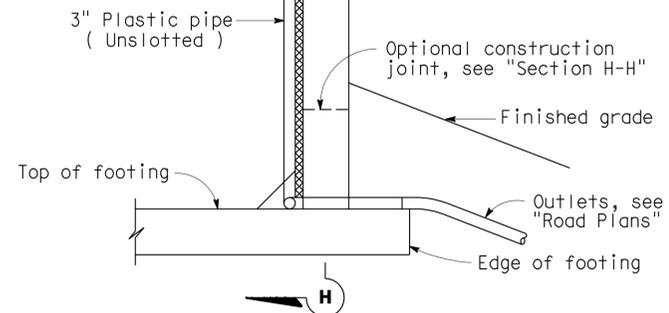


**WITHOUT FOOTING**



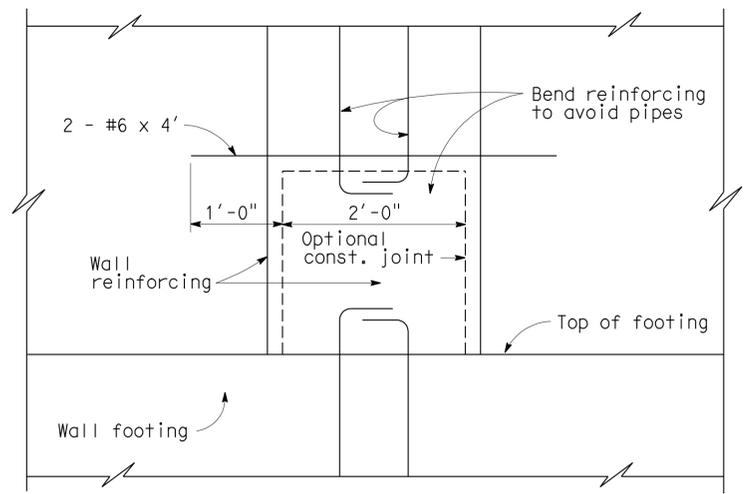
**WITH FOOTING**

**DRAINAGE DETAILS**  
1 1/2" = 1'-0"



**SECTION E-E**  
1/2" = 1'-0"

Note: Bends and junctions in 3" plastic pipe are 30" radius min.



**SECTION H-H**  
1" = 1'-0"

STANDARD DRAWING			
FILE NO. <b>XS 22-17</b>	DESIGN BY <b>M. TRAFFALIS</b>	CHECKED <b>E. THORKILDSEN</b>	APPROVAL/RECOMMENDED BY <i>Richard D. Ford</i>
DESIGN DATE <b>8 / 92</b>	DETAILS BY <b>R. YEE</b>	CHECKED <b>E. THORKILDSEN</b>	DESIGN SUPERVISOR
	SUBMITTED BY <b>M. HA</b>		

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION  
**DIVISION OF STRUCTURES**  
**STRUCTURE DESIGN 1**

BRIDGE NO. 24-0205  
POST MILE M 8.67  
**WINTERS STREET UC(WIDEN)**  
**STRUCTURE APPROACH DRAINAGE DETAILS**

DS OSD 2147A (CADD 7/97)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 03  
EA 3797U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES  
REVISION DATES (PRELIMINARY STAGE ONLY)  
SHEET 10 OF 16

XS2217.DGN VI=1

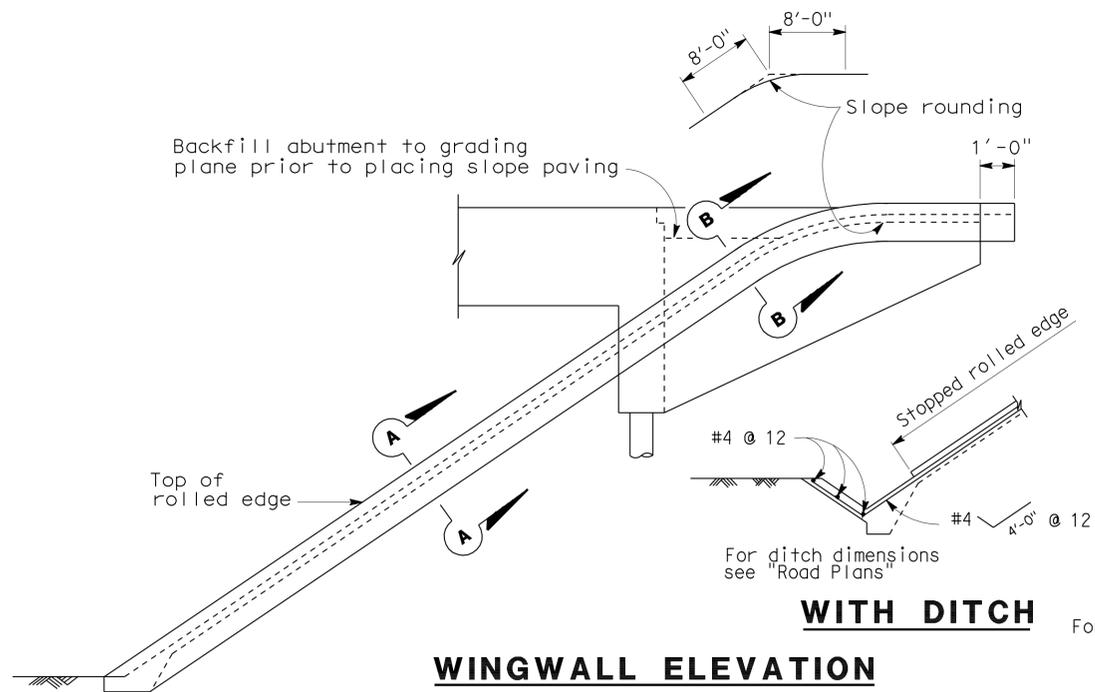
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 MO.0/M10.4	962	1012

Eric Watson 4/6/10  
REGISTERED ENGINEER - CIVIL

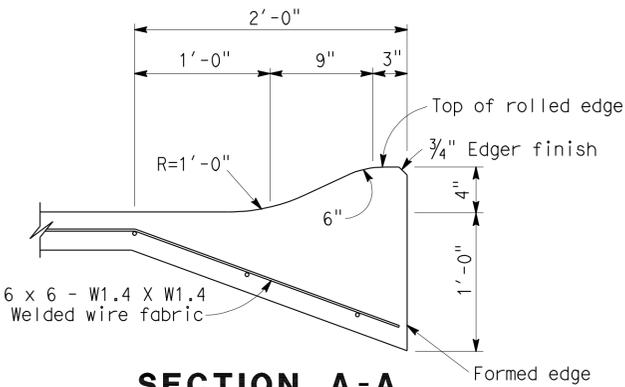
9-7-10  
PLANS APPROVAL DATE

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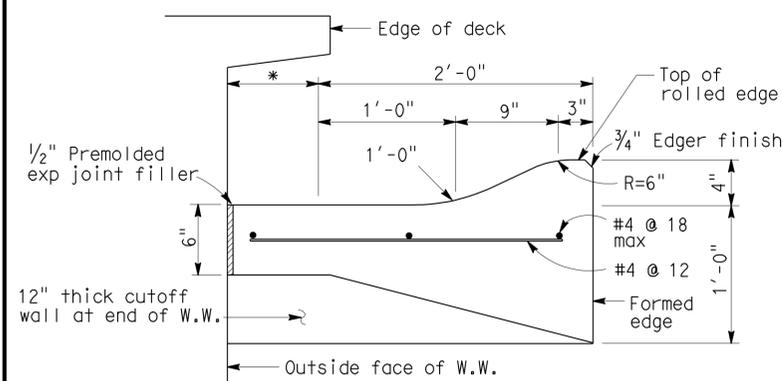
Eric Watson  
No. 64273  
Exp. 6-30-11  
REGISTERED PROFESSIONAL ENGINEER  
CIVIL  
STATE OF CALIFORNIA



**WINGWALL ELEVATION**

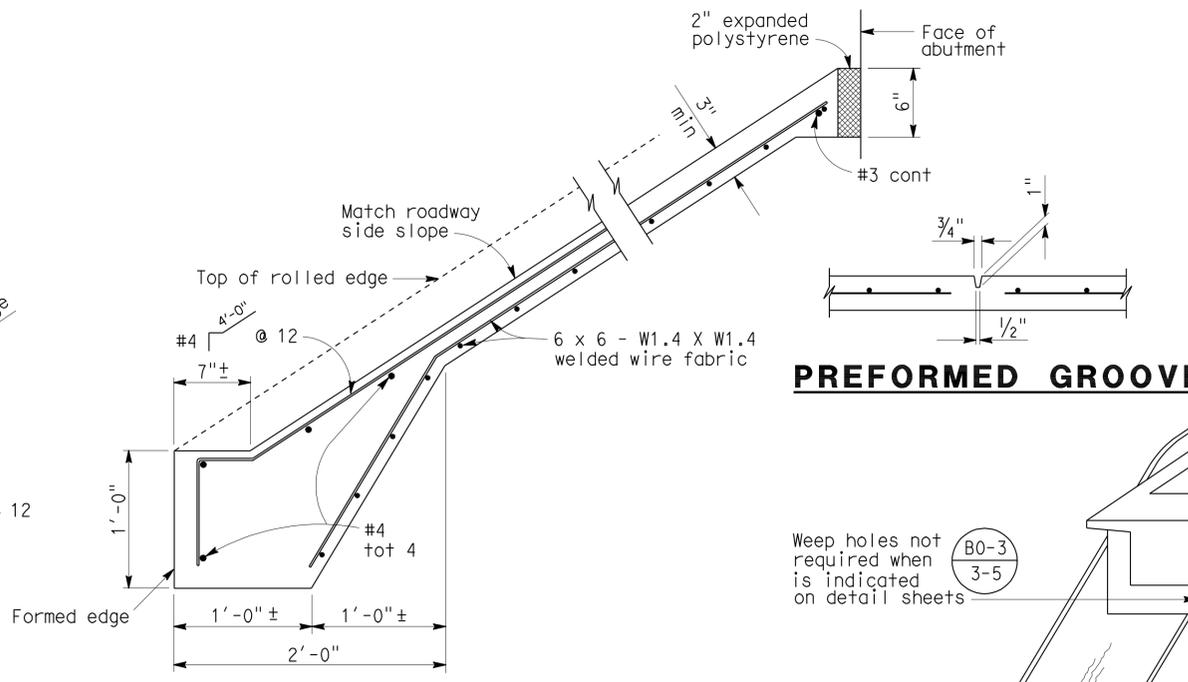


**SECTION A-A**

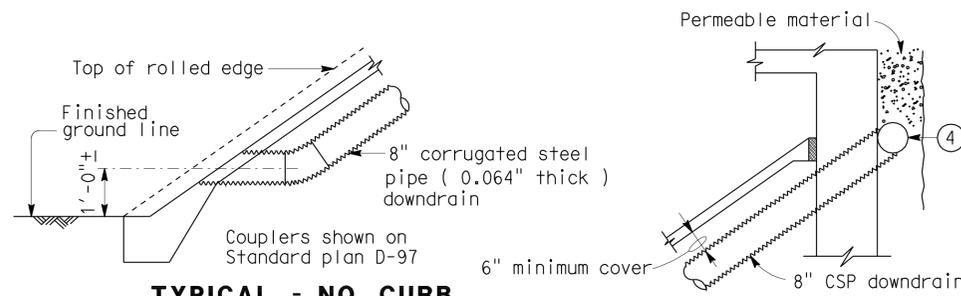


**SECTION B-B**

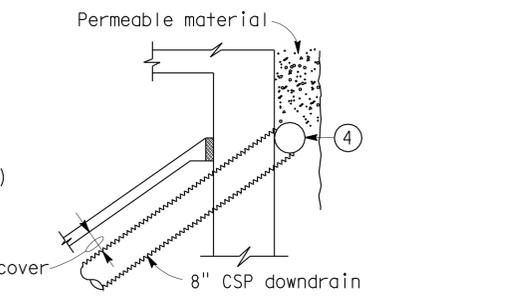
\*This dimension becomes zero when edge of deck is at outside face of W.W.



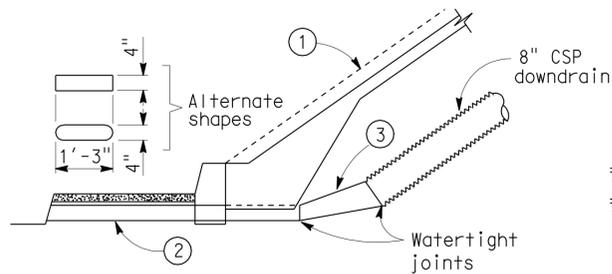
**TYPICAL SECTION - CONCRETE PAVING**



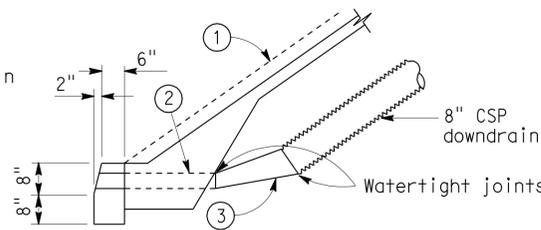
**TYPICAL - NO CURB**



**TYPICAL - DRAIN CONNECTION**



**TYPICAL - WITH SIDEWALK**



**TYPICAL - WITH CURB**

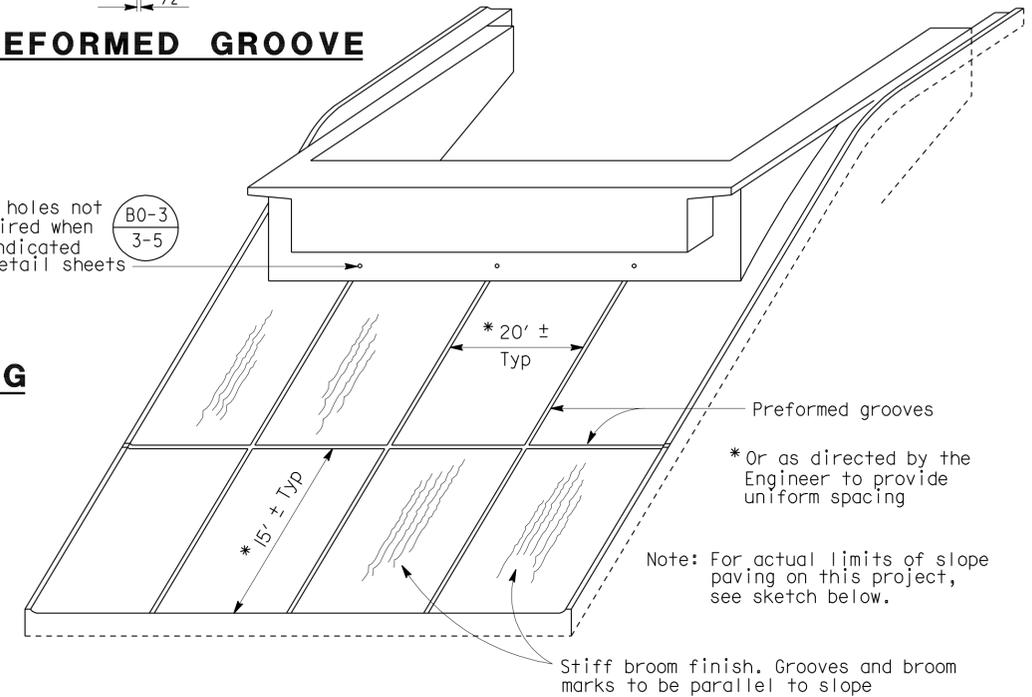
**DRAINAGE DETAILS**

Note: Drainage details are only applicable when (B0-3/3-5) is indicated on detail sheets.

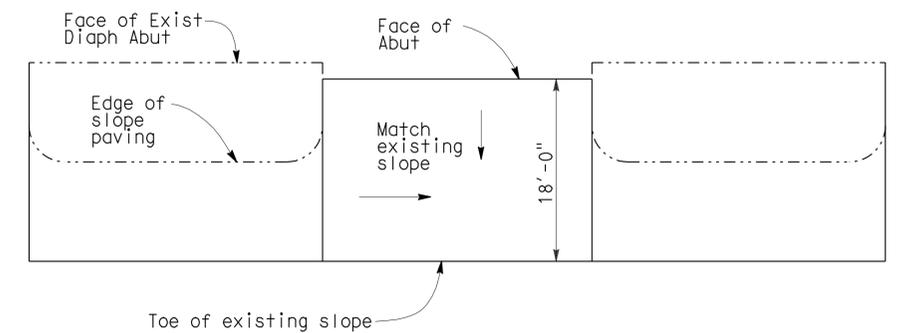
- ① Top of rolled edge
- ② Conduit: 0.064" galv corrugated steel or 0.109" smooth galv steel
- ③ Taper: { 0.064" / 0.109" smooth galv steel
- ④ 4" Perforated steel pipe (0.064" thick) underdrain behind abutment. Connect to down drain as shown on Limits of Slope Paving & Drainage layout.

**PREFORMED GROOVE**

Weep holes not required when is indicated on detail sheets (B0-3/3-5)



**PICTORIAL VIEW OF TYPICAL INSTALLATION**



**LIMITS OF SLOPE PAVING**

NO SCALE

STANDARD DRAWING			
RELEASE DATE <b>4/20/00</b>	DESIGN BY <b>R. YEE</b>	CHECKED <b>C.W. PURKISS</b>	RELEASED BY <i>Roberto Sorelle</i>
FILE NO. <b>xs4-210</b>	DETAILS SUBMITTED BY <b>C.W. PURKISS</b>	DRAWING DATE <b>3/89</b>	OFFICE CHIEF

Dimensions converted from SI to English.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.  
24-0205  
KILOMETER POST  
M 8.67

WINTER STREET UC (WIDEN)  
ABUTMENT SLOPE PAVING - FULL SLOPE

**BENCH MARK**

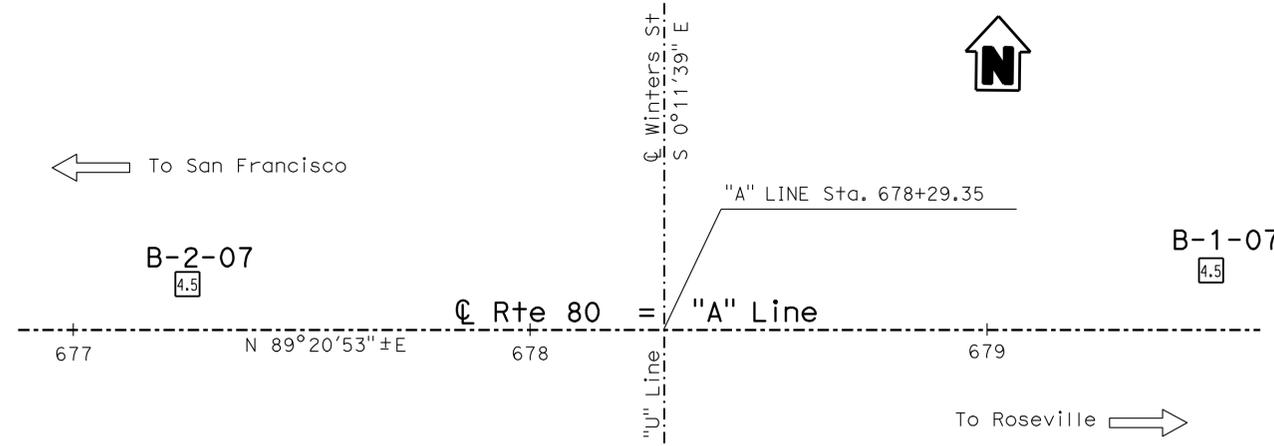
SURVEY CONTROLS

SUHV 400

Fnd PK Nail  
 9.19 Lt. C Rte I-80  
 Sta. 677+81.87  
 N 1994489.60  
 E 6729726.69  
 Elev. = 59.12 ft

SUHV 600

Fnd PK Nail  
 84.93 Rt. C Rte I-80  
 Sta. 678+77.12  
 N 1994396.57  
 E 6729823.00  
 Elev. = 58.49 ft



**PLAN**  
 1" = 20'



**PROFILE**  
 HOR. 1" = 20'  
 VER. 1" = 10'

**NOTES:**

- All borings were advanced using a self-casing 3-3/4" wireline drill system.
- A measurement for ground water was completed during the field investigation in Boring B-1-07 and none was detected.
- During the investigation, ground water was not measured in Boring B-2-07. This boring was immediately backfilled after completion of the drilling operations.
- The soil descriptions and classifications, including consistency and relative density descriptors, used by the field personnel for the exploration boreholes shown on these sheets are generally based on the Soil and Rock Logging, Classification, and Presentation Manual, Division of Engineering Services, Geotechnical Services, (June 2007).
- Soil colors were determined using Munsell Soil Color Charts (1994, Revised Edition).
- Test borings B-1-07 and B-2-07 utilized a Longyear Automatic Hammer to advance the sampler using a 140 lb hammer with 30 inch drop. The SPT N-values shown on the Log of Test Boring (LOTB) sheets were actual values recorded in the field. The relative/apparent density descriptors shown on the LOTB sheets are based on the actual SPT N-values recorded in the field. Consistency descriptors shown on the LOTB sheets are based on the actual SPT N-values or the pocket penetrometer readings.
- E= Blow count for 1 foot penetration extrapolated from blow count for less than 1 foot (due to change in material or hard driving).
- In Boring B-1-07, a layer of hard concrete was encountered in the fill material from an approximate elevation of 59.7 ft to 57.7 ft.
- In Boring B-2-07, a layer of hard asphalt concrete (AC) was encountered in the fill material from an approximate elevation of 74.0 ft to 73.8 ft and cobbles of hard sandstone was encountered in the fill material at an approximate elevation of 67.8 ft.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	963	1012

9-12-08  
 CERTIFIED ENGINEERING GEOLOGIST  
 Reid Buell  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 STATE OF CALIFORNIA

9-7-10  
 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.*

This LOTB sheet was generally prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	964	1012

9-12-08  
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 Reid Buell  
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FOR PLAN VIEW, SEE  
"LOG OF TEST BORINGS 1 OF 5"

This LOTB sheet was generally prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).



<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>BRIDGE NO.</b>		<b>WINTERS STREET UC (WIDEN)</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen 3/08		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		24-0205		<b>LOG OF TEST BORINGS 2 OF 5</b>	
NAME: R. Bibbens		CHECKED BY: J. Martin		J. Martin		DESIGN BRANCH 1		POST MILES			
								M 8.67			
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 13 OF 16	

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:31

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7 M0.0/M10.4	965	1012

*Reid Buell*  
 CERTIFIED ENGINEERING GEOLOGIST  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 STATE OF CALIFORNIA

9-7-10  
 PLANS APPROVAL DATE

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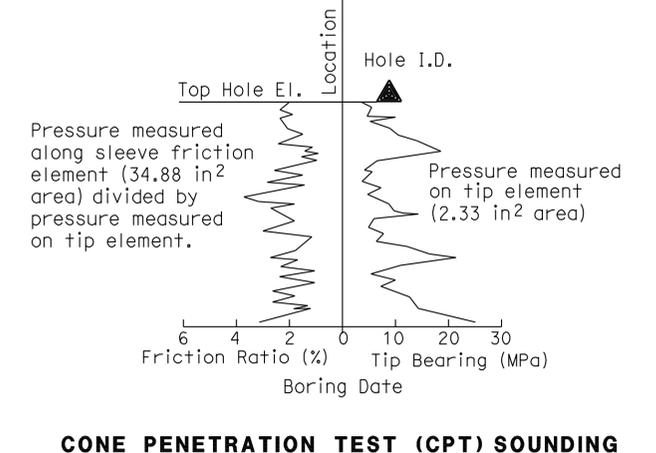
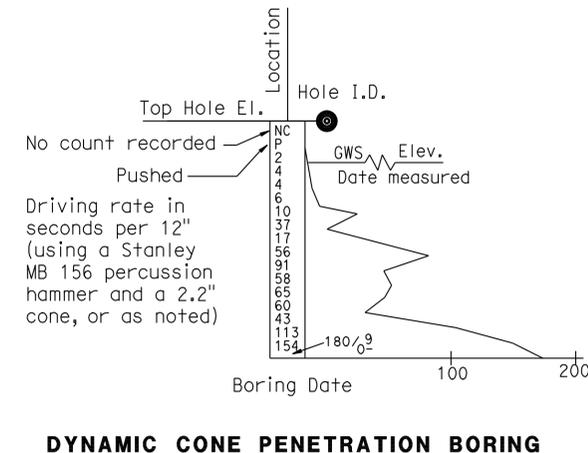
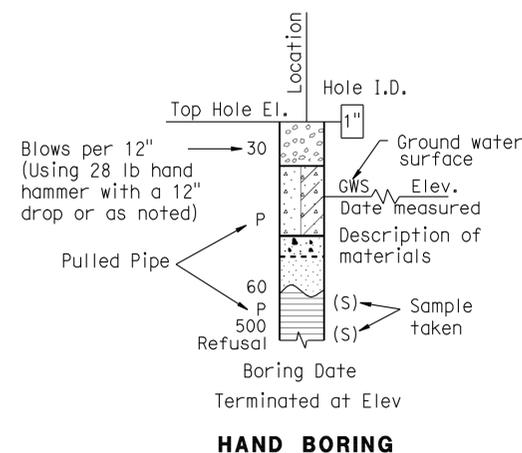
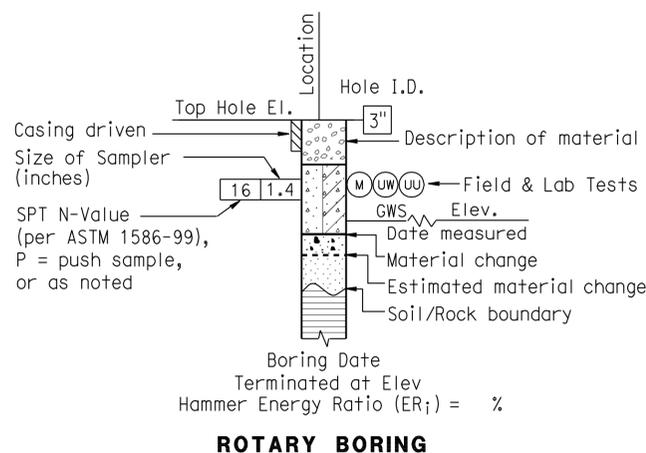
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



*Reid Buell*  
 CERTIFIED ENGINEERING GEOLOGIST

9-7-10  
 PLANS APPROVAL DATE

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PROFESSIONAL GEOLOGIST

Reid Buell  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 STATE OF CALIFORNIA

GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly graded GRAVEL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY
	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)		SILTY CLAY
	Poorly graded GRAVEL with SILT		SILTY CLAY with SAND
	Poorly graded GRAVEL with SILT and SAND		SILTY CLAY with GRAVEL
	Poorly graded GRAVEL with CLAY (or SILTY CLAY)		SANDY SILTY CLAY
	Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		SANDY SILTY CLAY with GRAVEL
	SILTY GRAVEL		GRAVELLY SILTY CLAY
	SILTY GRAVEL with SAND		GRAVELLY SILTY CLAY with SAND
	CLAYEY GRAVEL		SILT
	CLAYEY GRAVEL with SAND		SILT with SAND
	SILTY, CLAYEY GRAVEL		SILT with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND		SANDY SILT
	Well-graded SAND		SANDY SILT with GRAVEL
	Well-graded SAND with GRAVEL		GRAVELLY SILT
	Poorly graded SAND		GRAVELLY SILT with SAND
	Poorly graded SAND with GRAVEL		ORGANIC lean CLAY
	Well-graded SAND with SILT		ORGANIC lean CLAY with SAND
	Well-graded SAND with SILT and GRAVEL		ORGANIC lean CLAY with GRAVEL
	Well-graded SAND with CLAY (or SILTY CLAY)		SANDY ORGANIC lean CLAY
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		SANDY ORGANIC lean CLAY with GRAVEL
	Poorly graded SAND with SILT		GRAVELLY ORGANIC lean CLAY
	Poorly graded SAND with SILT and GRAVEL		GRAVELLY ORGANIC lean CLAY with SAND
	Poorly graded SAND with CLAY (or SILTY CLAY)		ORGANIC SILT
	Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)		ORGANIC SILT with SAND
	SILTY SAND		ORGANIC SILT with GRAVEL
	SILTY SAND with GRAVEL		SANDY ORGANIC SILT
	CLAYEY SAND		SANDY ORGANIC SILT with GRAVEL
	CLAYEY SAND with GRAVEL		GRAVELLY ORGANIC SILT
	SILTY, CLAYEY SAND		GRAVELLY ORGANIC SILT with SAND
	SILTY, CLAYEY SAND with GRAVEL		ORGANIC fat CLAY
	PEAT		ORGANIC fat CLAY with SAND
	COBBLES		ORGANIC fat CLAY with GRAVEL
	COBBLES and BOULDERS		SANDY ORGANIC fat CLAY
	BOULDERS		SANDY ORGANIC fat CLAY with GRAVEL
			GRAVELLY ORGANIC fat CLAY
			GRAVELLY ORGANIC fat CLAY with SAND

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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(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)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

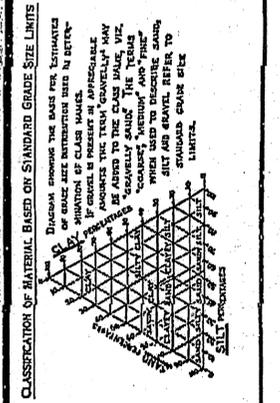
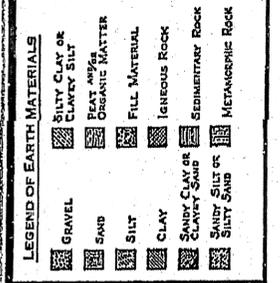
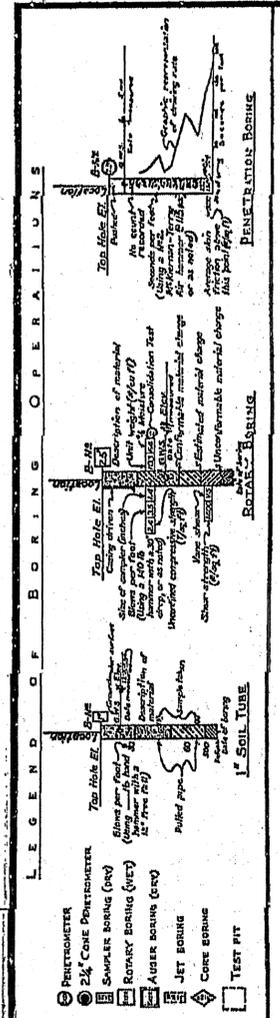
MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

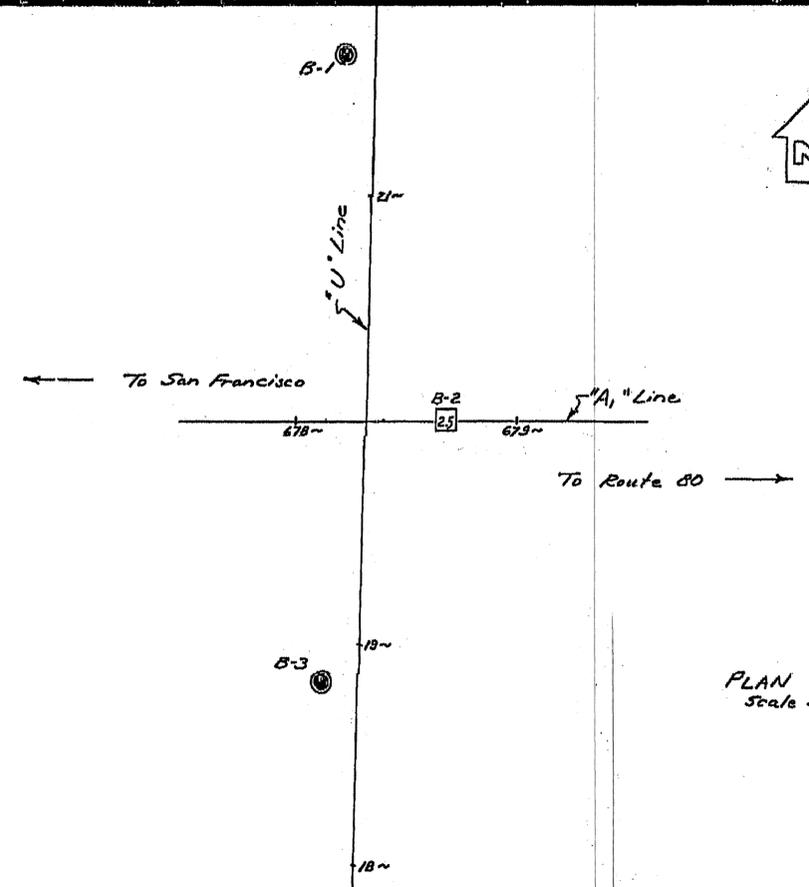
<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>	<b>DIVISION OF ENGINEERING SERVICES</b>	<b>BRIDGE NO.</b>	<b>WINTERS STREET UC (WIDEN)</b>	
FUNCTIONAL SUPERVISOR	DRAWN BY: F. Nguyen 3/08	FIELD INVESTIGATION BY:	J. Martin	<b>DEPARTMENT OF TRANSPORTATION</b>	<b>STRUCTURE DESIGN</b>	24-0205	<b>LOG OF TEST BORINGS 4 OF 5</b>	
NAME: XX	CHECKED BY: J. Martin				<b>DESIGN BRANCH 1</b>	POST MILES M 8.67		
065 CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES
							9/09/08	SHEET 15 OF 16

USERNAME => fhmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:31



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

TBM "C"  
 Top RR spike in JP  
 19' ft. Sta. 19 + 92 "U" Line.  
 Elev. 60.53



PLAN  
 Scale: 1" = 40'

TO ACCOMPANY PLANS DATED 9-7-10

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

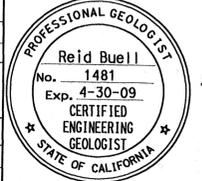
DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
03	Yol, Sac	80	R10.9/R11.7, M0.0/M10.4	967	1012

Reid Buell  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 DATE 9/2/09

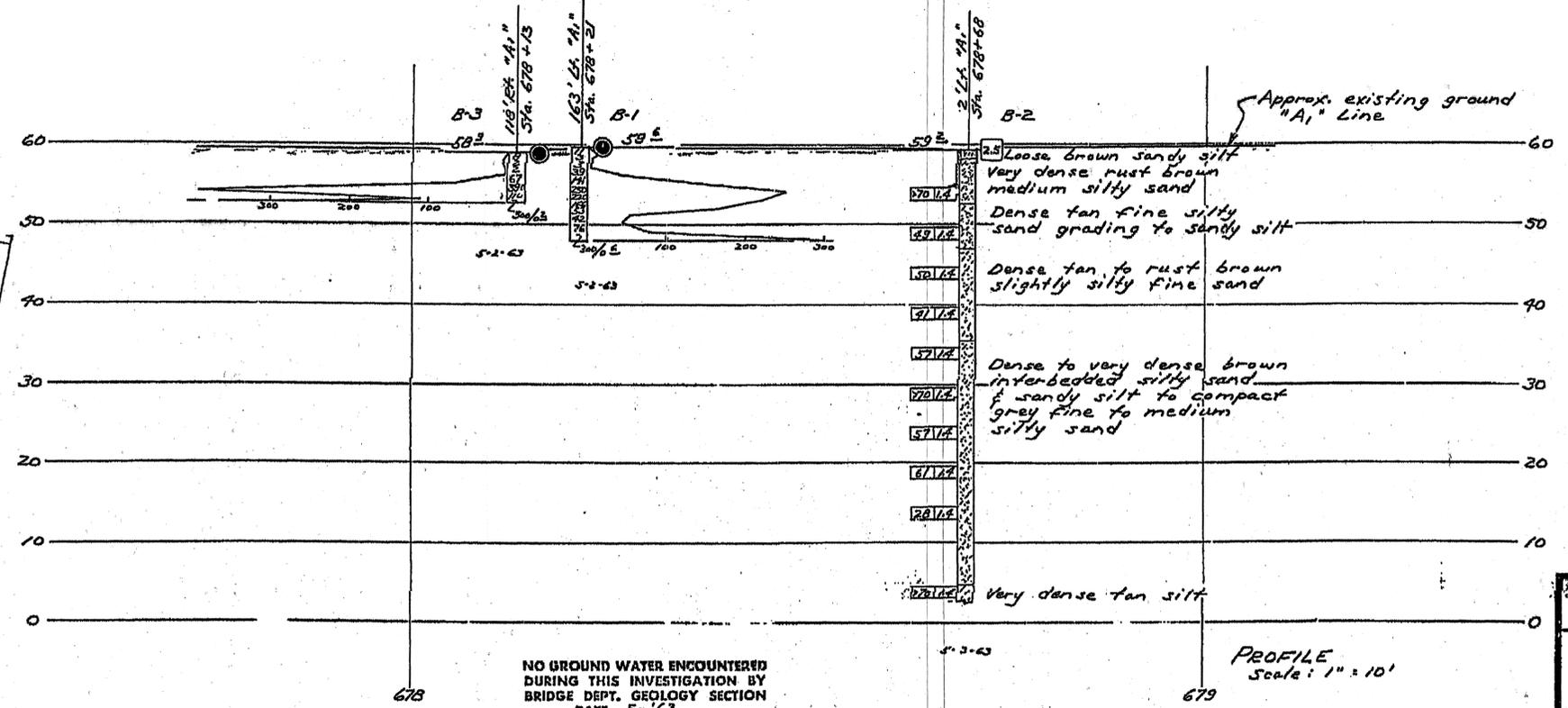
WINTERS STREET UC (WIDEN)  
 LOG OF TEST BORINGS 5 OF 5

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA. CU: 03 EA: 379701

BRIDGE No.	DATE	Sheet	of
24-0205	24-0205	16	16



AS BUILT PLANS  
 Contract No. 03-082734  
 Date Completed 6-1-70  
 Document No. 30000762



PROFILE  
 Scale: 1" = 10'

INFORMATION ON ACTUAL FOUNDATION CONDITIONS ENCOUNTERED IS ON FILE IN BRIDGE GEOLOGY SECTION

STATE OF CALIFORNIA  
 DEPARTMENT OF PUBLIC WORKS  
 DIVISION OF HIGHWAYS

WINTERS STREET UNDERCROSSING  
 LOG OF TEST BORINGS

SCALE As Noted BRIDGE 24-205% POST MILE 8.7 DRAWING 24105-8

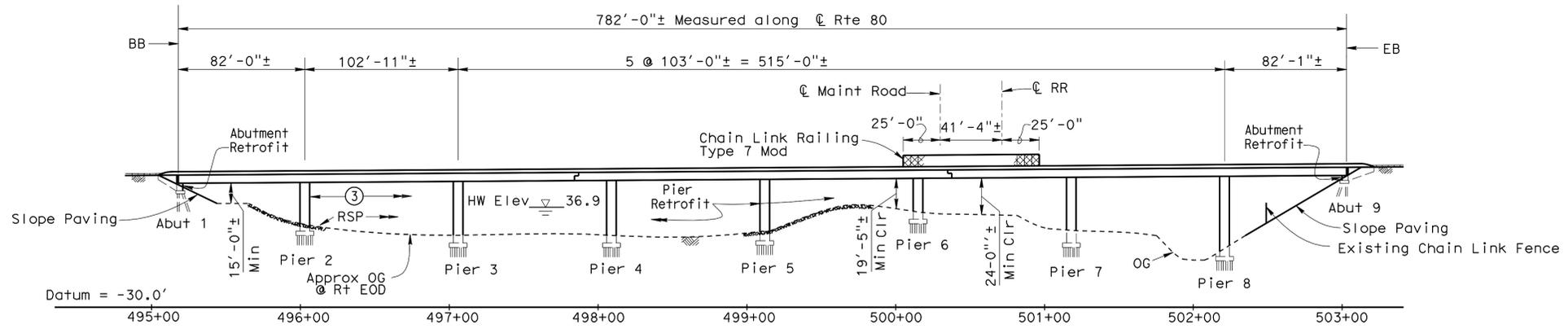
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	968	1012

Eric Watson 4/12/10  
 REGISTERED CIVIL ENGINEER DATE

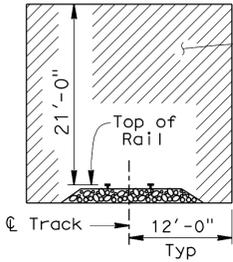
9-7-10  
 PLANS APPROVAL DATE

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.

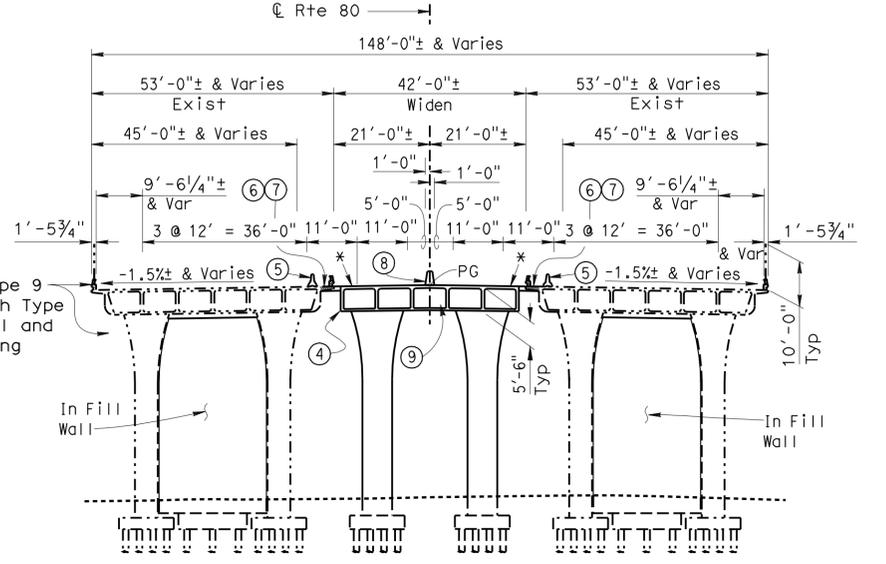
Eric Watson  
 No. 64273  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA



**ELEVATION**  
 1" = 50'



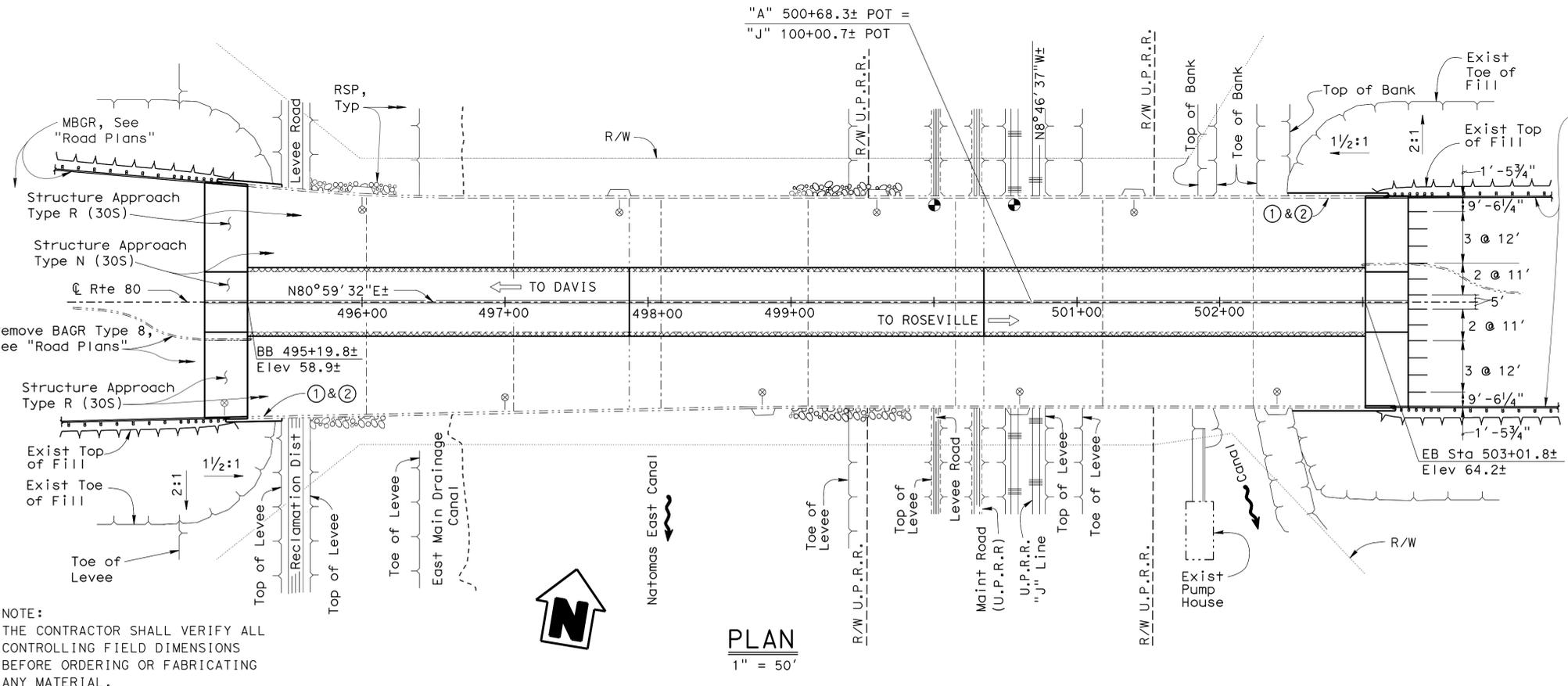
**MINIMAL CONSTRUCTION CLEARANCE ENVELOPE**  
 3/32" = 1'  
 (Normal to Railroad)



**TYPICAL SECTION**  
 1" = 20'

- Notes :
- Paint "Natomas East Canal Bridge OH"
  - Paint "Br No. 24-0218"
  - Paint Pier No.
  - CIP Reinf Concrete Box Girder
  - Temporary Railing (Type K), see "Road Plans"
  - Remove Exist Interior Overhang and Barrier (Transverse Deck Reinf to remain)
  - Closure Pour
  - Concrete Barrier Type 60A
  - 3"C, MT (Fiberoptic Conduit)

- Legend :
- Indicates removal of Exist concrete
  - Indicates Exist structure
  - Match Exist grade and cross slope
  - Indicates Electrolier on barrier, see "ROAD PLANS"
  - Indicates Point of Min Vertical clearance



**PLAN**  
 1" = 50'

**INDEX TO PLANS**

- GENERAL PLAN
- GENERAL NOTES
- FOUNDATION PLAN NO. 1
- FOUNDATION PLAN NO. 2
- ABUTMENT LAYOUT & DETAILS
- PIER LAYOUT & DETAILS
- TYPICAL SECTION
- GIRDER LAYOUT
- HINGE DETAILS
- GIRDER TOP REINFORCEMENT
- GIRDER BOTTOM REINFORCEMENT
- PTFE/ELASTOMERIC BEARING DETAILS
- STRUCTURE APPROACH TYPE N(30S)
- STRUCTURE APPROACH TYPE R(30S)
- RESTRAINER DETAILS
- SLOPE PAVING - FULL SLOPE
- CHAIN LINK RAILING TYPE 7 MODIFIED
- ROCK SLOPE PROTECTION DETAILS
- MISCELLANEOUS RETROFIT DETAILS
- LOG OF TEST BORING 1 OF 7
- LOG OF TEST BORING 2 OF 7
- LOG OF TEST BORING 3 OF 7
- LOG OF TEST BORING 4 OF 7
- LOG OF TEST BORING 5 OF 7
- LOG OF TEST BORING 6 OF 7
- LOG OF TEST BORING 7 OF 7

**STANDARD PLANS DATED MAY 2006**

- |           |   |
|-----------|---|
| A10A      | ACRONYMS AND ABBREVIATIONS  |
| A10B      | ACRONYMS AND ABBREVIATIONS  |
| A62B      | LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL |
| A62C      | LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE                    |
| A76A      | CONCRETE BARRIER TYPE 60  |
| B0-3      | BRIDGE DETAILS  |
| B0-5      | BRIDGE DETAILS  |
| B0-13     | BRIDGE DETAILS  |
| B3-8      | RETAINING WALL DETAILS No. 1  |
| RSP B6-21 | JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")                              |
| B7-1      | BOX GIRDER DETAILS  |
| B7-5      | DECK DRAINS   |
| B7-10     | UTILITY OPENING BOX GIRDER  |
| B7-11     | UTILITY DETAILS   |
| B14-5     | WATER SUPPLY LINE (DETAILS) (PIPE SIZES LESS THAN 4")                   |

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

DESIGN ENGINEER Jeff Sims	DESIGN	BY Greg Thornton	CHECKED Vadim Shostak	LRFD	LIVE LOADING: HL93 w/"LOW BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	24-0218	NATOMAS EAST CANAL BOH (WIDEN) GENERAL PLAN	
	DETAILS	BY Bob Huddleston	CHECKED Vadim Shostak	LAYOUT	BY Greg Thornton			CHECKED Vadim Shostak	POST MILE		5.21
	QUANTITIES	BY Eric Watson	CHECKED Jie Tang	SPECIFICATIONS	BY James Choi			CHECKED James Choi	PLANS AND SPECS COMPARED		EA 3797U1

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 03  
EA 3797U1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

7-24-06	04/12/10	5/10/10	12/14/08	12/14/08	01/21/09	09/24/09	09/24/09	03/29/10
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SHEET 1 OF 26

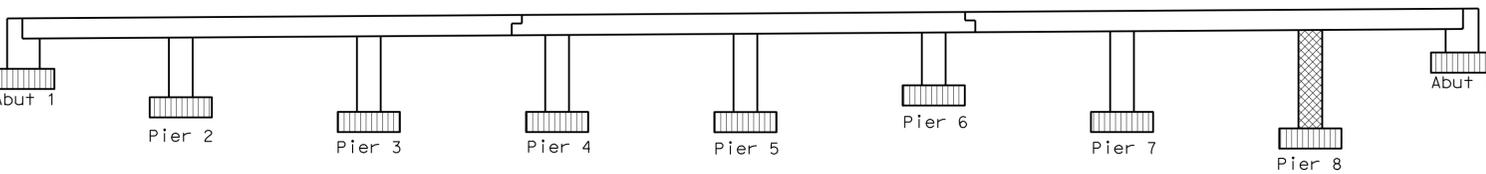
Pile Data Table

Location	Pile Type	Design Load (Kips)	Nominal Resistance		Design Pile Tip Elevation (ft)	Specific Pile Tip Elevation (ft)	Nominal Driving Resistance (Kips)
			Compression (Kips)	Tension (Kips)			
<b>Bridge Widening</b>							
Abut 1	HP 10X57	140	280	0	-14.0 (1)	-14.0	280
Pier 2	HP 10X57	140	280	0	-47.0 (1)(2)	-47.0	280
Pier 3	HP 10X57	140	280	0	-54.5 (1)(2)	-54.5	280
Pier 4	HP 10X57	140	280	0	-54.5 (1)(2)	-54.5	280
Pier 5	HP 10X57	140	280	0	-52.5 (1)(2)	-52.5	280
Pier 6	HP 10X57	140	280	0	-34.0 (1)	-34.0	280
Pier 7	HP 10X57	140	280	0	-50.0 (1)	-50.0	280
Pier 8	HP 10X57	140	280	0	-61.0 (1)	-61.0	280
Abut 9	HP 10X57	140	280	0	-8.0 (1)	-8.0	280
<b>In-Fill Walls</b>							
Pier 2	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-9.5 (1)(2)	-9.5	180
Pier 3	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-20.5 (1)(2)	-20.5	180
Pier 4	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-21.0 (1)(2)	-21.0	180
Pier 5	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-19.0 (1)(2)	-19.0	180
Pier 6	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-0.5 (1)(2)	-0.5	180
Pier 7	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-16.5 (1)(2)	-16.5	180
Pier 8	PP14 X 0.250 ALT "V" (Close - Ended)	90	180	0	-28.5 (1)(2)	-28.5	180

Note: Design Pile Tip Elevation is controlled by the following demands:

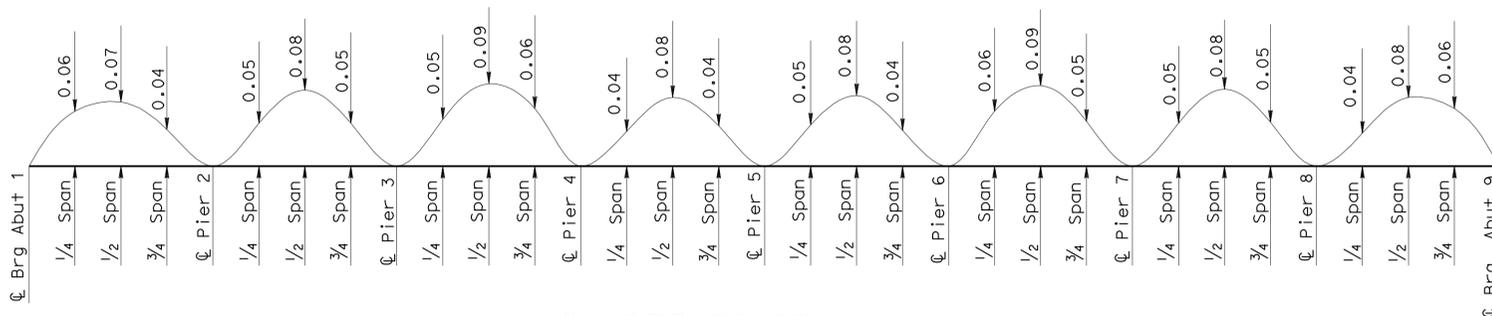
- Compression.
- Scour Potential exists to an approximate elevation of 5.0 ft at Pier 2 and an approximate elevation of 0.0 ft at Piers 3, 4 and 5.

- Bottom of predrilled hole elevation at Piers 2 & 5 is 0.0 ft for both bridge widening and infill walls.



**CONCRETE STRENGTH AND TYPE LIMITS**

NO SCALE



**CAMBER DIAGRAM**

NO SCALE

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

Note: Camber values do not include information on of formwork or falsework settlement.

**GENERAL NOTES  
LOAD AND RESISTANCE FACTOR DESIGN**

DESIGN: AASHTO LRFD Specifications, Third Edition With the 2006 Interim Revisions and Caltrans Amendments V 0.06.

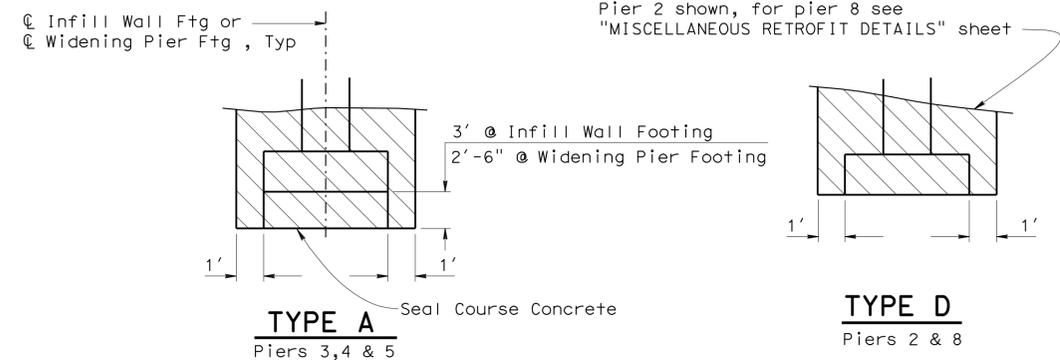
SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), Version 1.4 June, 2006.

DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE LOADING: HL-93 and permit design load.

SEISMIC LOADING: SDC ARS Curve For Soil Profile Type D (M=6.5±0.25) (Peak Rock Acceleration = 0.2g).

REINFORCED CONCRETE:  $f_y = 60$  ksi  
 $f'_c = 3.6$  ksi,  $n = 8$   
 $f'_c = 6.0$  ksi,  $n = 6$



**LIMITS OF PAYMENT - EXCAVATION**

NO SCALE

**Legend :**

- Structural Concrete, Bridge
- Structural Concrete, Bridge ( $f'_c = 6.0$  ksi)
- Structural Concrete, Bridge Footing
- Structure Excavation (Type A & D), (Including Infill Walls)

**QUANTITIES**

DESCRIPTION	LUMP SUM
BRIDGE REMOVAL (PORTION), LOCATION E	635 CY
STRUCTURE EXCAVATION (BRIDGE)	1,070 CY
STRUCTURE EXCAVATION (TYPE A)	374 CY
STRUCTURE EXCAVATION (TYPE D)	513 CY
STRUCTURE BACKFILL (BRIDGE)	25 CY
AGGREGATE BASE (APPROACH SLAB)	7,987 LF
FURNISH STEEL PILING (HP 10 X 57)	132 EA
DRIVE STEEL PILE (HP 10 X 57)	1,176 LF
FURNISH PILING (CLASS 90) (ALTERNATIVE V)	42 EA
DRIVE PILE (CLASS 90) (ALTERNATIVE V)	261 CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	4,060 CY
STRUCTURAL CONCRETE, BRIDGE	14 CY
STRUCTURAL CONCRETE, BRIDGE (CHANNEL)	132 CY
SEAL COURSE CONCRETE	93 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	253 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	3,170 LF
DRILL AND BOND DOWEL	24 EA
PTFE BEARING	165 LF
JOINT SEAL (MR 1")	294 LF
JOINT SEAL (MR 1 1/2")	147 LF
BONDED JOINT SEAL	1,709,736 LB
BAR REINFORCING STEEL (BRIDGE)	35,700 EA
HEADED BAR REINFORCEMENT	8 MFBM
ABUTMENT LUMBER BLOCKING	1,750 CY
ROCK SLOPE PROTECTION (NO. 1, METHOD B)	630 CY
ROCK SLOPE PROTECTION (NO. 3, METHOD B)	169 CY
SLOPE PAVING (CONCRETE)	3,214 LB
MISCELLANEOUS METAL (RESTRAINER - BAR TYPE)	184 LF
CHAIN LINK RAILING (TYPE 7 MODIFIED)	842 LF
CONCRETE BARRIER (TYPE 60A)	1,684 LF
CONCRETE BARRIER (TYPE 736 MODIFIED)	

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak
DETAILS	BY Jinrong Zhou	CHECKED Vadim Shostak
QUANTITIES	BY Eric Watson	CHECKED Jie Tang

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO. 24-0218  
POST MILE 5.21

NATOMAS EAST CANAL BOH (WIDEN)

GENERAL NOTES

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	970	1012

*Eric Watson* 4/12/10  
 REGISTERED CIVIL ENGINEER DATE

9-7-10  
 PLANS APPROVAL DATE

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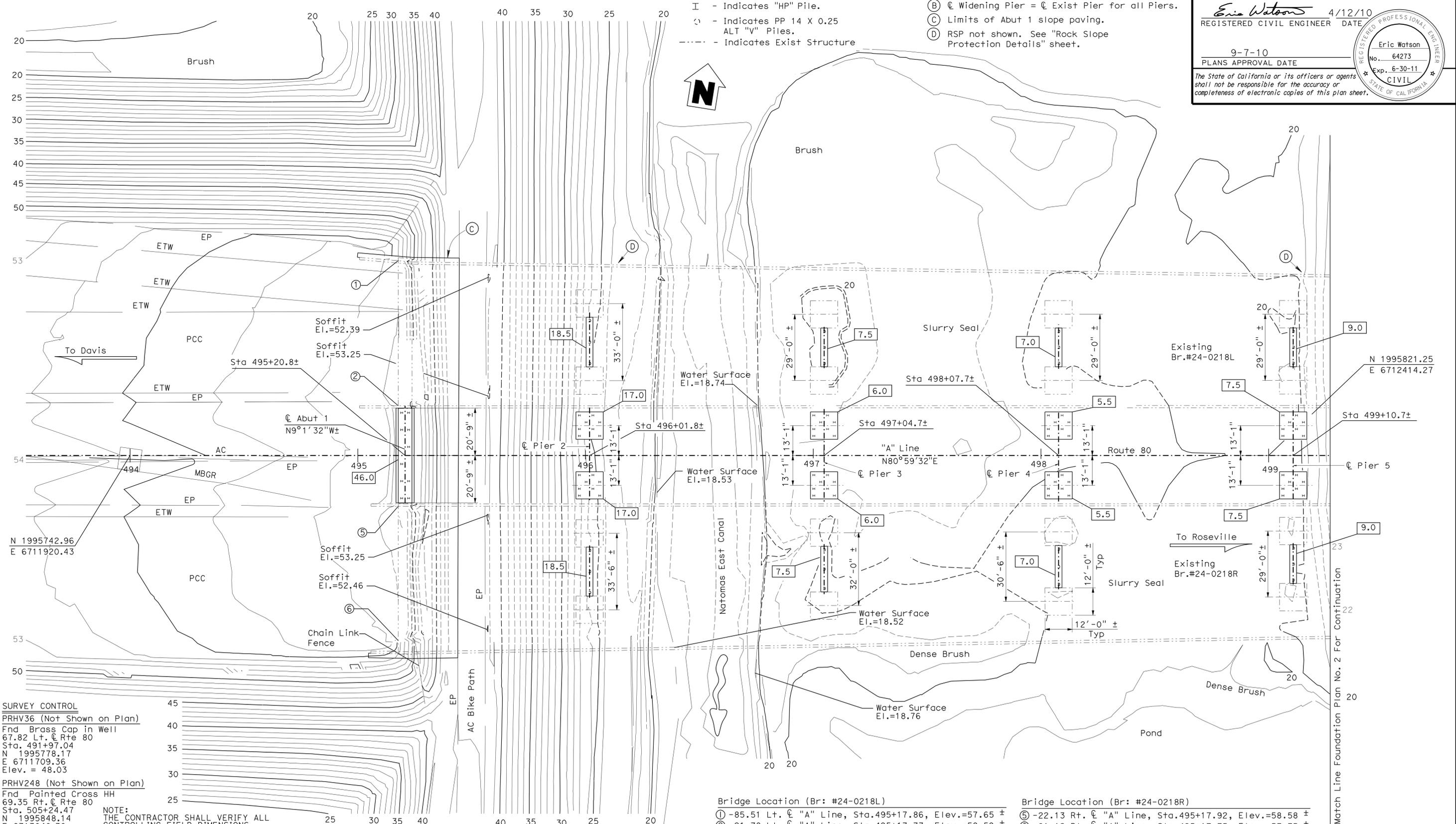
Eric Watson  
 No. 64273  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

**Legend:**

- xx.x - Indicates Bot of Ftg.
- I - Indicates "HP" Pile.
- o - Indicates PP 14 X 0.25 ALT "V" Piles.
- - Indicates Exist Structure

**Notes:**

- (A) All Piles not shown.
- (B) C Widening Pier = C Exist Pier for all Piers.
- (C) Limits of Abut 1 slope paving.
- (D) RSP not shown. See "Rock Slope Protection Details" sheet.



**SURVEY CONTROL**

PRHV36 (Not Shown on Plan)  
 Fnd Brass Cap in Well  
 67.82 Lt. @ Rte 80  
 Sta. 491+97.04  
 N 1995778.17  
 E 6711709.36  
 Elev. = 48.03

PRHV248 (Not Shown on Plan)  
 Fnd Painted Cross HH  
 69.35 Rt. @ Rte 80  
 Sta. 505+24.47  
 N 1995848.14  
 E 6713040.38  
 Elev. = 60.07

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

Bridge Location (Br: #24-0218L)

① -85.51 Lt. @ "A" Line, Sta.495+17.86, Elev.=57.65 ±  
 ② -21.78 Lt. @ "A" Line, Sta.495+17.77, Elev.=58.59 ±

Bridge Location (Br: #24-0218R)

③ -22.13 Rt. @ "A" Line, Sta.495+17.92, Elev.=58.58 ±  
 ④ -81.12 Rt. @ "A" Line, Sta.495+17.75, Elev.=57.75 ±

**PRELIMINARY INVESTIGATION SECTION**

SCALE	VERT. DATUM	NGVD29	PHOTOGRAMMETRY AS OF: X
1"=20'	HORZ. DATUM	NAD83 (1991.35)	SURVEYED BY DISTRICT/T. MASON
ALIGNMENT TIES	DISTR. TRAVERSE SHEET	DRAFTED BY Y. ZHANG 05/2007	CHECKED BY T. ZOLNIKOVA 05/2007

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak
DETAILS	BY Jinrong Zhou	CHECKED Vadim Shostak
QUANTITIES	BY Eric Watson	CHECKED Jie Tang

**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

**DIVISION OF ENGINEERING SERVICES**  
 STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO. 24-0218  
 POST MILE 5.21

**NATOMAS EAST CANAL BOH (WIDEN)**  
 FOUNDATION PLAN NO. 1

Bridge Location (Br: #24-0218L)

- ③ -72.87 Lt. C "A" Line, Sta.503+02.98, Elev.=64.26 ±
- ④ -21.89 Lt. C "A" Line, Sta.503+02.97, Elev.=64.07 ±

Bridge Location (Br: #24-0218R)

- ⑦ -22.05 Rt. C "A" Line, Sta.503+03.15, Elev.=63.61 ±
- ⑧ -72.98 Rt. C "A" Line, Sta.503+02.81, Elev.=62.95 ±

"A" Line Sta.500+67.05=  
"J" Line Sta.100+0.00

CURVE DATA

No.	R	Δ	T	L
(A)	6000.00	11°0'44"	578.38	1153.19

Legend:

- xx.x - Indicates Bot of Ftg.
- I - Indicates "HP" Pile.
- o - Indicates PP 14 X 0.25 ALT "V" Piles.
- - Indicates Exist Structure

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol,Sac	80	R10.9/R11.7, MO.0/M10.4	971	1012

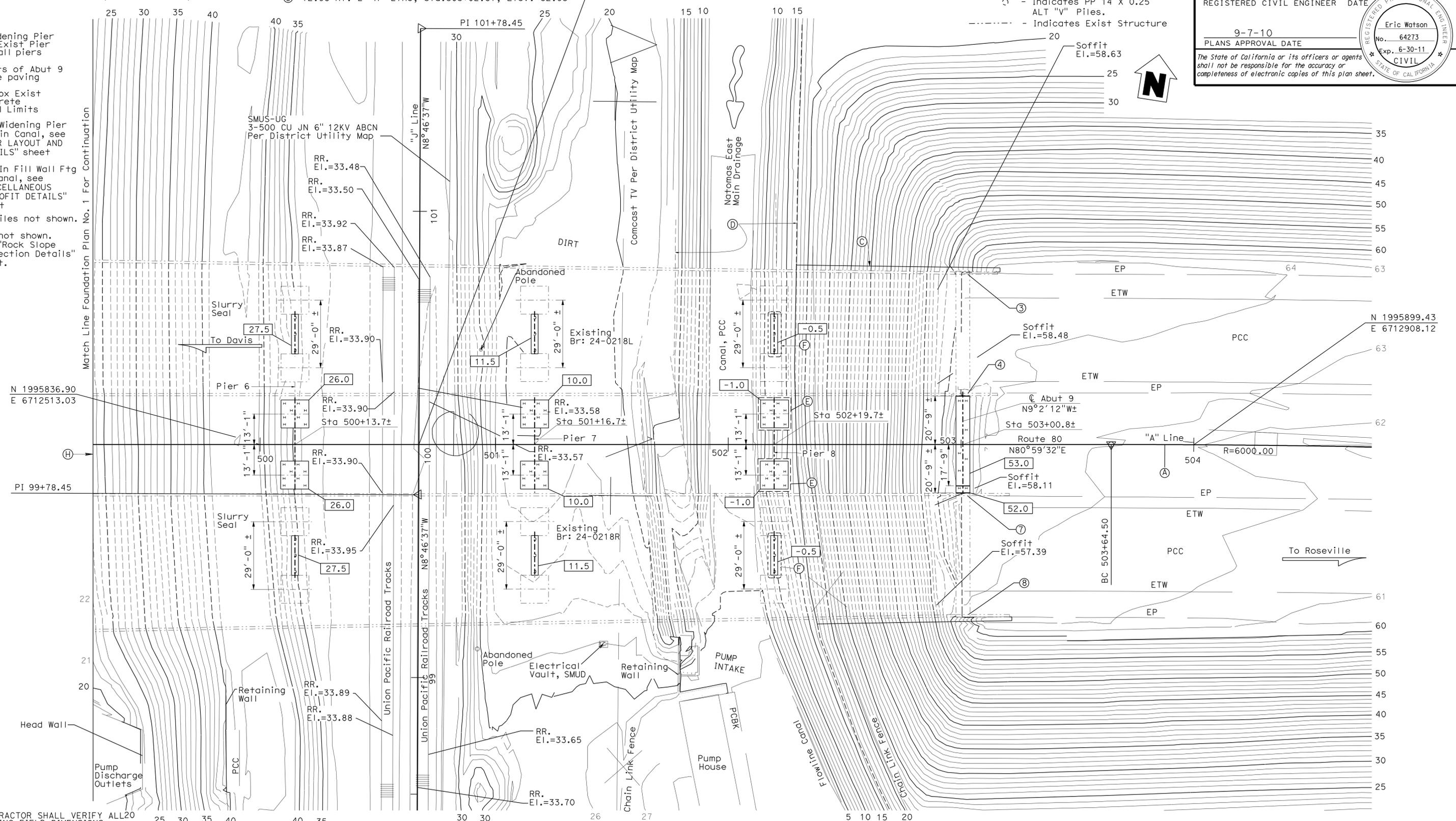
*Eric Watson* 4/12/10  
REGISTERED CIVIL ENGINEER DATE

9-7-10  
PLANS APPROVAL DATE

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Eric Watson  
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Exp. 6-30-11  
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STATE OF CALIFORNIA

- Notes:
- (B) C Widening Pier = C Exist Pier for all piers
  - (C) Limits of Abut 9 slope paving
  - (D) Approx Exist Concrete Canal Limits
  - (E) For Widening Pier Ftg in Canal, see "PIER LAYOUT AND DETAILS" sheet
  - (F) For In Fill Wall Ftg in Canal, see "MISCELLANEOUS RETROFIT DETAILS" sheet
  - (G) All piles not shown.
  - (H) RSP not shown. See "Rock Slope Protection Details" sheet.



NOTE:  
THE CONTRACTOR SHALL VERIFY ALL 20 CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

PRELIMINARY INVESTIGATION SECTION				DESIGN	By Greg Thornton	CHECKED	Vadim Shostak	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	24-0218	NATOMAS EAST CANAL BOH (WIDEN) FOUNDATION PLAN NO. 2					
SCALE	VERT. DATUM	NGVD29	PHOTOGRAMMETRY AS OF: X	DETAILS	By Jinrong Zhou	CHECKED	Vadim Shostak			POST MILE	5.21						
1"=20'	HORZ. DATUM	NAD83 (1991.35)	SURVEYED	BY DISTRICT/T. MASON	CHECKED	BY L. LEW 05/2007	QUANTITIES			By Eric Watson	CHECKED		Jie Tang				
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES						
								6/21/2007		06/06/08	10/15/08	12/06/08	12/10/08	01/15/09	04/12/10	6/8/10	SHEET 4 OF 26



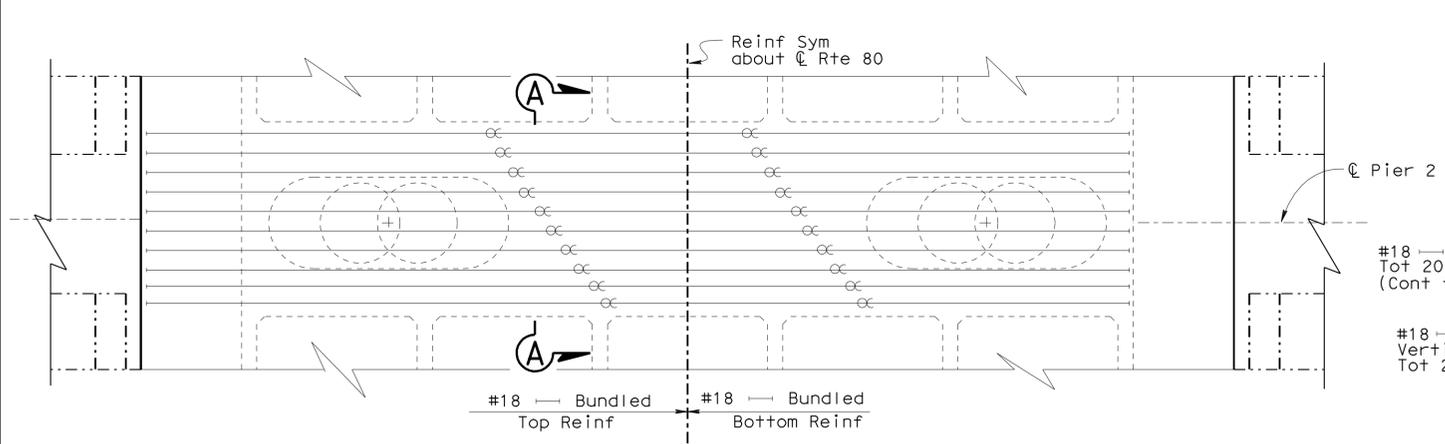
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	973	1012

Eric Watson 4/12/10  
REGISTERED CIVIL ENGINEER DATE

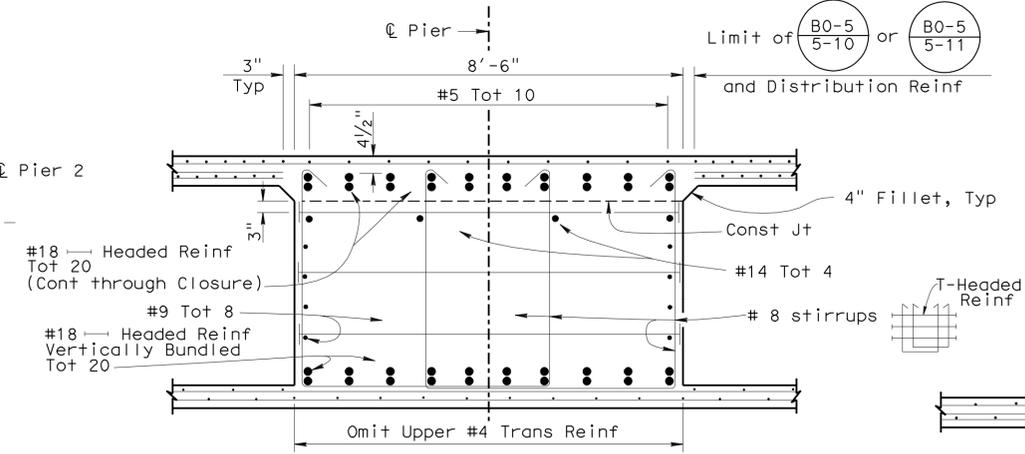
9-7-10  
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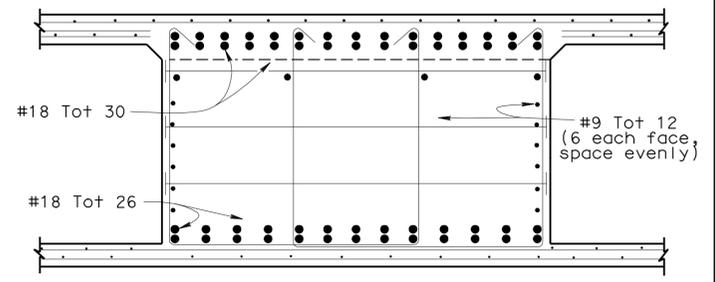
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**PLAN OF CAP**  
 $1/4" = 1'-0"$

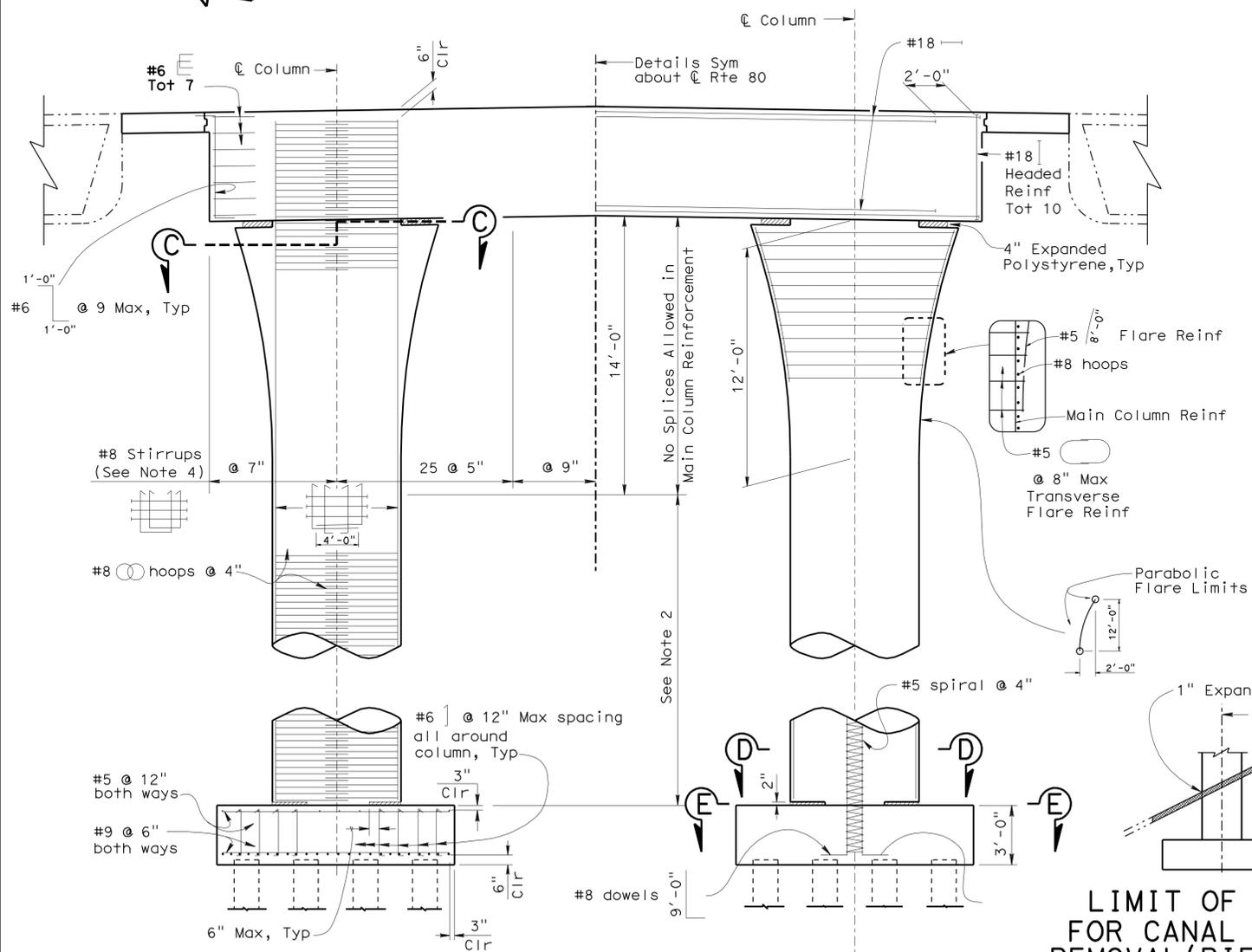


**SECTION A-A (PIER 2-7)**  
 $1/2" = 1'-0"$



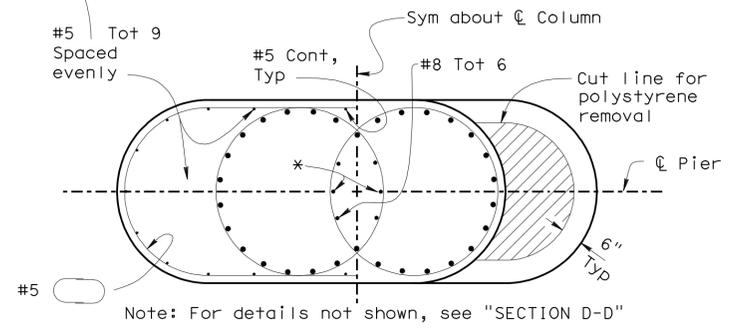
Note: For details not shown, see "SECTION A-A (PIER 2-7)"

**SECTION A-A (PIER 8)**  
 $1/2" = 1'-0"$

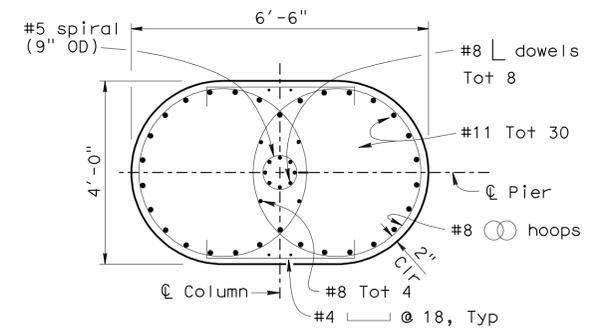


**ELEVATION** (B0-13)  
 $1/4" = 1'-0"$  13-1

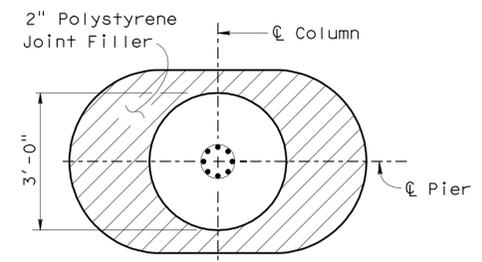
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



**SECTION C-C**  
 $1/2" = 1'-0"$

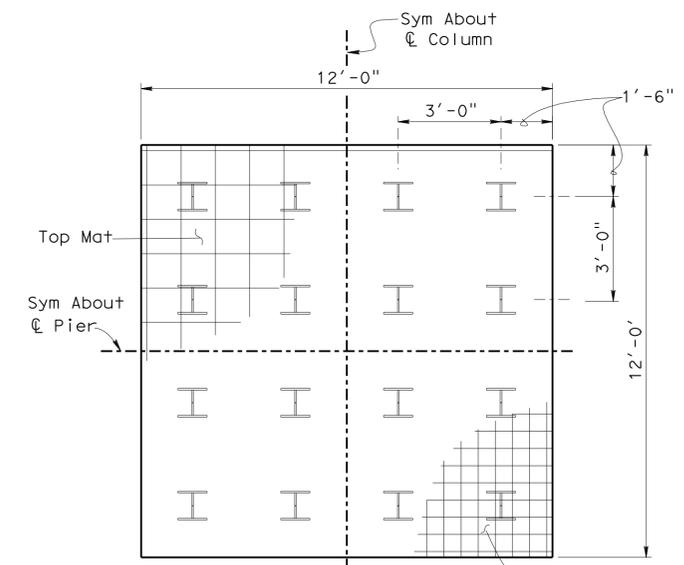


**SECTION D-D**  
 $1/2" = 1'-0"$



**SECTION E-E**  
 $1/2" = 1'-0"$

Note: For details not shown, see "SECTION D-D"



**FOOTING PLAN**  
 $3/8" = 1'-0"$

- Notes:
- Pier 2 shown. Piers 3 through 8 similar, except where noted.
  - Only staggered "Ultimate" butt splices are allowed in main column reinforcement within this zone. Splices shall be staggered a Min of 5ft.
  - All hoops are "Ultimate" butt spliced continuous.
  - Place stirrups parallel to girders and space along  $\bar{C}$  pier.
- Legend:
- $\infty$  - Indicates vertical bundle of 2 bars
  - \*

**LIMIT OF PAYMENT FOR CANAL CONCRETE REMOVAL (PIER 8 ONLY)**

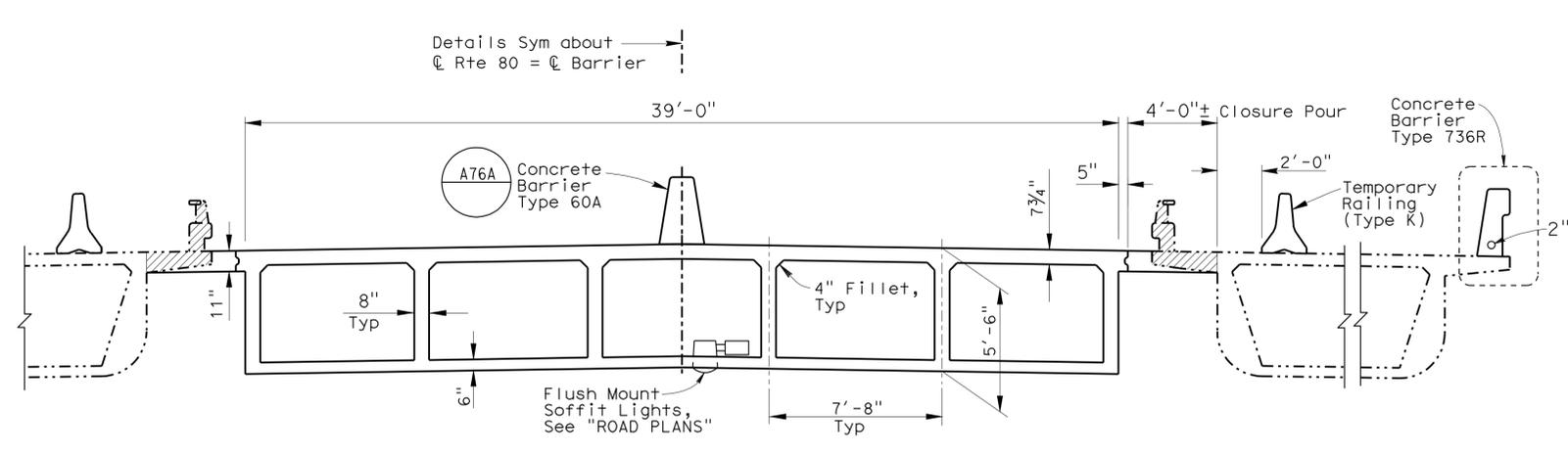
NO SCALE  
Concrete Canal shall be replaced in kind

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	NATOMAS EAST CANAL BOH (WIDEN) PIER LAYOUT AND DETAILS	
DETAILS	BY Jinrong Zhou	CHECKED Vadim Shostak			24-0218		
QUANTITIES	BY Eric Watson	CHECKED Jie Tang			POST MILE 5.21		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 6 OF 26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	974	1012

Eric Watson 4/12/10  
REGISTERED CIVIL ENGINEER DATE  
9-7-10  
PLANS APPROVAL DATE  
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Eric Watson  
REGISTERED PROFESSIONAL ENGINEER  
No. 64273  
Exp. 6-30-11  
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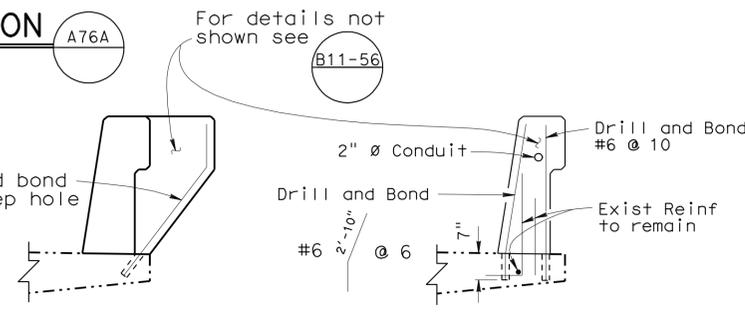


**TYPICAL SECTION A76A**  
 $\frac{1}{4}" = 1'-0"$

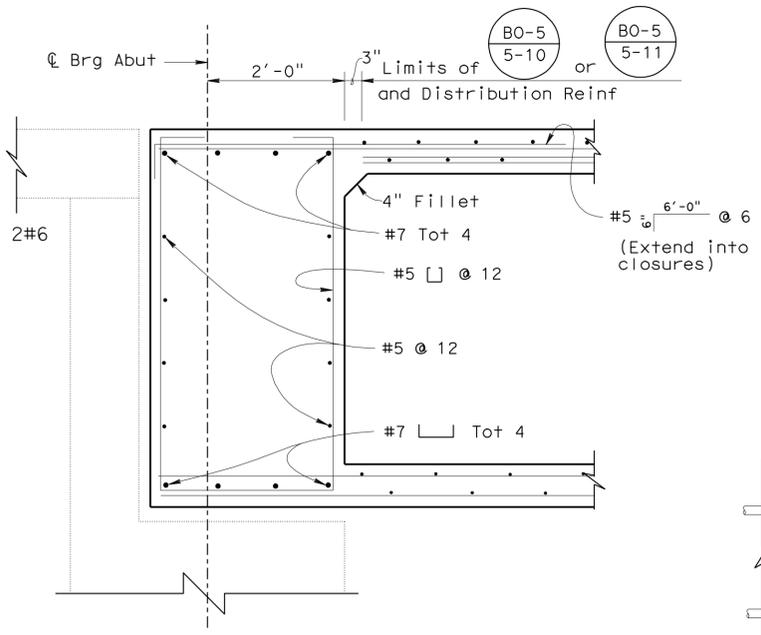
**FALSEWORK RELEASE**

Alternative 1:  
Falsework shall be released as soon as permitted by the specifications. Closure pour shall not be placed sooner than 60 days after the falsework had been released.

Alternative 2:  
Falsework shall not be released less than 28 days after the last concrete has been placed. Closure pour shall not be placed sooner than 14 days after the falsework has been released.  
When Falsework Release Alternative 2 is used, camber values are 0.75 times those shown.



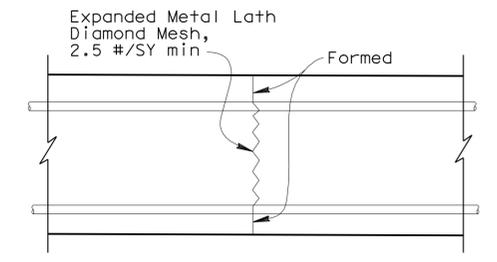
**PEDESTAL TYPE 736R**  
 $\frac{1}{2}" = 1'-0"$



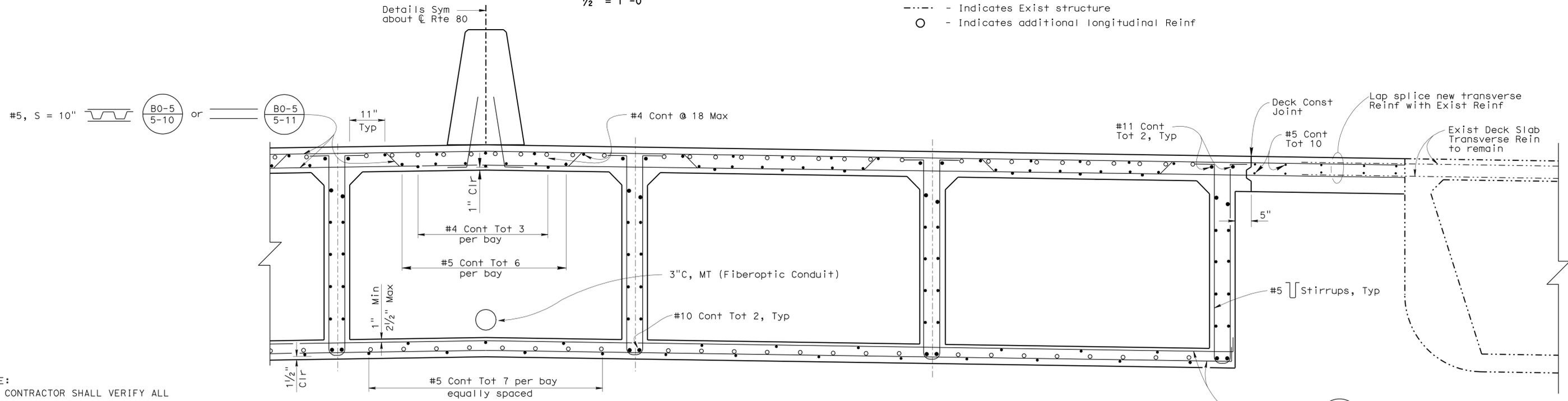
**SECTION A-A**  
 $\frac{3}{4}" = 1'-0"$

Note:  
1. See "GIRDER LAYOUT" sheet for location of "SECTION A-A".

Legend:  
 - Indicates Bridge removal  
 - Indicates Exist structure  
 - Indicates additional longitudinal Reinf



**ALTERNATIVE DECK CONSTRUCTION JOINT**  
NO SCALE



**PART TYPICAL SECTION**  
 $\frac{3}{4}" = 1'-0"$

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

For additional Reinf, see "Girder Top Reinforcement" and "Girder Bottom Reinforcement" sheets.

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	NATOMAS EAST CANAL BOH (WIDEN) TYPICAL SECTION
DETAILS	BY Bob Huddleston/Jie Tang	CHECKED Vadim Shostak			24-0218	
QUANTITIES	BY Eric Watson	CHECKED Jie Tang			POST MILE 5.21	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

CU 03  
EA 3797U1

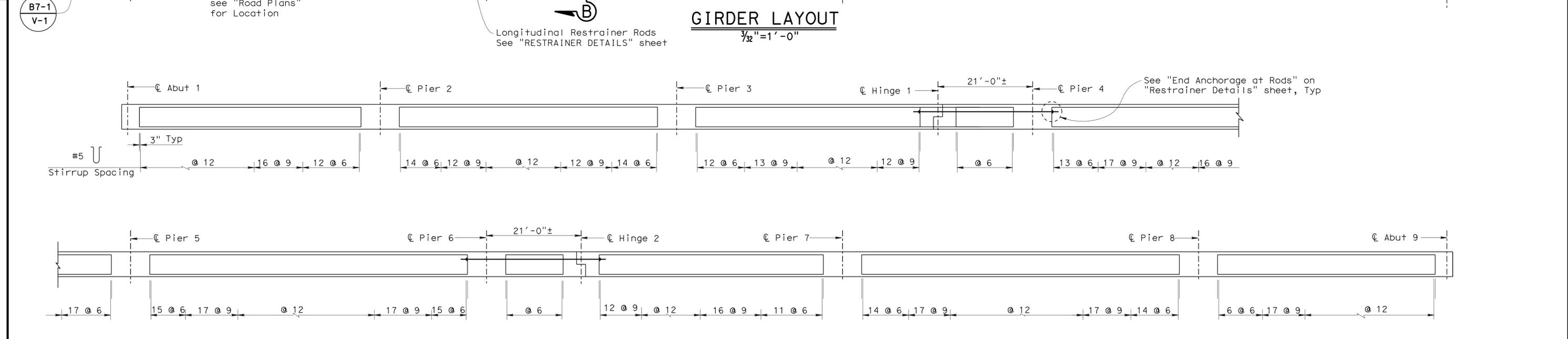
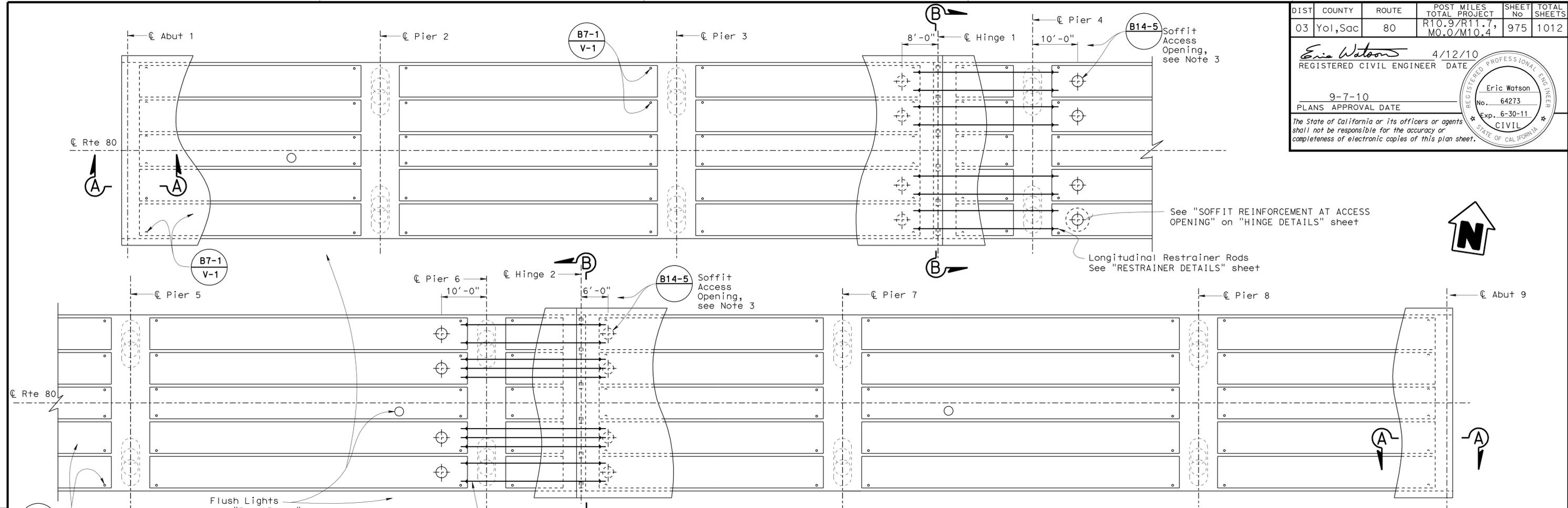
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	7-18-06	12/8/08	12/10/08	01/7/09	04/22/09	03/26/10	04/12/10	05/25/10
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SHEET 7 OF 26

FILE => 24-0218-k-ts01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	975	1012
Eric Watson			4/12/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6-30-11		
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.					



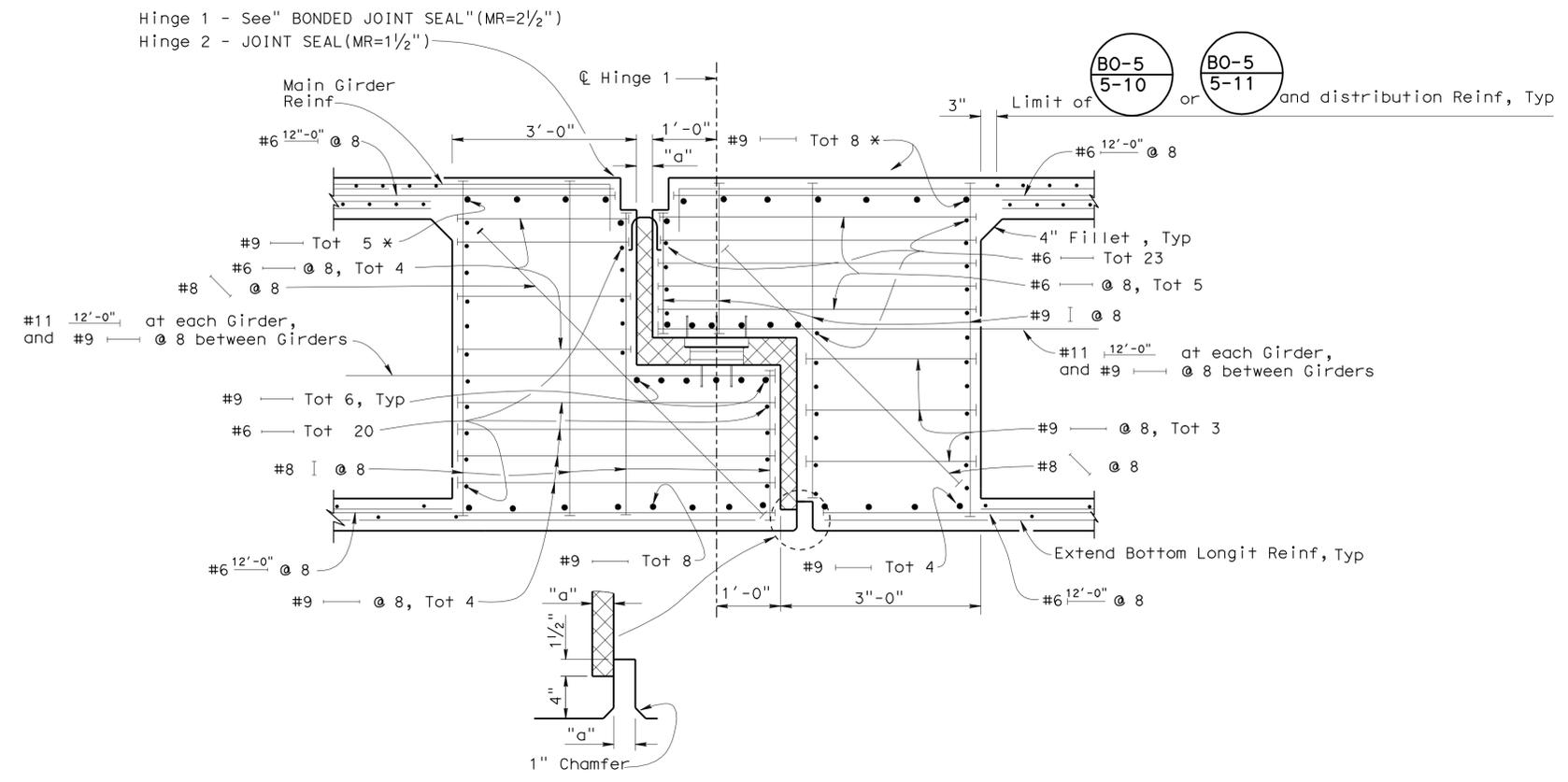
NOTE:  
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

- Notes:
1. For section A-A, See "TYPICAL SECTION" sheet.
  2. For section B-B, See "RESTRAINER DETAILS" sheet.
  3.  $\text{C}$  of Soffit Access Opening =  $\text{C}$  of Bay, Typ

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	NATOMAS EAST CANAL BOH (WIDEN) GIRDER LAYOUT
DETAILS	BY Jinrong Zhou/Jie Tang	CHECKED Vadim Shostak			24-0218	
QUANTITIES	BY Eric Watson	CHECKED Jie Tang			POST MILE 5.21	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES
				0 1 2 3	REVISION DATES	SHEET 8 OF 26

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:33

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	976	1012
Eric Watson			4/12/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6-30-11		
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.					



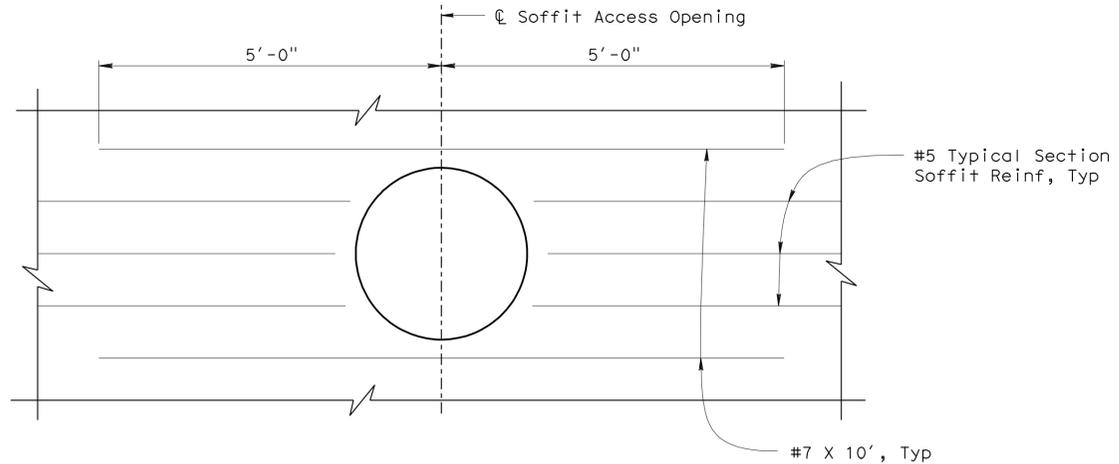
**HINGE** RSP B6-21  
3/4" = 1'-0"

**Notes:**

- Hinge 1 shown, Hinge 2 similar.
- Cover to head on bars to equal 2".
- For PTFE Brg, see "PTFE/ELASTOMERIC BEARING DETAILS" sheet.
- For location of "SOFFIT REINFORCEMENT AT ACCESS OPENING", see "GIRDER LAYOUT" sheet.

**Legend:**

\* - Indicates reinforcement continues into overhang and closure



**SOFFIT REINFORCEMENT AT ACCESS OPENING**  
3/4" = 1'-0"

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

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak
DETAILS	BY Jie Tang	CHECKED Vadim Shostak
QUANTITIES	BY Eric Watson	CHECKED Jie Tang

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH **1**

BRIDGE NO.	24-0218
POST MILE	5.21

NATOMAS EAST CANAL BOH (WIDEN)  
HINGE DETAILS

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:33

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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*Eric Watson* 4/12/10  
 REGISTERED CIVIL ENGINEER DATE

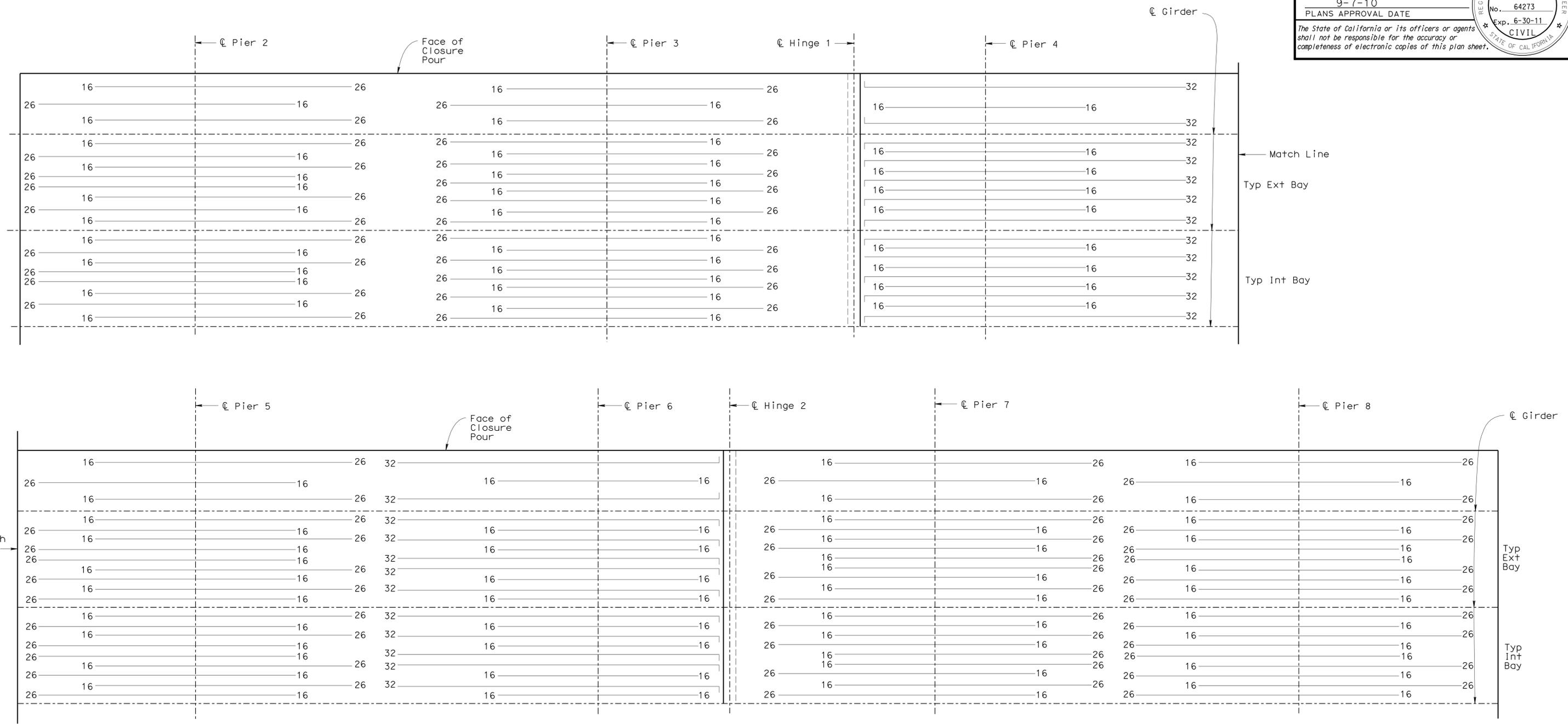
9-7-10  
 PLANS APPROVAL DATE

Eric Watson  
 No. 64273  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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**Notes:**

- All Reinf shown are #10
- Reinf shown is in addition to Reinf shown on "TYPICAL SECTION" sheet
- Numbers at ends of bars indicates distance from @ Piers.



**ADDITIONAL TOP LONGITUDINAL REINFORCEMENT**  
NO SCALE

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

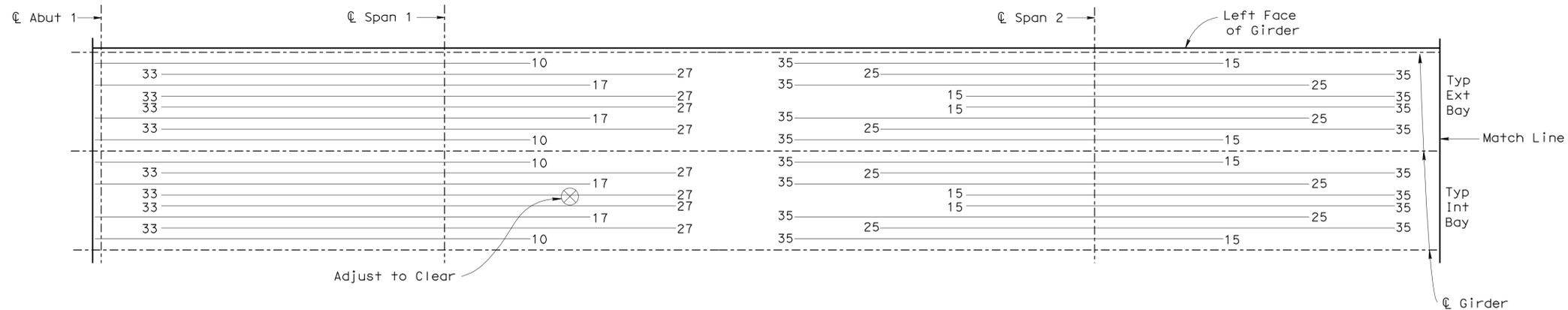
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Greg Thornton	CHECKED Vadim Shostak	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>1</b>	BRIDGE NO.	NATOMAS EAST CANAL BOH (WIDEN)	
	DETAILS	BY Jie Tang	CHECKED Vadim Shostak			24-0218	GIRDER TOP REINFORCEMENT	
	QUANTITIES	BY Eric Watson	CHECKED Jie Tang			POST MILE 5.21		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	
						REVISION DATES		SHEET 10 OF 26

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:33

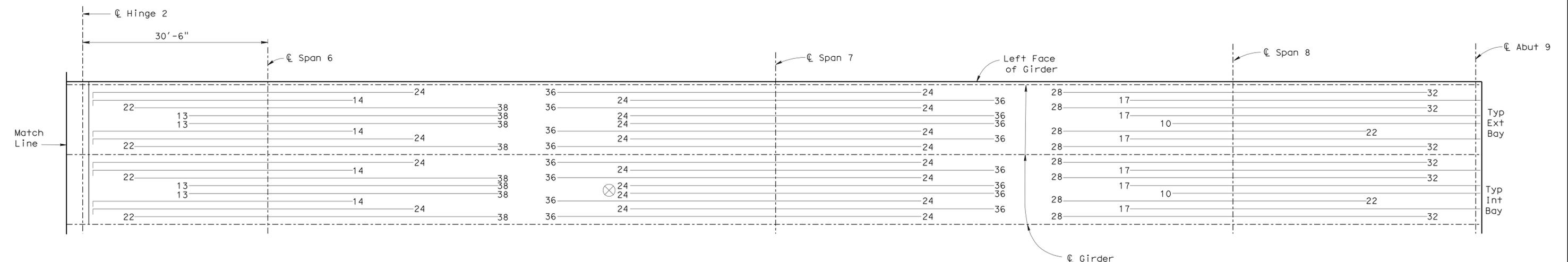
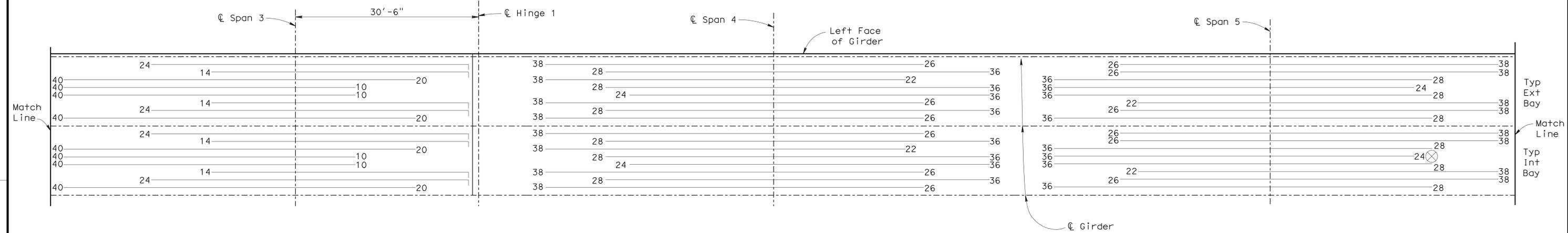
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	978	1012

Eric Watson 4/12/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
 No. 64273  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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- Notes:**
- All Reinf shown are #10.
  - Reinf shown is in addition to Reinf shown on "TYPICAL SECTION" sheet.
  - Numbers at ends of bars indicates distance from  $\varnothing$  Piers.
- Legend:**
- ⊗ - Indicates Flush Soffit Lights (Center bay only). See "Road Plans", adjust Reinf as necessary to clear lights.



**ADDITIONAL BOTTOM LONGITUDINAL REINFORCEMENT**  
NO SCALE

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

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak
DETAILS	BY Jie Tang	CHECKED Vadim Shostak
QUANTITIES	BY Eric Watson	CHECKED Jie Tang

**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 1**

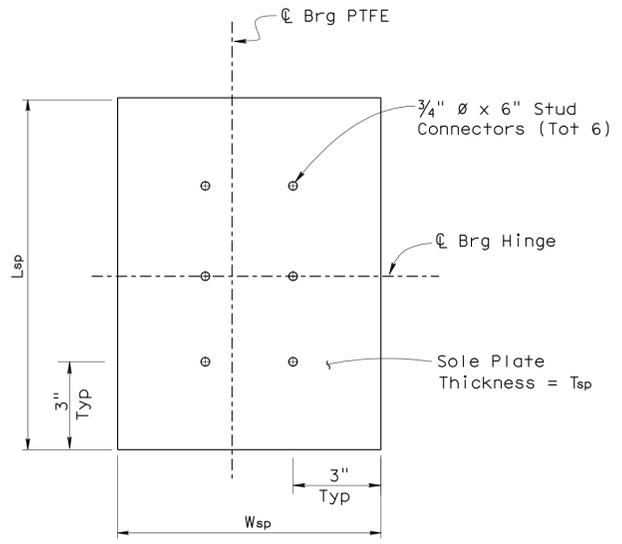
BRIDGE NO.	24-0218
POST MILE	5.21

**NATOMAS EAST CANAL BOH (WIDEN)**  
**GIRDER BOTTOM REINFORCEMENT**

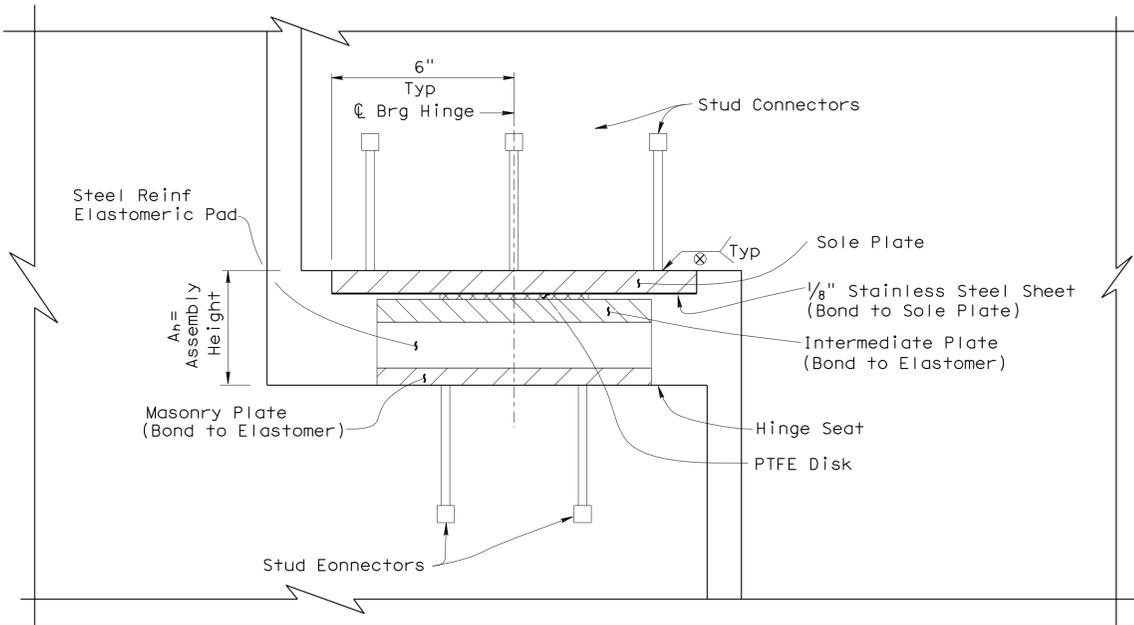
### PTFE/ELASTOMERIC BEARING TABLE

Hinge Location	Maximum Vertical Loading Per Bearing (Kips)	Minimum Vertical Loading Per Bearing (Kips)	Sole Plate			Stainless Steel Sheet			PTFE Disk		Intermediate Plate			Steel Reinforced Elastomeric Pad (Elastomer only)			Masonry Plate			A <sub>H</sub> (in)
			L <sub>sp</sub>	W <sub>sp</sub>	T <sub>sp</sub>	L <sub>ss</sub>	W <sub>ss</sub>	T <sub>ss</sub>	D <sub>o</sub>	T <sub>ptfe</sub> *	L <sub>ip</sub>	W <sub>ip</sub>	T <sub>ip</sub>	L <sub>ep</sub>	W <sub>ep</sub>	T <sub>ep</sub>	L <sub>mp</sub>	W <sub>mp</sub>	T <sub>mp</sub>	
			(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	
Hinge 1	130	78	12 1/2	9	2	12	9	1/8	7	1/4	10	18	3/4	10	18	1 1/2	10	18	3/4	5 5/8
Hinge 2	115	63	11 1/2	8 1/2	1 3/4	11 1/2	8 1/2	1/8	6 1/2	1/4	10	16	3/4	10	16	1 1/2	10	16	3/4	5 3/8

Note: Elastomeric pad thickness does not include internal steel plates. \* Thickness may range from 3/16 Min to 1/4 Max.

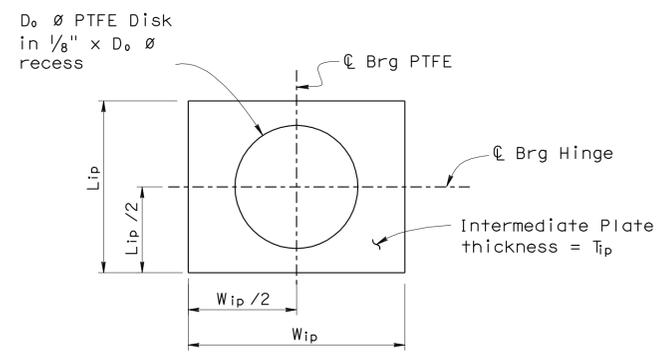


**SOLE PLATE**  
NO SCALE

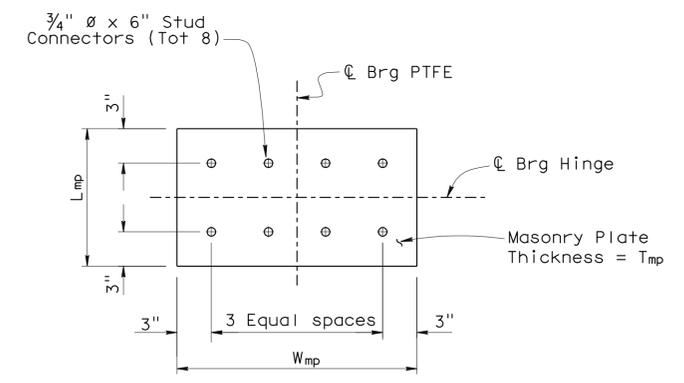


**BEARING DETAILS**  
NO SCALE

Note: Span 3 hinge shown. Span 6 hinge similar.



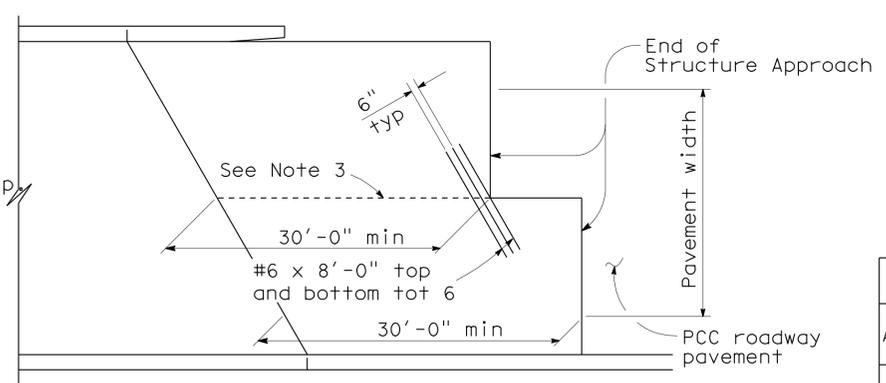
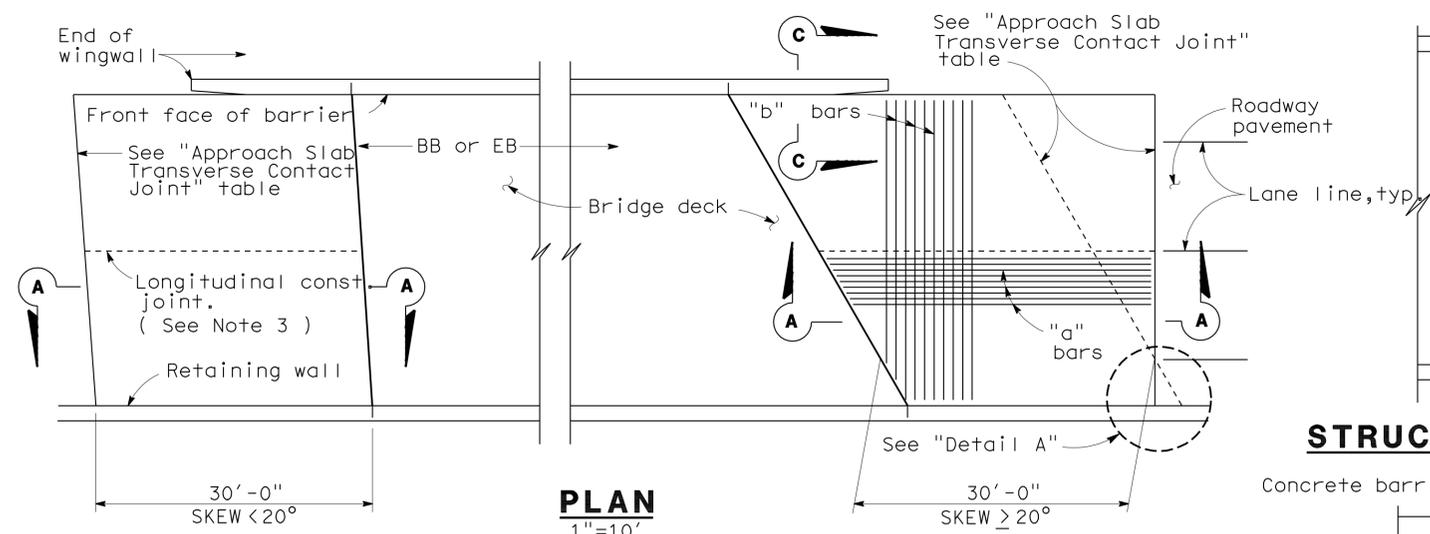
**INTERMEDIATE PLATE**  
NO SCALE



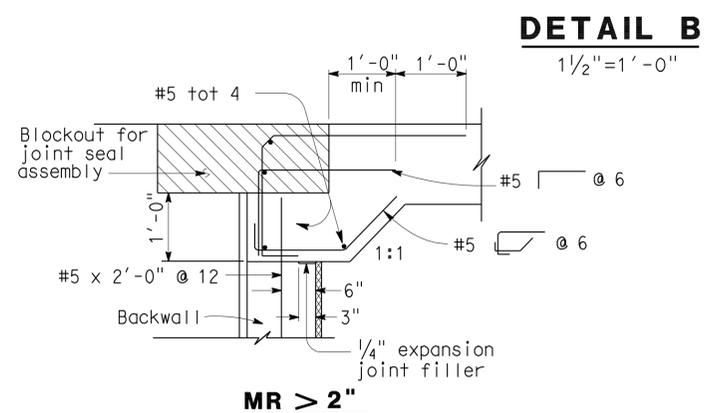
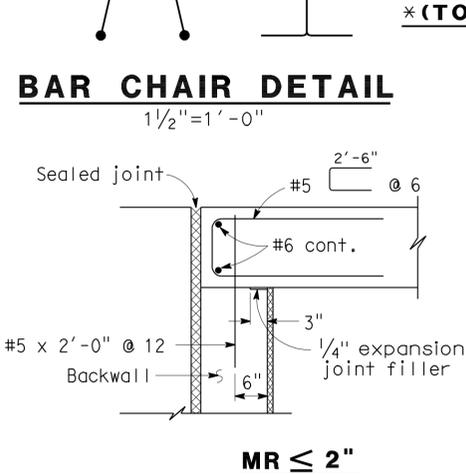
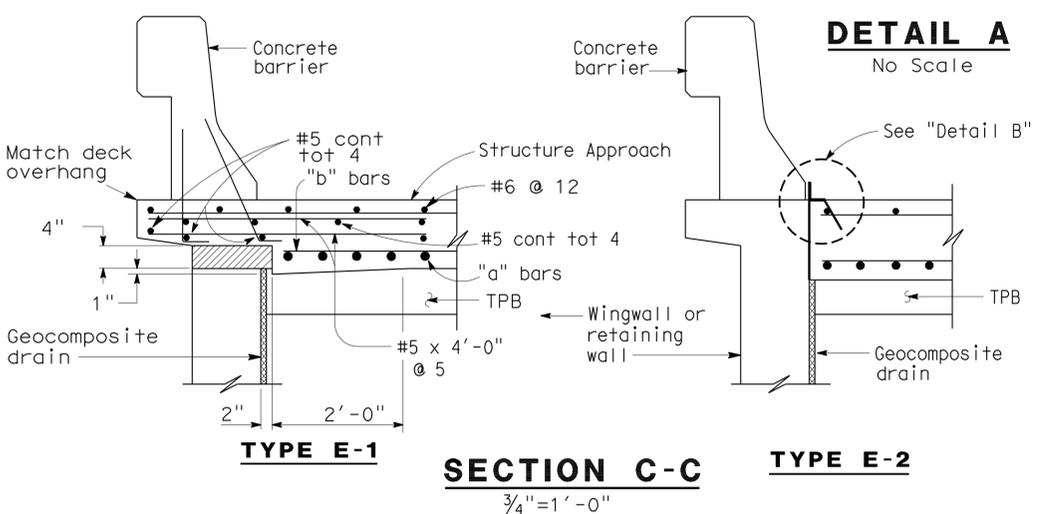
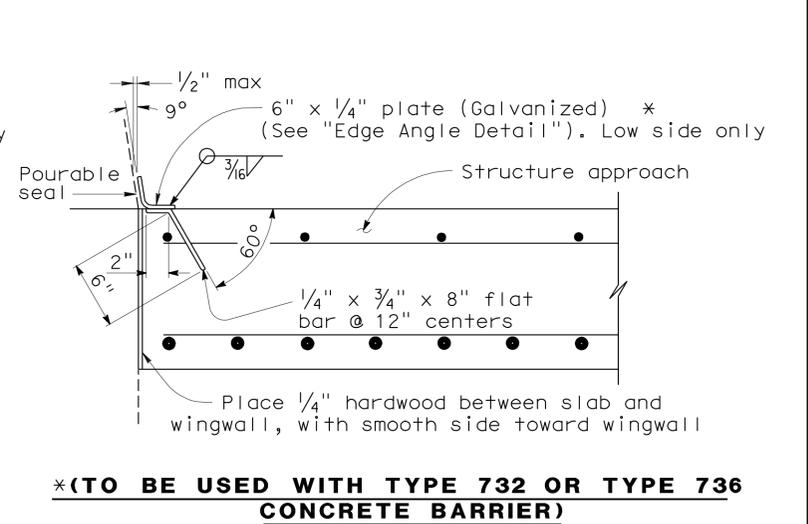
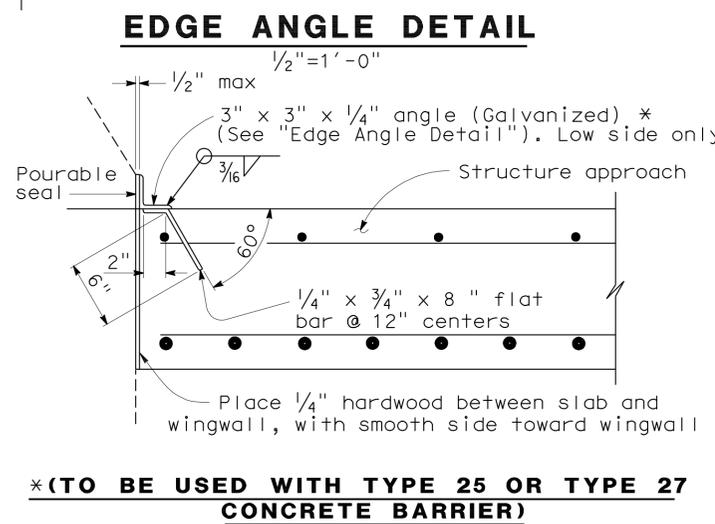
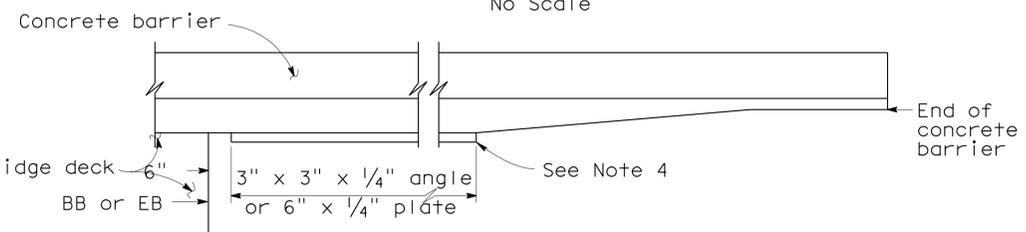
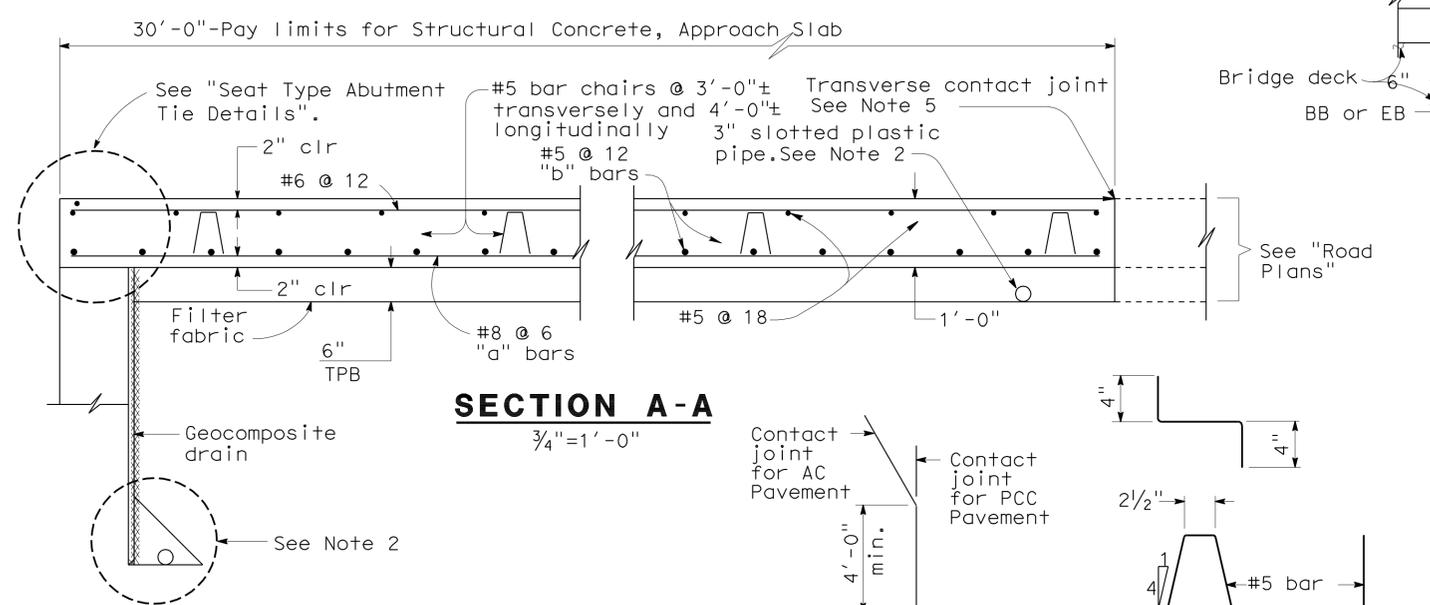
**MASONRY PLATE**  
NO SCALE

- Notes:
- Bearing Plates shall be placed level.
  - Grind front and back of Sole Plate, Intermediate Plate and Masonry Plate to 1/4" bevel after fabrication.
  - Design rotation = 0.015 rad.

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



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart.
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line.



**SEAT TYPE ABUTMENT TIE DETAILS (SEE NOTE 1)**  
3/4"=1'-0"

- NOTES:**
- For details not shown, see Structure Plans. For MR ≤ 2, adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - For drainage details, see "Structure Approach Drainage Details" sheet.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway.
- Remove all polystyrene.

STANDARD DRAWING			
RELEASE DATE 3/14/05	DESIGN BY M. TRAFFALIS	CHECKED E. THORKILDSEN	RELEASED BY
FILE NO. xs3-120e	DETAILS BY R. YEE	CHECKED E. THORKILDSEN	
	SUBMITTED BY M. HA	DRAWING DATE 4/98	OFFICE CHIEF

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO. 24-0218 MILE POST 5.21
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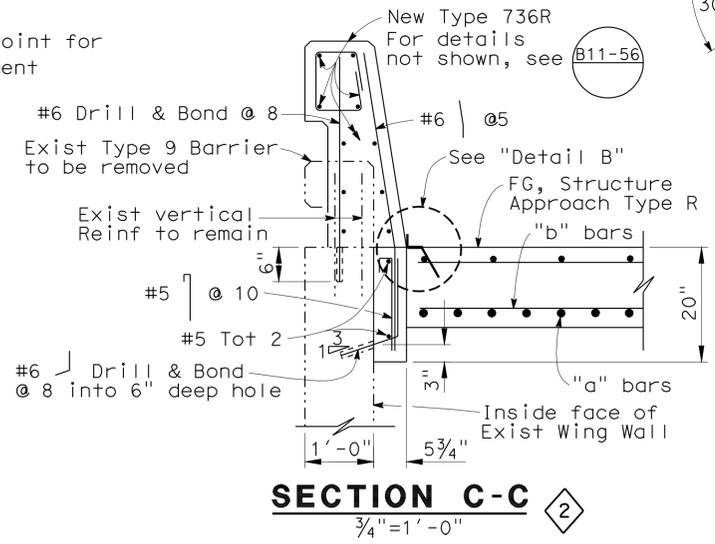
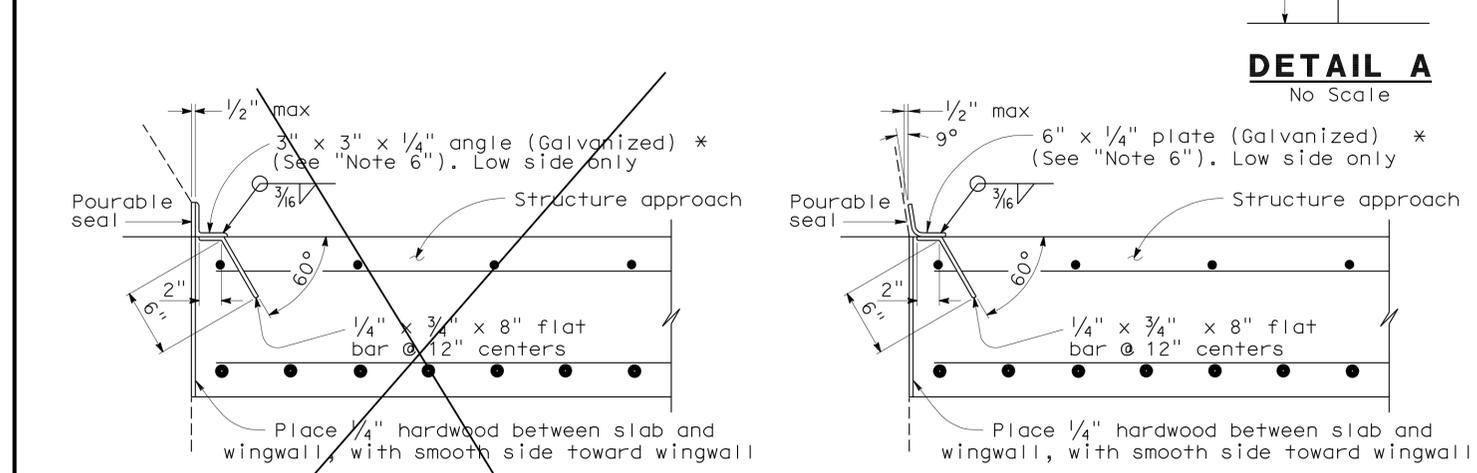
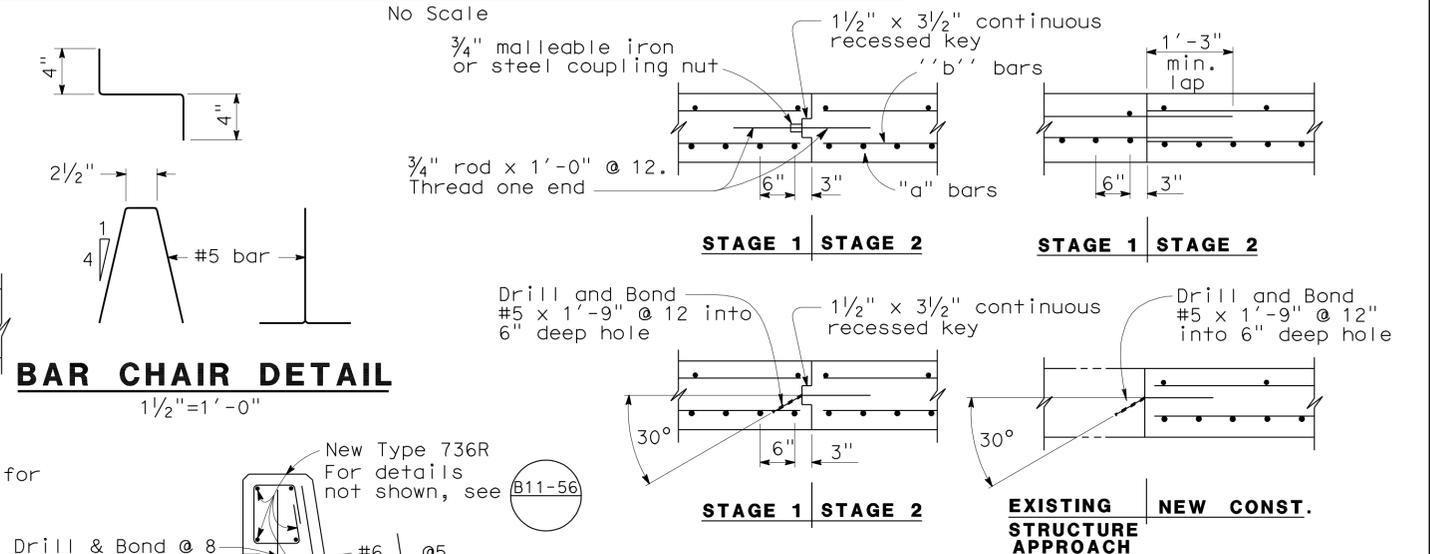
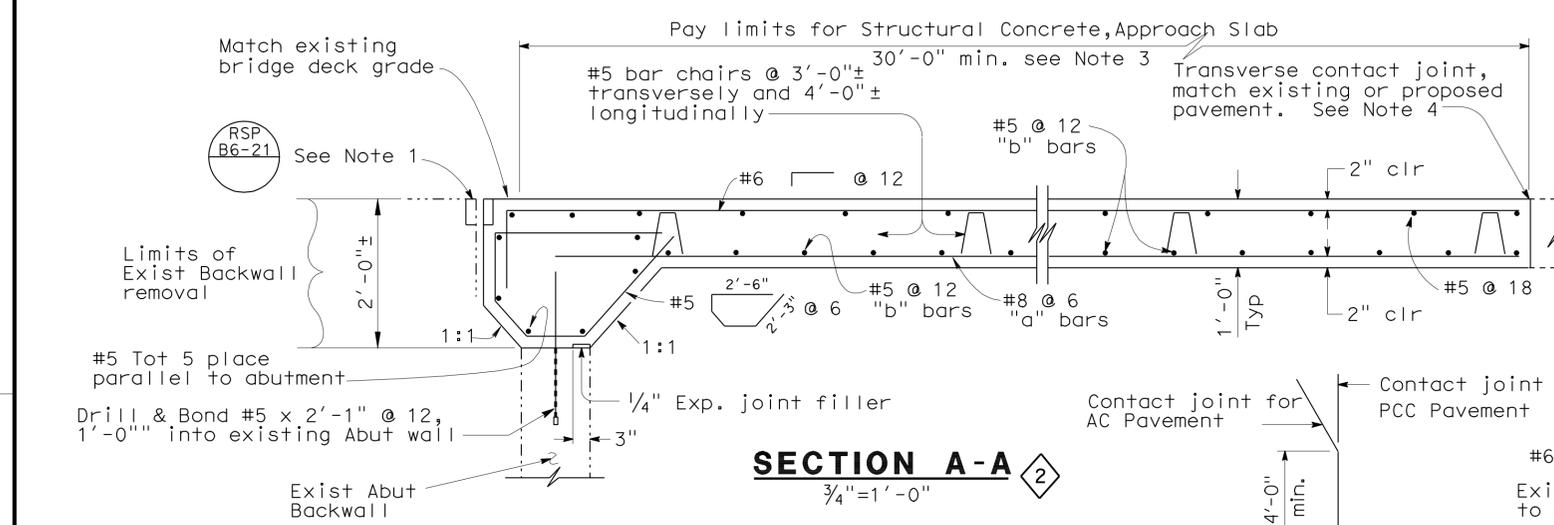
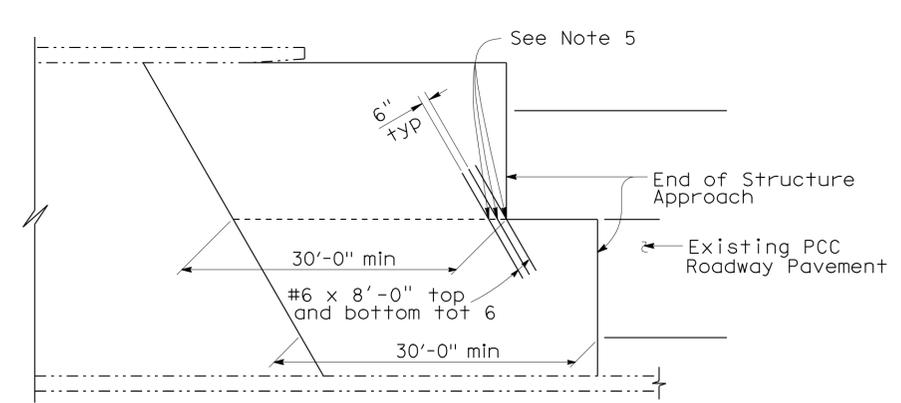
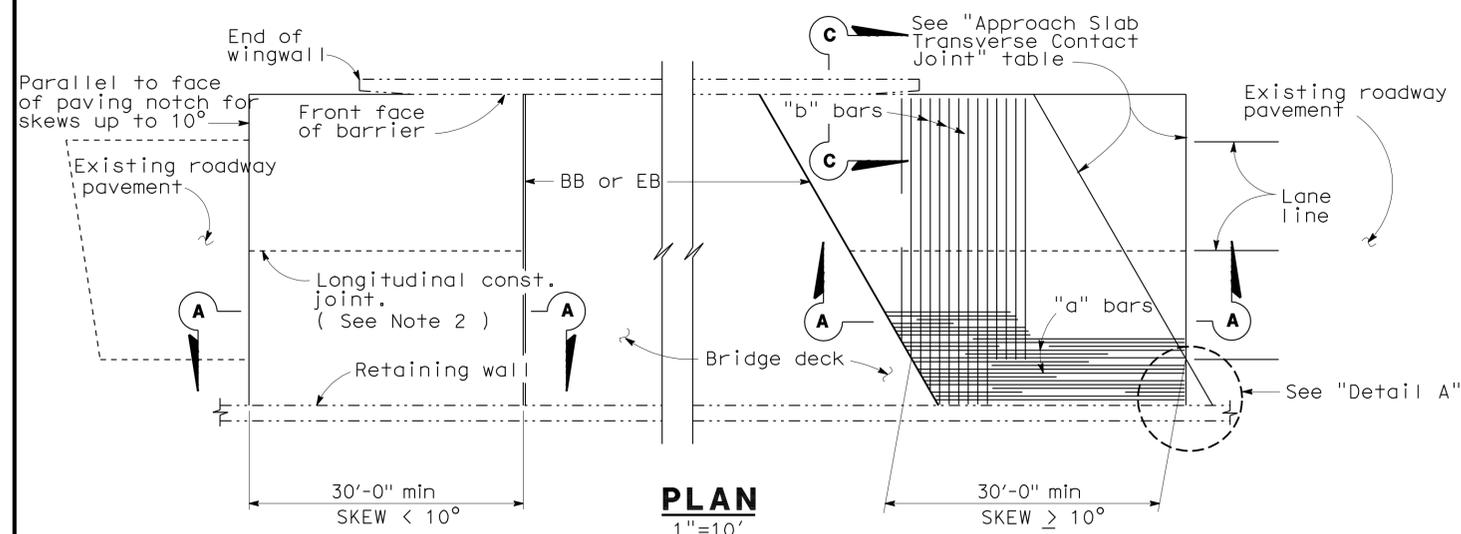
NATOMAS EAST CANAL BOH (WIDEN)	
STRUCTURE APPROACH TYPE N(30S)	

DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Yol,Sac	80	R10.9/R11.7 MO.0/M10.4	981	1012

Eric Watson 4/12/10  
REGISTERED ENGINEER - CIVIL

9-7-10  
PLANS APPROVAL DATE

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APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	Parallel to face of paving notch	Parallel to face of paving notch
10° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line

- NOTES:**
- Sealed joint, for M.R. see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines.
  - Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - Couplers are required for stage construction.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.

STANDARD DRAWING			
RELEASE DATE 3/14/05	DESIGN BY M. TRAFFALIS	CHECKED BY E. THORKILDSEN	RELEASED BY
FILE NO. xs3-130e	DETAILS BY R. YEE	CHECKED BY E. THORKILDSEN	
	SUBMITTED BY M. HA	DRAWING DATE 8/92	OFFICE CHIEF

- 1 Does not apply
- 2 Modified Detail

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.  
24-0218  
MILE POST  
5.21

NATOMAS EAST CANAL BOH (WIDEN)  
STRUCTURE APPROACH TYPE R(30S)

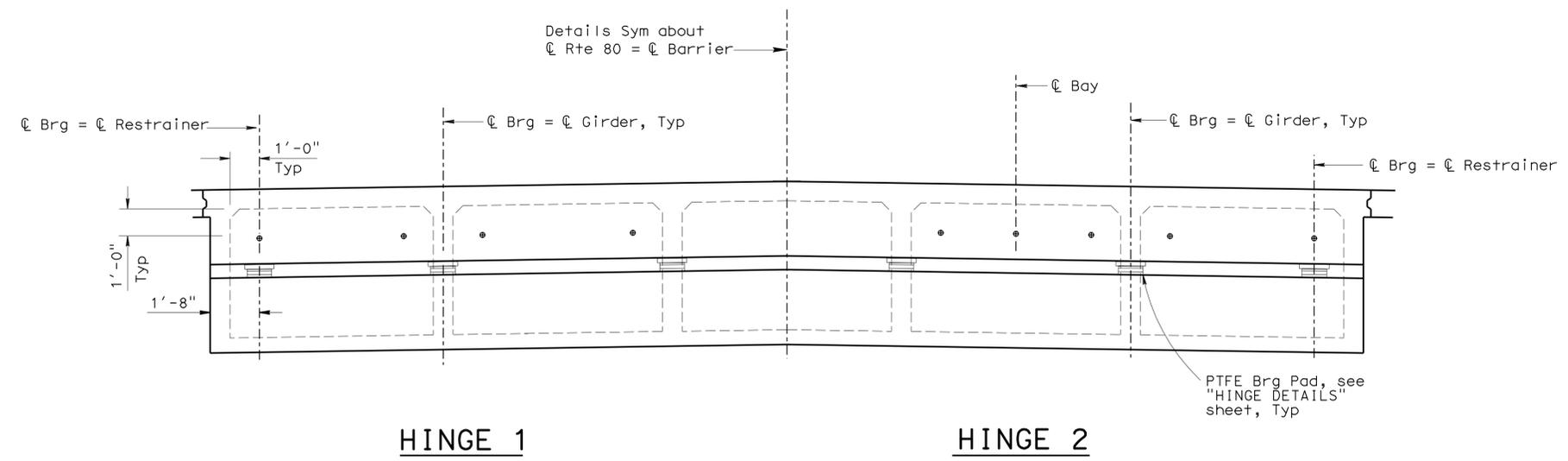
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	982	1012

*Eric Watson* 4/12/10  
 REGISTERED CIVIL ENGINEER DATE

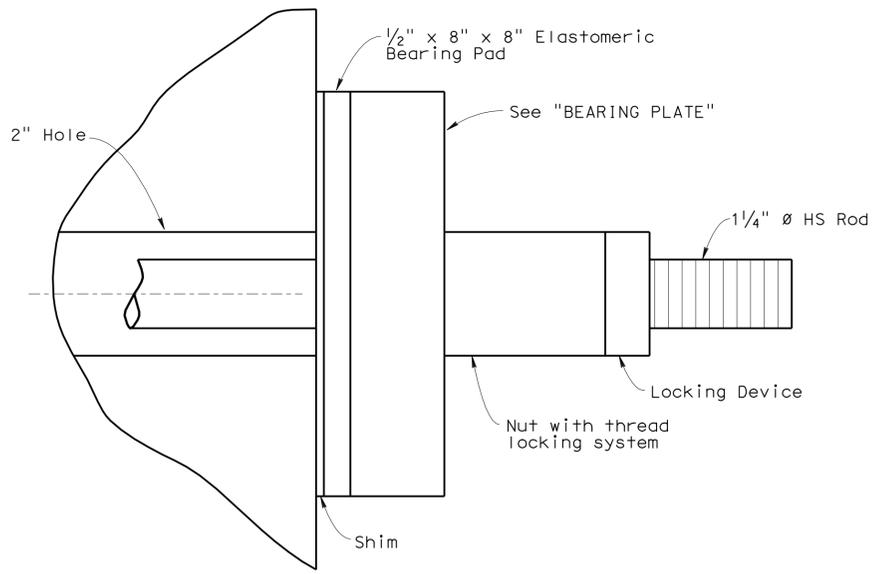
9-7-10  
 PLANS APPROVAL DATE

Eric Watson  
 No. 64273  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

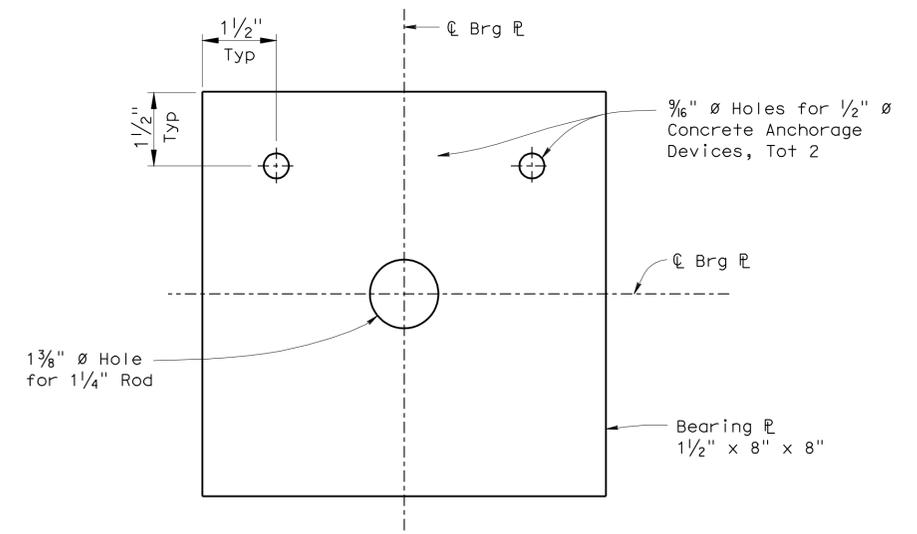
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**SECTION B-B**  
 $\frac{3}{8}'' = 1'-0''$



**END ANCHORAGE AT RODS**  
 NO SCALE



**BEARING PLATE**  
 NO SCALE

**Notes:**

1. Rods, hardware and bearing plates shall be galvanized.
2. Snug end anchorage, lock & remove shims. Shims to be placed on one end only.
3. Couplers with locking device may be used to spere rods.
4. For location of "SECTION B-B", see "GIRDER LAYOUT" sheet.

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

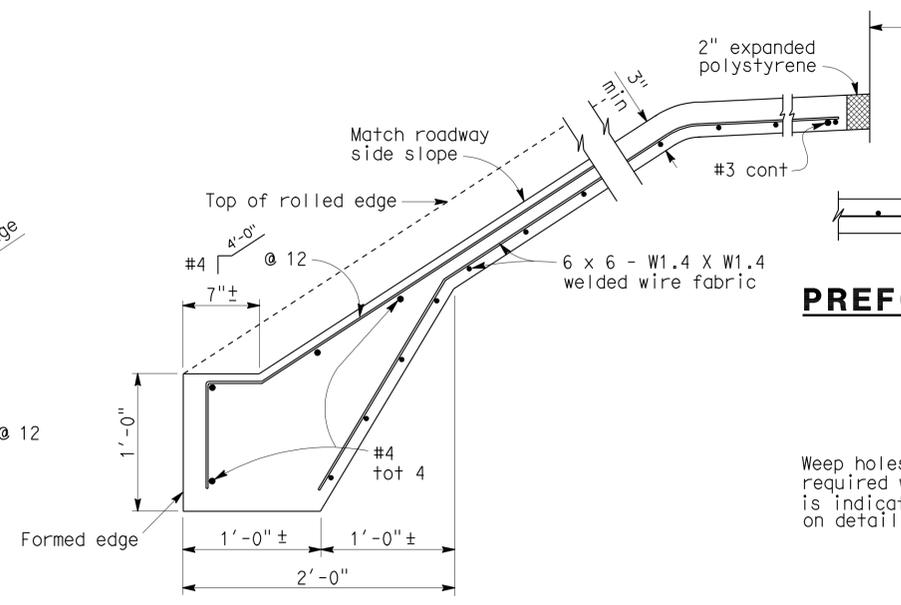
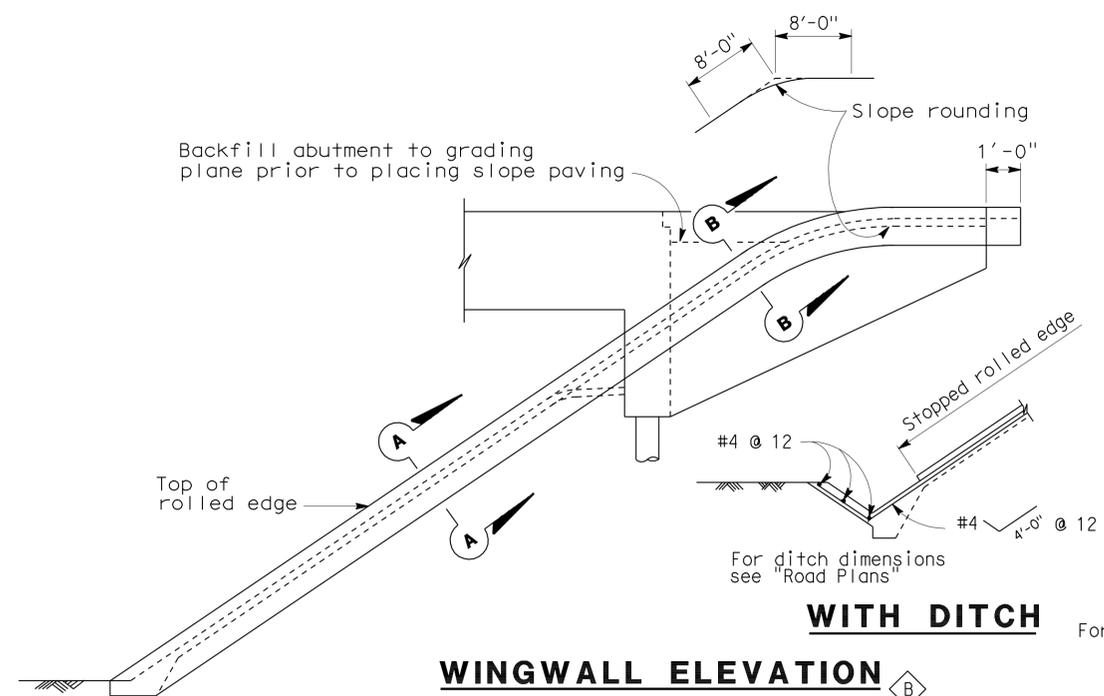
DESIGN BY DETAILS BY QUANTITIES BY	BY Greg Thornton	CHECKED Vadim Shostak	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO. 24-0218	<b>NATOMAS EAST CANAL BOH (WIDEN)</b> <b>RESTRAINER DETAILS</b>
	BY Jinrong Zhou	CHECKED Vadim Shostak			POST MILE 5.21	
	BY Eric Watson	CHECKED Jie Tang			REVISION DATES 12/04/08 12/11/08 12/14/08 01/14/09 04/12/10	

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 03 EA 3797U1 DISREGARD PRINTS BEARING EARLIER REVISION DATES 15 26

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:34

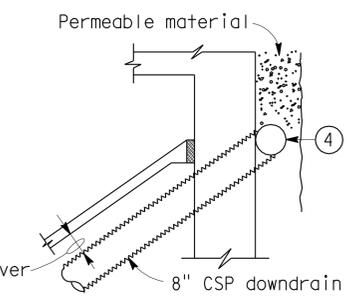
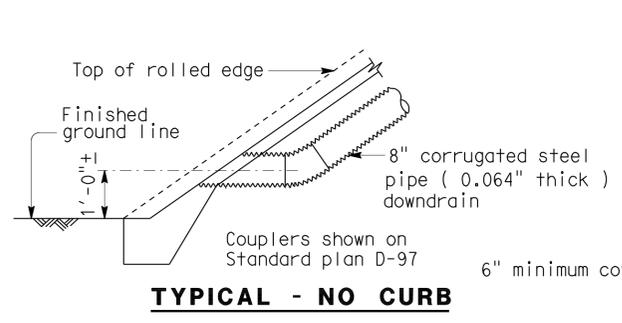
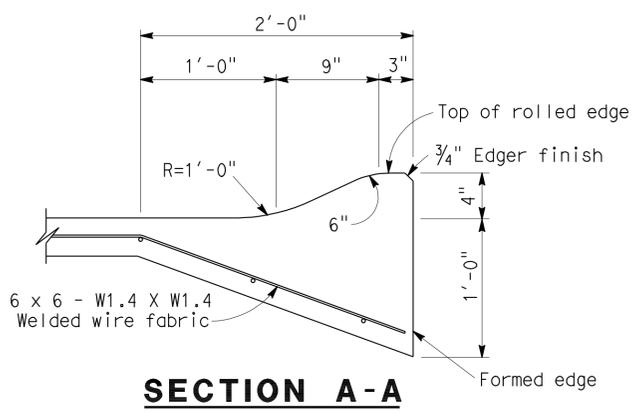
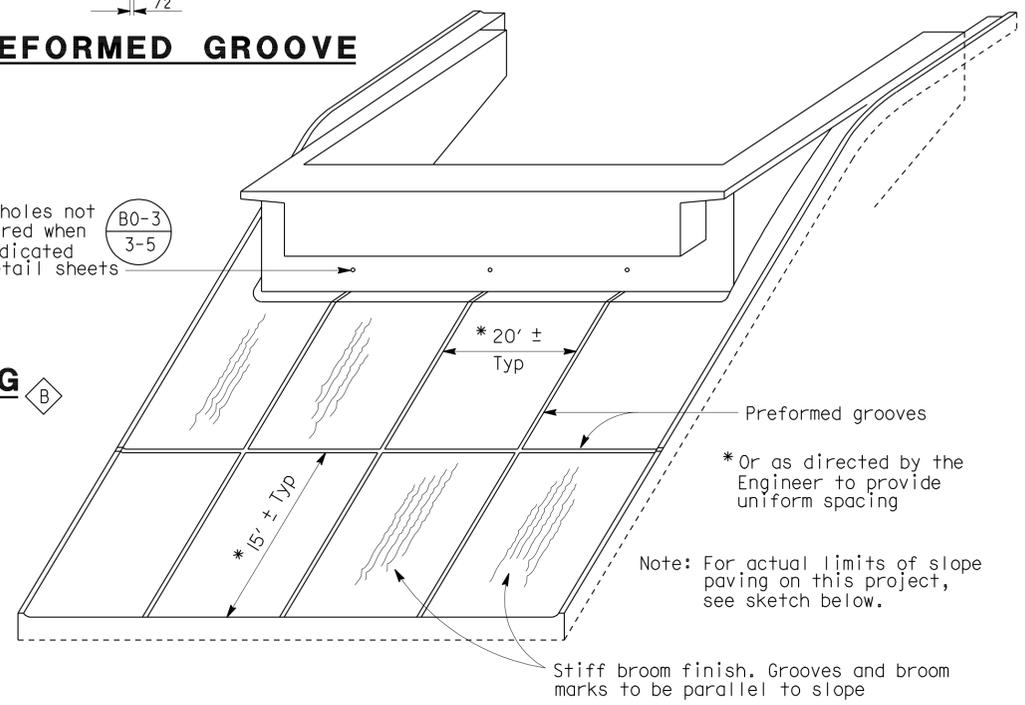
DIST.	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Vol, Sac	80	R10.9/R11.7, MO.0/M10.4	983	1012

Eric Watson 4/12/10  
 REGISTERED ENGINEER - CIVIL  
 9-7-10  
 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.

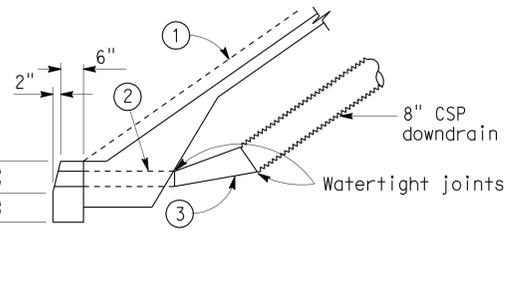
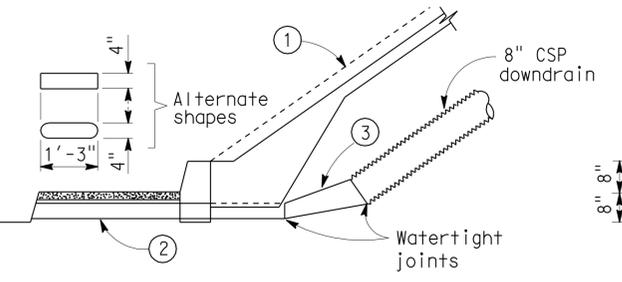
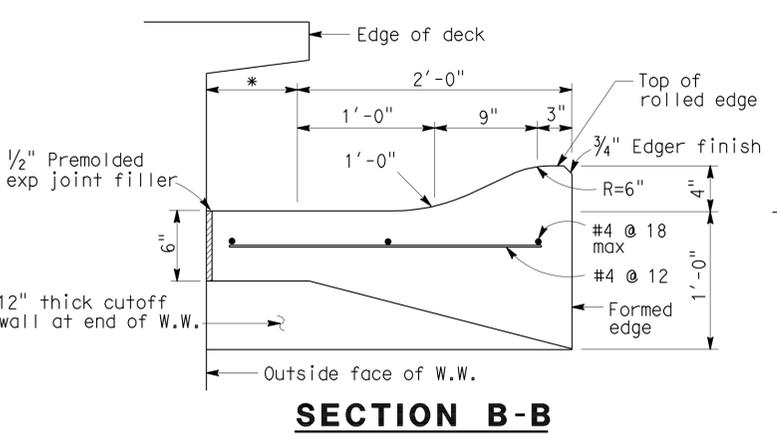


**PREFORMED GROOVE**

Weep holes not required when is indicated on detail sheets (B0-3 3-5)



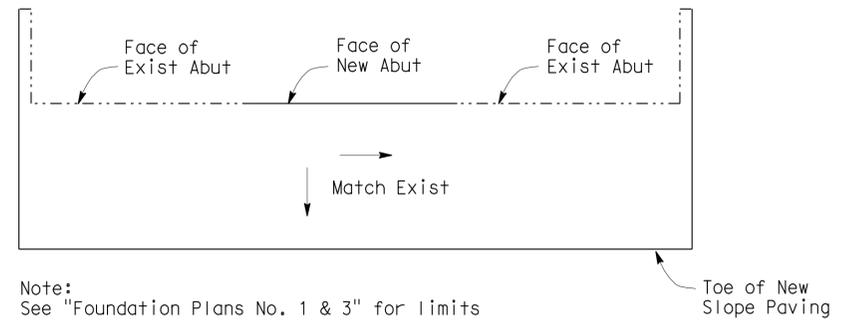
**LIMITS OF SLOPE PAVING**



**DRAINAGE DETAILS**

Note: Drainage details are only applicable when (B0-3 3-5) is indicated on detail sheets.

- ① Top of rolled edge
- ② Conduit: 0.064" galv corrugated steel or 0.109" smooth galv steel
- ③ Taper: { 0.064" / 0.109" smooth galv steel
- ④ 4" Perforated steel pipe ( 0.064" thick ) underdrain behind abutment. Connect to down drain as shown on limits of Slope Paving & Drainage layout.



\*This dimension becomes zero when edge of deck is at outside face of W.W.

STANDARD DRAWING			
RELEASE DATE	4/20/00	DESIGN BY	R. YEE
FILE NO.	xs4-210	SUBMITTED BY	C.W. PURKISS
CHECKED		CHECKED	
DRAWING DATE	3/89	OFFICE CHIEF	<i>Roberto Sorelle</i>

A Dimensions converted from SI to English.  
 B Modified Detail

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES

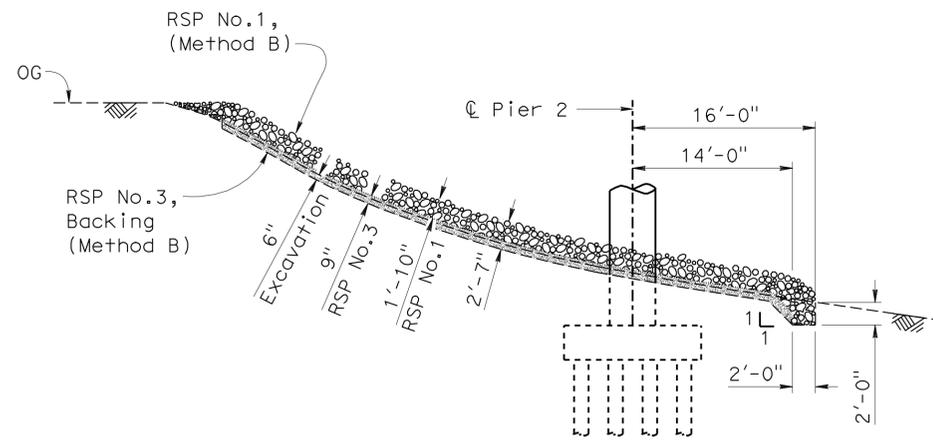
BRIDGE NO.	NATOMAS EAST CANAL BOH (WIDEN)	
24-0218	SLOPE PAVING - FULL SLOPE	
KILOMETER POST	5.21	



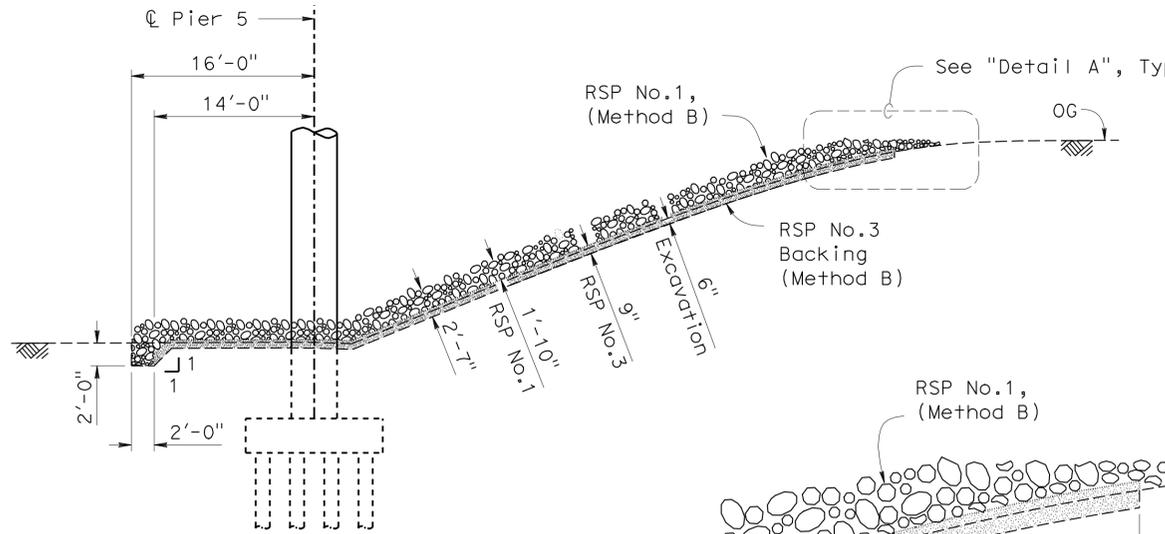
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	985	1012

**Eric Watson** 6/7/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
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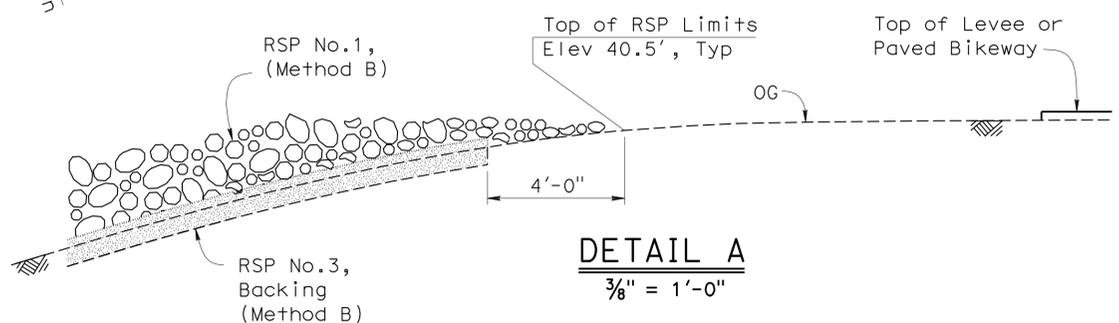
REGISTERED PROFESSIONAL ENGINEER  
**Eric Watson**  
 No. 64273  
 Exp. 6/30/2011  
 CIVIL  
 STATE OF CALIFORNIA



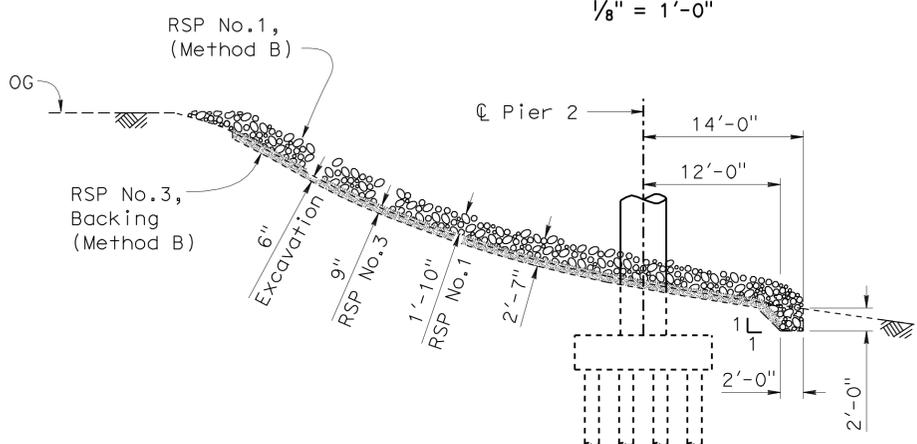
**SECTION A-A**  
1/8" = 1'-0"



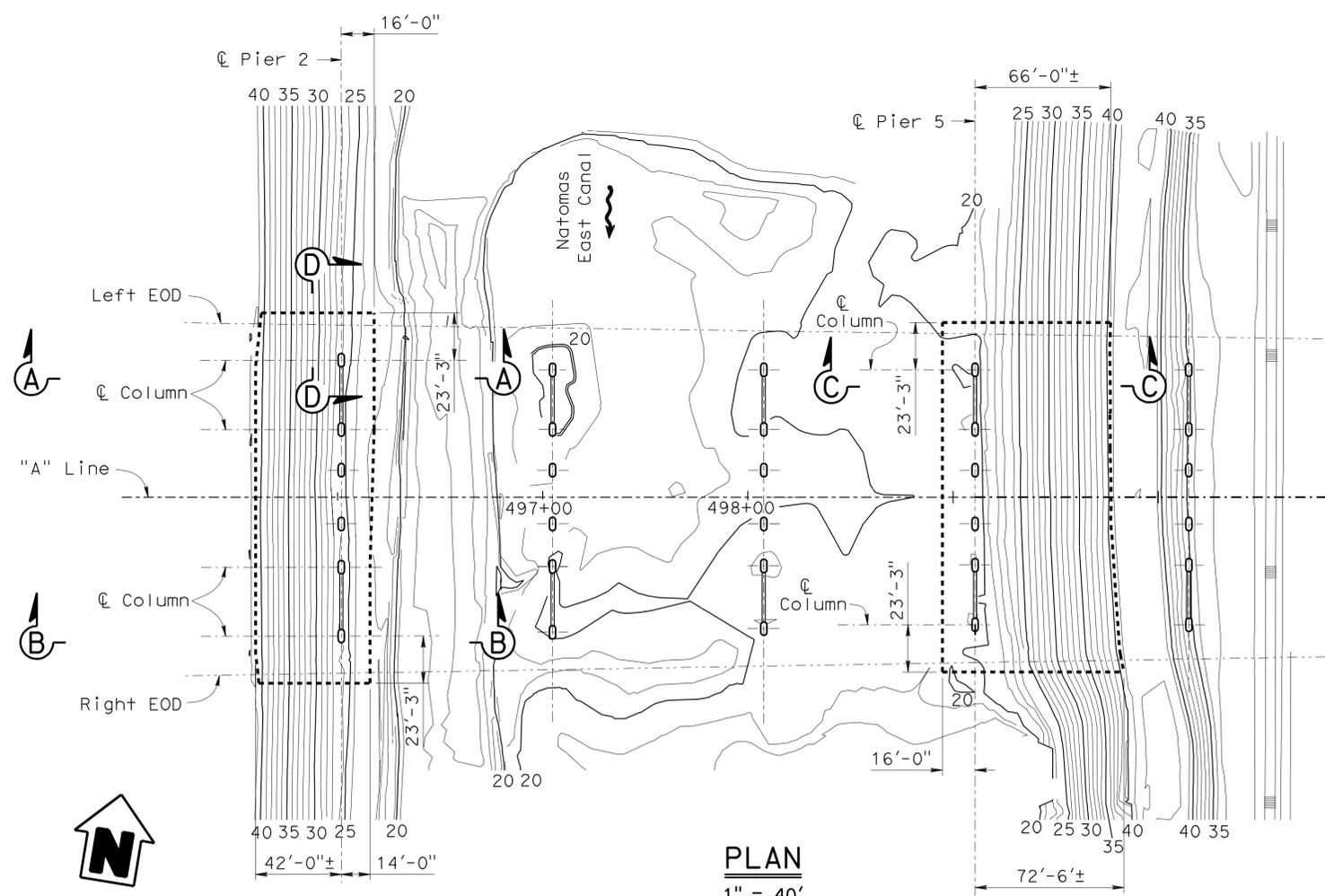
**SECTION C-C**  
1/8" = 1'-0"



**DETAIL A**  
3/8" = 1'-0"



**SECTION B-B**  
1/8" = 1'-0"



**PLAN**  
1" = 40'

----- Indicates Limits of RSP

Note:  
Transition is typical for both Piers 2 & 5 upstream and downstream

**SECTION D-D**  
1/4" = 1'-0"

DESIGN	BY Steve Ng	CHECKED Eric Watson
DETAILS	BY Bob Huddleston	CHECKED Eric Watson
QUANTITIES	BY Eric Watson	CHECKED Greg Thornton

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

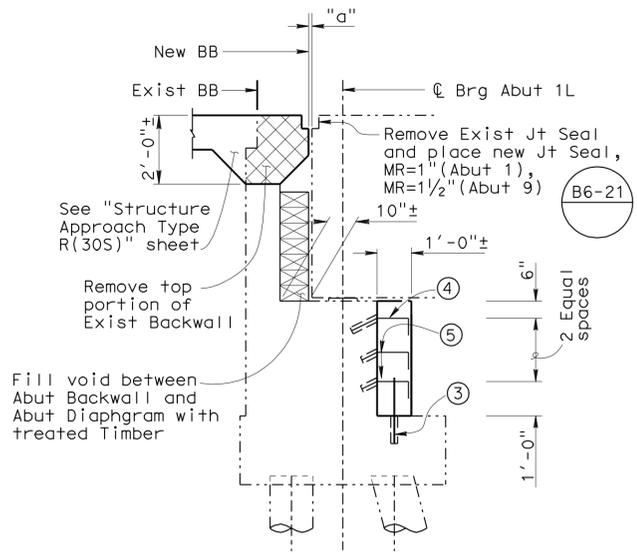
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO.	24-0218
POST MILE	5.21

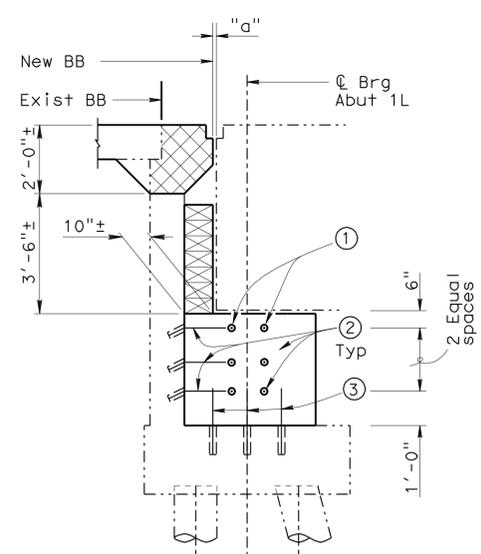
**NATOMAS EAST CANAL BOH (WIDEN)**  
**ROCK SLOPE PROTECTION DETAILS**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	986	1012

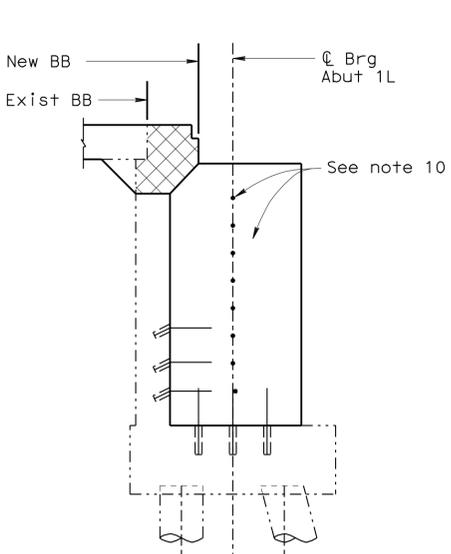
Eric Watson 4/12/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
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**SECTION A-A**  
3/8" = 1'-0"

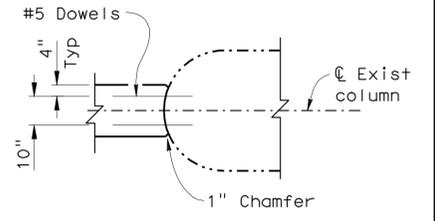


**SECTION B-B**  
3/8" = 1'-0"

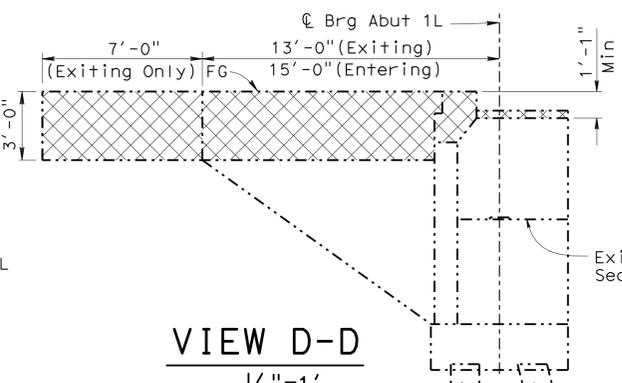
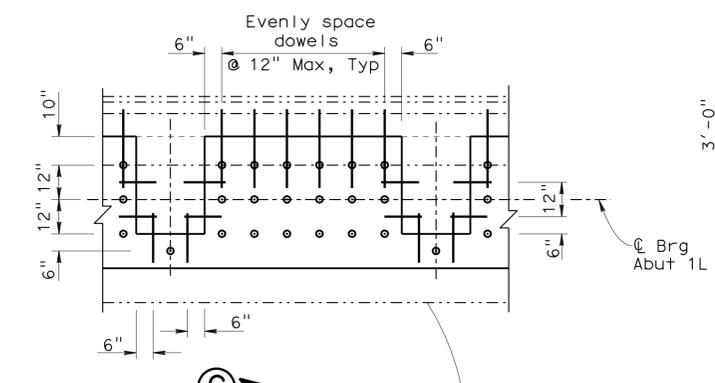


**SECTION C-C**  
3/8" = 1'-0"

- Notes :**
- Drill & bond #5  $\frac{10}{3}$  1'-6" dowels in 10" deep hole.
  - Drill & bond #5  $\frac{6}{3}$  1'-6" dowels in 6" deep hole.
  - Drill & bond #5 x 2'-0" dowels in 6" deep hole.
  - Drill & bond #5  $\frac{10}{3}$  9" dowels in 10" deep hole.
  - Drill & bond #5  $\frac{6}{3}$  9" dowels in 6" deep hole.
  - Drill & bond #5  $\frac{10}{3}$  1'-6" dowels @ 1'-0" in 10" deep hole, along full height of In-Fill Wall. (Exist column Reinf shall not be disturbed.)
  - For  $\text{C} \rightarrow \text{C}$  to  $\text{C} \rightarrow \text{C}$  dimension and footing width of Exist structure see "FOUNDATION PLAN" sheets
  - For details not shown in "SECTION B-B" and "SECTION C-C", see "SECTION A-A"
  - For "LIMITS OF PAYMENT-EXCAVATION", See "INDEX TO PLANS" sheet.
  - For details not shown, See "SECTION B-B" on "ABUTMENT LAYOUT AND DETAILS" sheet.



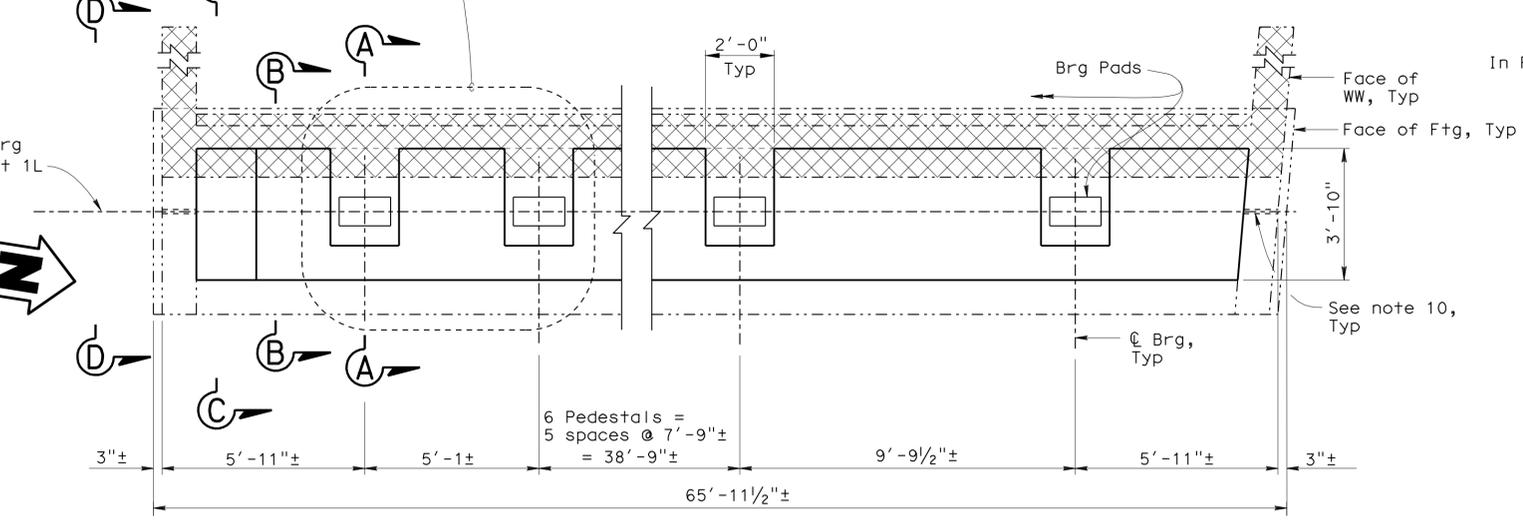
**SECTION E-E**  
3/8" = 1'-0"



**VIEW D-D**  
1/4" = 1'

- Legend:**
- ⊙ - Indicates #5 dowel.
  - ▨ - Indicates Bridge Removal
  - - Indicates Exist Structure.

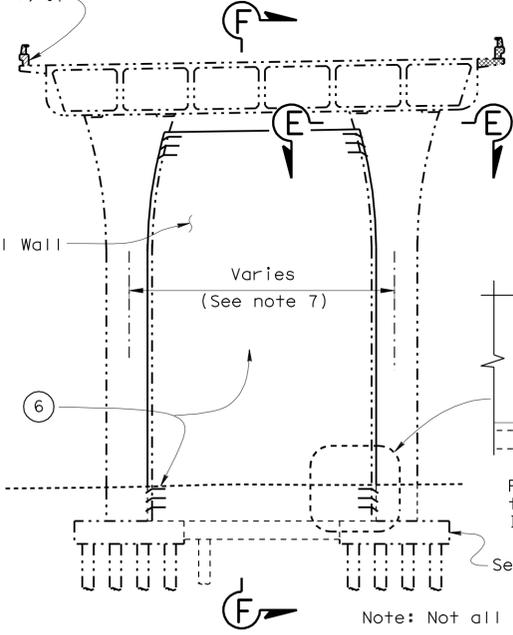
Replace Exist Type 9 Barrier Rail with Type 736M Barrier Rail and Chain Link Railing Type 7 (Mod), Typ



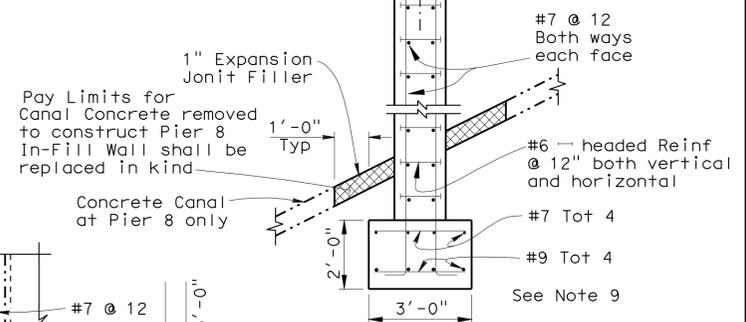
**PLAN**  
3/8" = 1'-0"  
**ABUTMENT RETROFIT**

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

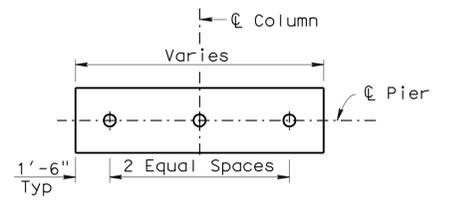
**Note:**  
Abut 1L shown, abut 1R, 9L and 9R similar.



**ELEVATION**  
1" = 10'-0"



**SECTION F-F**  
3/8" = 1'-0"



**FOOTING PLAN**  
NO SCALE

**IN-FILL WALL**

DESIGN	BY Greg Thornton	CHECKED Vadim Shostak
DETAILS	BY Bob Huddleston/Jie Tang	CHECKED Vadim Shostak
QUANTITIES	BY Eric Watson	CHECKED Jie Tang

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.	24-0218
POST MILE	5.21

NATOMAS EAST CANAL BOH (WIDEN)  
MISCELLANEOUS RETROFIT DETAILS



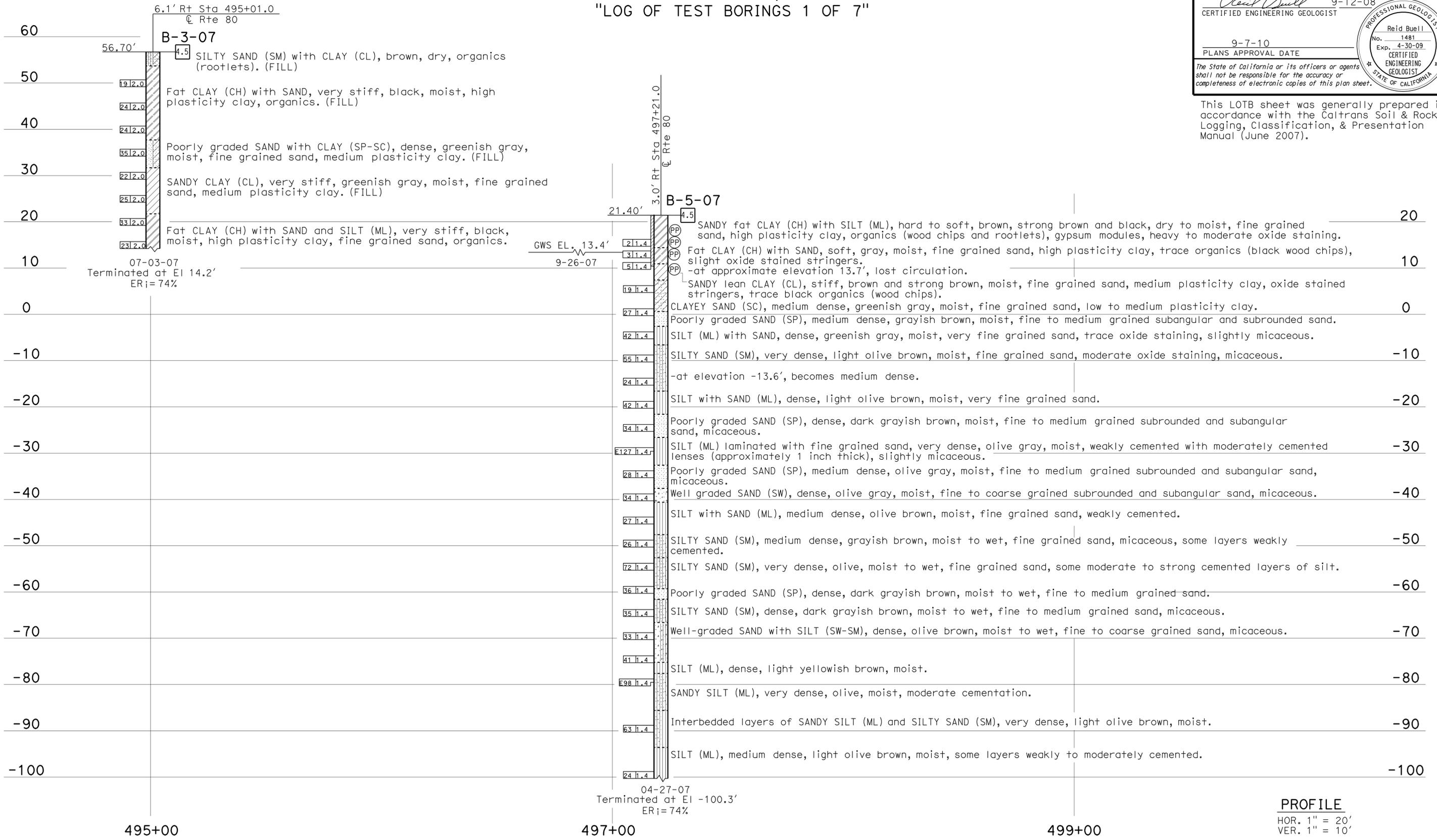
FOR PLAN VIEW, SEE  
"LOG OF TEST BORINGS 1 OF 7"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	988	1012

9-12-08  
CERTIFIED ENGINEERING GEOLOGIST  
Reid Buell  
No. 1481  
Exp. 4-30-09  
CERTIFIED ENGINEERING GEOLOGIST  
STATE OF CALIFORNIA

9-7-10  
PLANS APPROVAL DATE

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**PROFILE**  
HOR. 1" = 20'  
VER. 1" = 10'

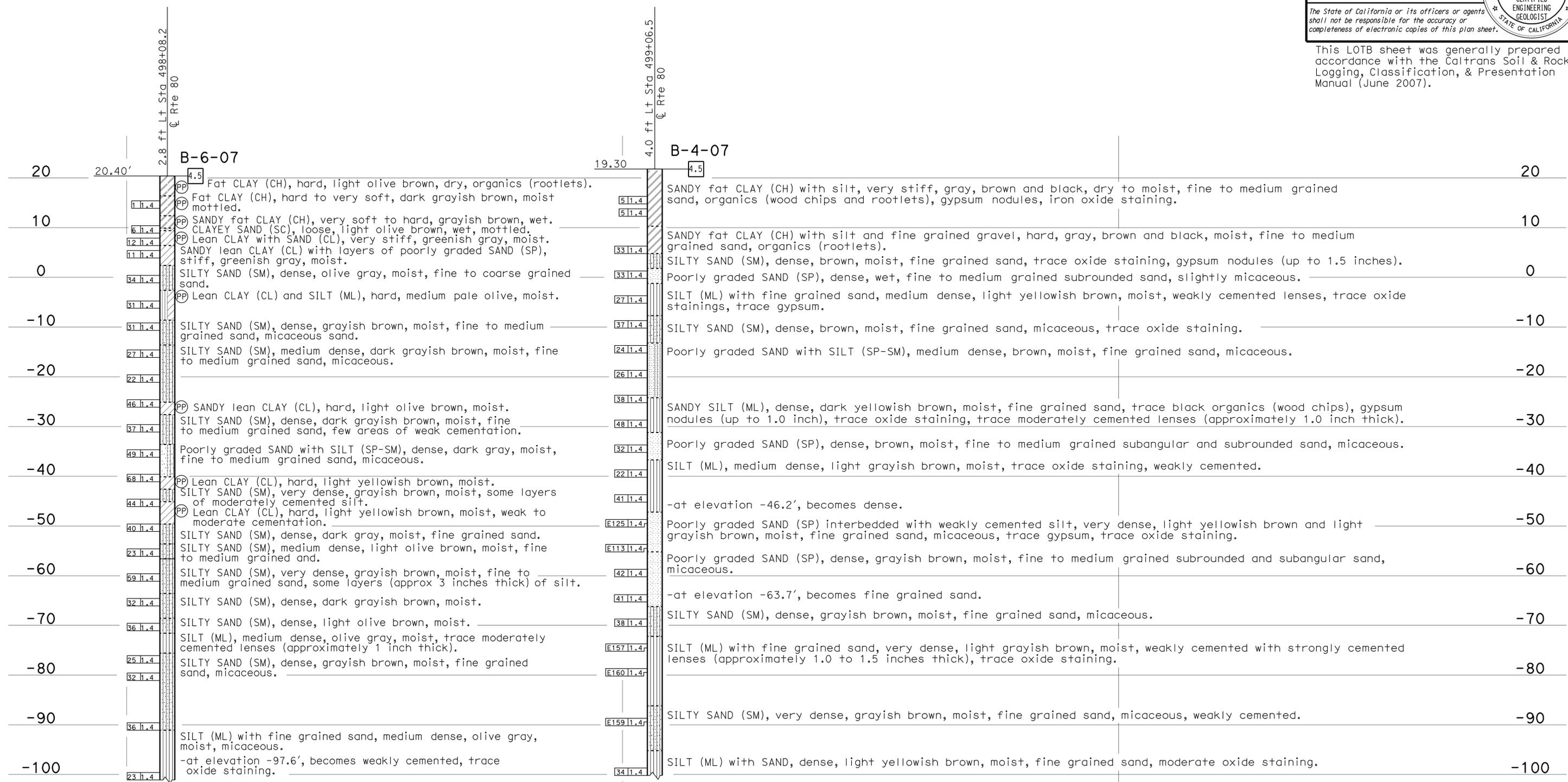
<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b>		<b>DIVISION OF ENGINEERING SERVICES</b>		<b>BRIDGE NO.</b>		<b>NATOMAS EAST CANAL BOH (WIDEN)</b>	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen 3/08		FIELD INVESTIGATION BY:		DEPARTMENT OF TRANSPORTATION		24-0218		<b>LOG OF TEST BORINGS 2 OF 7</b>	
NAME: R. Bibbens		CHECKED BY: J. Martin		J. Martin, J. Kaump		DESIGN BRANCH 1		POST MILES			
								5.2			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03 EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET 21 OF 26	

USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:36

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	989	1012

9-12-08  
 CERTIFIED ENGINEERING GEOLOGIST  
 Reid Buell  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 STATE OF CALIFORNIA  
 PLANS APPROVAL DATE: 9-7-10  
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FOR PLAN VIEW, SEE  
"LOG OF TEST BORINGS 1 OF 7"



This LOTB sheet was generally prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (June 2007).

PROFILE  
HOR. 1" = 10'  
VER. 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		NATOMAS EAST CANAL BOH (WIDEN)	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen 3/08		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		24-0218		LOG OF TEST BORINGS 3 OF 7	
NAME: R. Bibbens		CHECKED BY: J. Martin		FIELD INVESTIGATION BY:		DESIGN BRANCH 1		POST MILES			
				J. Martin, J. Kaump				5.2			
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 03		EA 3797U1		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES	
				0 1 2 3				09-18-08 12/11/08 04/12/10		SHEET 22 OF 26	



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	991	1012

9-12-08  
 CERTIFIED ENGINEERING GEOLOGIST  
 Reid Buell  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 STATE OF CALIFORNIA

9-7-10  
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GROUP SYMBOLS AND NAMES			
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		Lean CLAY
	Well-graded GRAVEL with SAND		Lean CLAY with SAND
	Poorly graded GRAVEL		Lean CLAY with GRAVEL
	Poorly graded GRAVEL with SAND		SANDY lean CLAY
	Well-graded GRAVEL with SILT		GRAVELLY lean CLAY
	Well-graded GRAVEL with SILT and SAND		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY		SANDY lean CLAY with GRAVEL
	(or SILTY CLAY)		GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY and SAND		GRAVELLY lean CLAY with SAND
	(or SILTY CLAY and SAND)		
	Poorly graded GRAVEL with SILT		SILT
	Poorly graded GRAVEL with SILT and SAND		SILT with SAND
	Poorly graded GRAVEL with CLAY		SILT with GRAVEL
	(or SILTY CLAY)		SANDY SILT
	Poorly graded GRAVEL with CLAY and SAND		SANDY SILT with GRAVEL
	(or SILTY CLAY and SAND)		GRAVELLY SILT
	SILTY GRAVEL		GRAVELLY SILT with SAND
	SILTY GRAVEL with SAND		ORGANIC lean CLAY
	CLAYEY GRAVEL		ORGANIC lean CLAY with SAND
	CLAYEY GRAVEL with SAND		ORGANIC lean CLAY with GRAVEL
	SILTY, CLAYEY GRAVEL		SANDY ORGANIC lean CLAY
	SILTY, CLAYEY GRAVEL with SAND		SANDY ORGANIC lean CLAY with GRAVEL
	Well-graded SAND		GRAVELLY ORGANIC lean CLAY
	Well-graded SAND with GRAVEL		GRAVELLY ORGANIC lean CLAY with SAND
	Poorly graded SAND		ORGANIC SILT
	Poorly graded SAND with GRAVEL		ORGANIC SILT with SAND
	Well-graded SAND with SILT		ORGANIC SILT with GRAVEL
	Well-graded SAND with SILT and GRAVEL		SANDY ORGANIC SILT
	Well-graded SAND with CLAY		SANDY ORGANIC SILT with GRAVEL
	(or SILTY CLAY)		GRAVELLY ORGANIC SILT
	Well-graded SAND with CLAY and GRAVEL		GRAVELLY ORGANIC SILT with SAND
	(or SILTY CLAY and GRAVEL)		
	Poorly graded SAND with SILT		ORGANIC fat CLAY
	Poorly graded SAND with SILT and GRAVEL		ORGANIC fat CLAY with SAND
	Poorly graded SAND with CLAY		ORGANIC fat CLAY with GRAVEL
	(or SILTY CLAY)		SANDY ORGANIC fat CLAY
	Poorly graded SAND with CLAY and GRAVEL		SANDY ORGANIC fat CLAY with GRAVEL
	(or SILTY CLAY and GRAVEL)		GRAVELLY ORGANIC fat CLAY
	SILTY SAND		GRAVELLY ORGANIC fat CLAY with SAND
	SILTY SAND with GRAVEL		ORGANIC elastic SILT
	CLAYEY SAND		ORGANIC elastic SILT with SAND
	CLAYEY SAND with GRAVEL		ORGANIC elastic SILT with GRAVEL
	SILTY, CLAYEY SAND		SANDY ORGANIC elastic SILT
	SILTY, CLAYEY SAND with GRAVEL		SANDY ORGANIC elastic SILT with GRAVEL
	PEAT		GRAVELLY ORGANIC elastic SILT
			GRAVELLY ORGANIC elastic SILT with SAND
	COBBLES		ORGANIC SOIL
	COBBLES and BOULDERS		ORGANIC SOIL with SAND
			ORGANIC SOIL with GRAVEL
			SANDY ORGANIC SOIL
			SANDY ORGANIC SOIL with GRAVEL
			GRAVELLY ORGANIC SOIL
			GRAVELLY ORGANIC SOIL with SAND

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
(PP)	Pocket Penetrometer
(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)
(TV)	Pocket Torvane
(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)
(VS)	Vane Shear (AASHTO T 223)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N <sub>60</sub> (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE	
Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

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

PARTICLE SIZE		
Description	Size	
Boulder	> 12"	
Cobble	3" to 12"	
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO. 24-0218	NATOMAS EAST CANAL BOH (WIDEN)
	PREPARED BY: I.G-Remmen, 9/08			POST MILE 5.2	
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 24 OF 26

FILE => 24-0218-z-1+b05.dgn

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	992	1012

 9-12-08  
 CERTIFIED ENGINEERING GEOLOGIST

9-7-10  
 PLANS APPROVAL DATE

PROFESSIONAL GEOLOGIST  
 Reid Buell  
 No. 1481  
 Exp. 4-30-09  
 CERTIFIED ENGINEERING GEOLOGIST  
 STATE OF CALIFORNIA

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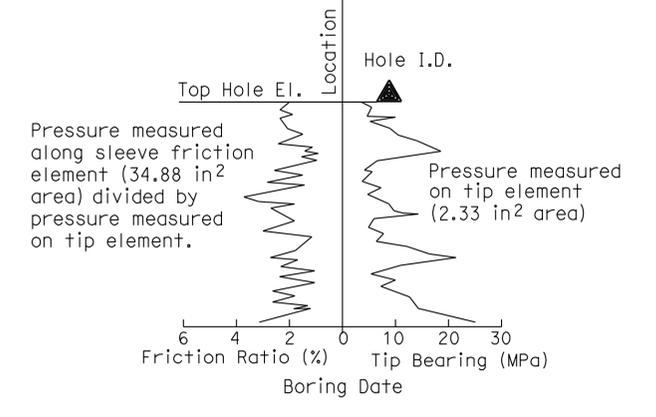
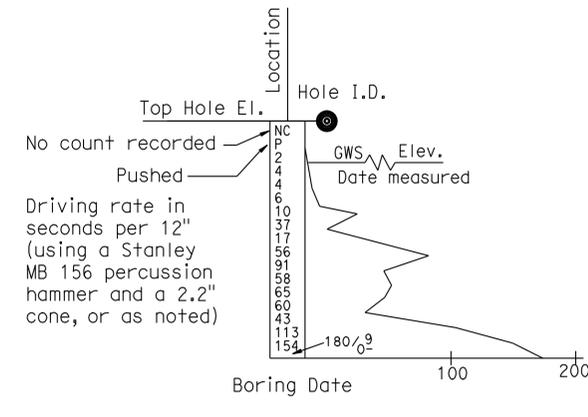
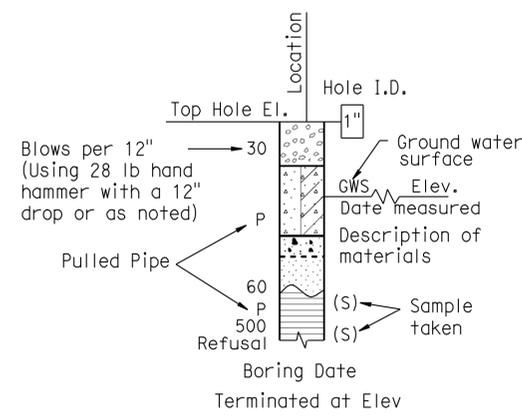
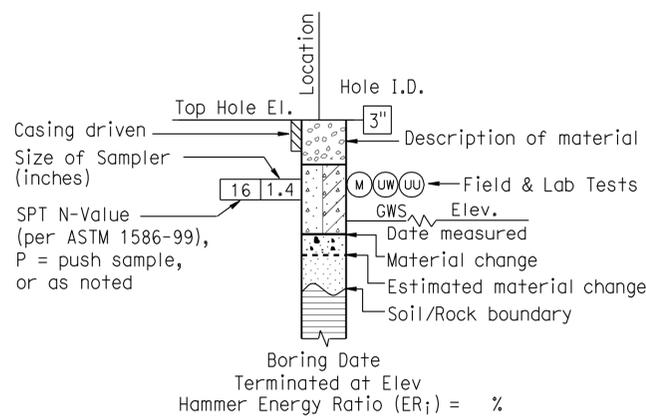
CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS				
Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring
	R	Rotary drilled boring
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778-95)
	O	Other

**Note: Size in inches.**

PLASTICITY OF FINE-GRAINED SOILS	
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.

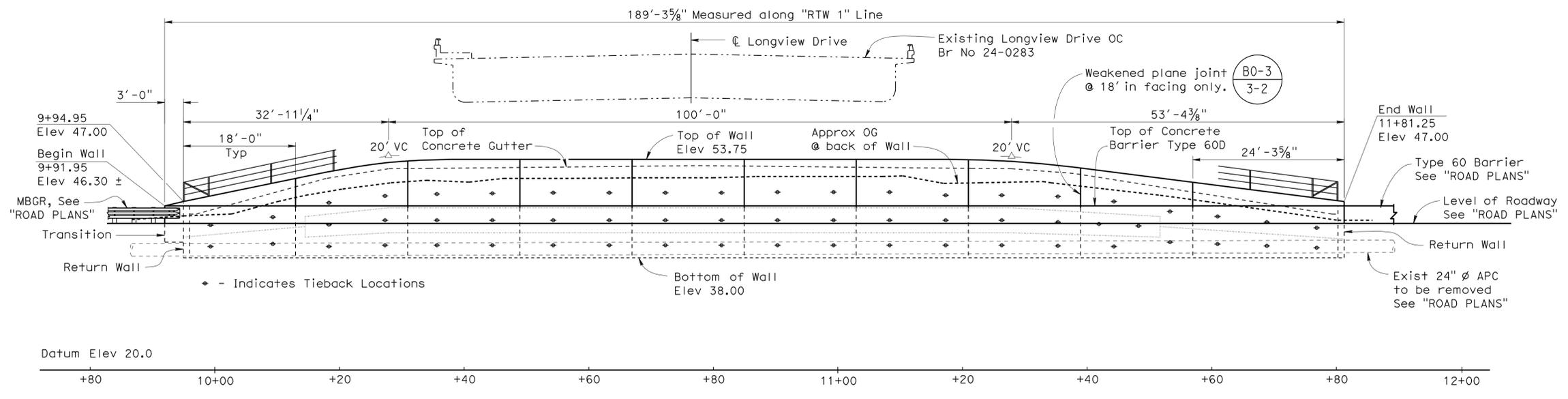


USERNAME => fhmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:37

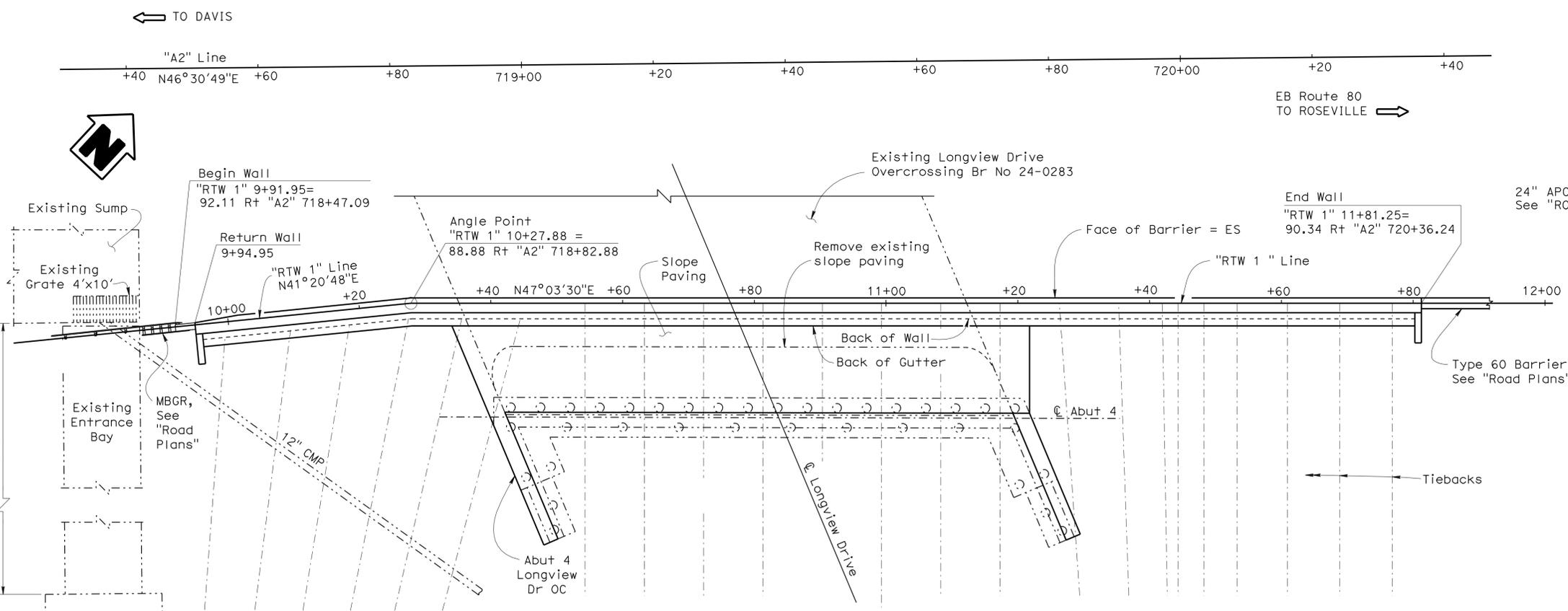


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	994	1012

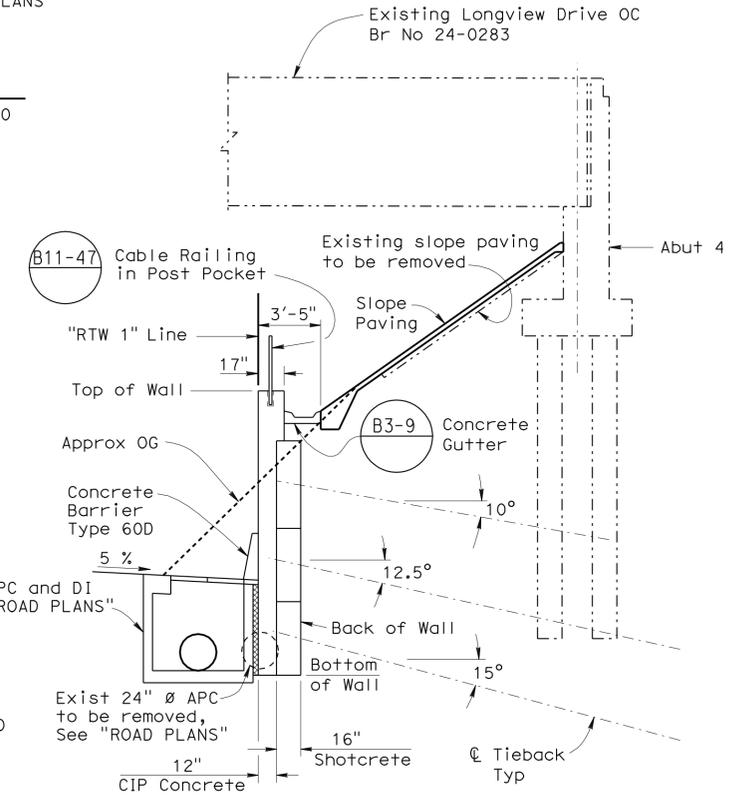
Eric Watson 3/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
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**DEVELOPED MIRRORED ELEVATION**  
1" = 10'



**PLAN**  
1" = 10'



**TYPICAL SECTION**  
1" = 5'

QUANTITIES

STRUCTURE EXCAVATION (TIEBACK WALL)	229	CY
STRUCTURE BACKFILL (TIEBACK WALL)	50	CY
TIEBACK ANCHOR	58	EA
STRUCTURAL CONCRETE, RETAINING WALL	106	CY
BAR REINFORCING STEEL (RETAINING WALL)	36,000	LB
SHOTCRETE	100	CY
SLOPE PAVING (CONCRETE)	25	CY
MINOR CONCRETE (GUTTER)	187	LF
CABLE RAILING	187	LF
CONCRETE BARRIER (TYPE 60D)	187	LF

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

For General Notes, Index to Plans, List of Standard Plans, and Quantities. See "GENERAL NOTES" sheet.

Jeff Sims DESIGN ENGINEER	DESIGN	BY Mark Simonsen	CHECKED Daniel Sessions	SERVICE LOAD DESIGN	LIVE LOADING:	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 1</b>	BRIDGE NO.	<b>RETAINING WALL 1</b> <b>GENERAL PLAN</b>	
	DETAILS	BY Bob Huddleston/Jie Tang	CHECKED Daniel Sessions	LAYOUT	BY Mark Simonsen			CHECKED Daniel Sessions		POST MILE
	QUANTITIES	BY Yihwin Huang	CHECKED Jie Tang	SPECIFICATIONS	BY James Choi			PLANS AND SPECS COMPARED James Choi		9.4

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3  
 CU 03 EA 3797U1  
 DISREGARD PRINTS BEARING EARLIER REVISION DATES: 10/26/08 02/24/09 02/28/09 03/26/10 10/26/08 11/24/08 11/24/08 12/14/08  
 SHEET 1 OF 19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, M0.0/M10.4	995	1012

<i>Eric Watson</i>	3/26/10
REGISTERED CIVIL ENGINEER	DATE
9-7-10	
PLANS APPROVAL DATE	

Eric Watson
No. 64273
Exp. 6-30-11
CIVIL

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### GENERAL NOTES

**DESIGN:** Caltrans Bridge Design Specifications - April 2000 (LFD)  
(1996 AASHTO with Interims and Revisions by Caltrans)

**STRUCTURAL STEEL:**

$f_y = 36 \text{ ksi}$   
 $f_s = 20 \text{ ksi}$

**REINFORCED CONCRETE:**

$f'_c = 3600 \text{ psi}$   
 $f_y = 60 \text{ ksi}$

**WORKING STRESS DESIGN:**

$f_c = 1440 \text{ psi}$   
 $f_s = 24 \text{ ksi}$   
 $n = 9$

**REINFORCED SHOTCRETE**

$f'_c = 4000 \text{ psi}$   
 $f'_c i = 3600 \text{ psi}$   
 $f_y = 60 \text{ ksi}$

**WALL DESIGN LOADING**

Lateral Earth Load: Based on Coulomb theory.  
Live Load on Abutment: 2' Surcharge

**SOIL PARAMETERS**

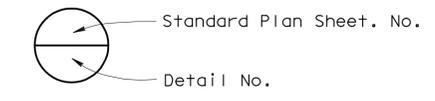
For determination of design lateral earth load  
Unit Weight  $\gamma = 125 \text{ pcf}$   
Internal Friction Angle  $\phi = 34^\circ$

### INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN
2	GENERAL NOTES
3	FOUNDATION PLAN
4	STRUCTURE PLAN NO. 1
5	STRUCTURE PLAN NO. 2
6	TYPICAL WALL SECTIONS
7	DETAILS NO. 1
8	DETAILS NO. 2
9	DETAILS NO. 3
10	DETAILS NO. 4
11	DETAILS NO. 5
12	DETAILS NO. 6
13	DETAILS NO. 7
14	SLOPE PAVING
15	LOG OF TEST BORINGS 1 OF 5
16	LOG OF TEST BORINGS 2 OF 5
17	LOG OF TEST BORINGS 3 OF 5
18	LOG OF TEST BORINGS 4 OF 5
19	LOG OF TEST BORINGS 5 OF 5

### STANDARD PLANS DATED MAY, 2006

A76A	Concrete Barrier Type 60
B0-1	Bridge Details
B0-3	Bridge Details
B3-9	Retaining Wall Details NO. 2
B11-47	Cable Railing



STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Mark Simonsen	CHECKED Daniel Sessions	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>1</b>	BRIDGE NO.	RETAINING WALL 1						
	DETAILS	BY Jinrong Zhou	CHECKED Daniel Sessions			24E0006	GENERAL NOTES						
	QUANTITIES	BY Yihwin Huang	CHECKED Jie Tang			POST MILE	9.4						
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						CU 03 EA 3797U1	REVISION DATES					SHEET 2 OF 19	
						DISREGARD PRINTS BEARING EARLIER REVISION DATES					10/23/08 10/31/08 11/01/08 02/24/09 05/26/10		

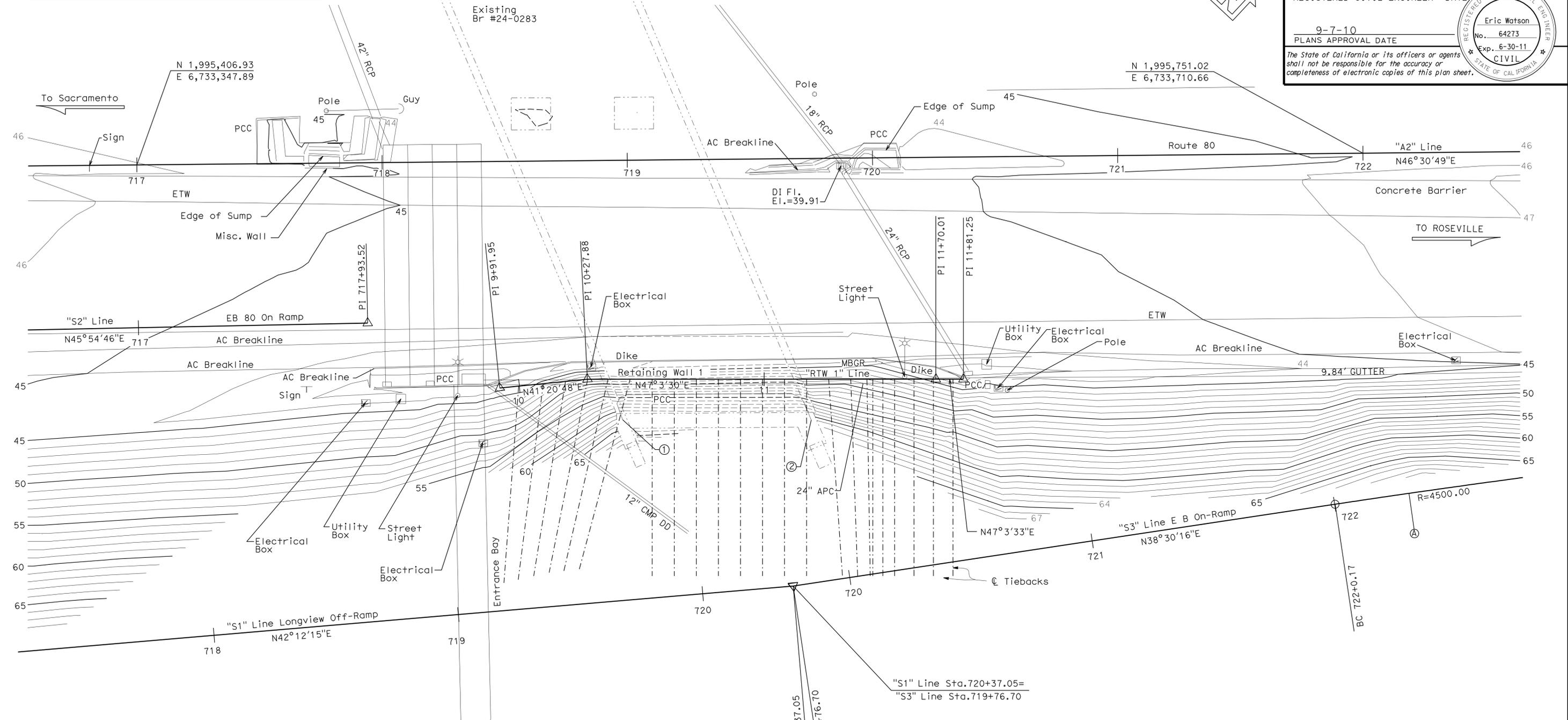
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USERNAME => hrmikes DATE PLOTTED => 04-FEB-2011 TIME PLOTTED => 06:37

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	996	1012

Eric Watson 3/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
 Eric Watson No. 64273 Exp. 6-30-11 CIVIL  
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CURVE DATA				
No.	R	Δ	T	L
(A)	4500.00	6°9'0"	241.74	483.02



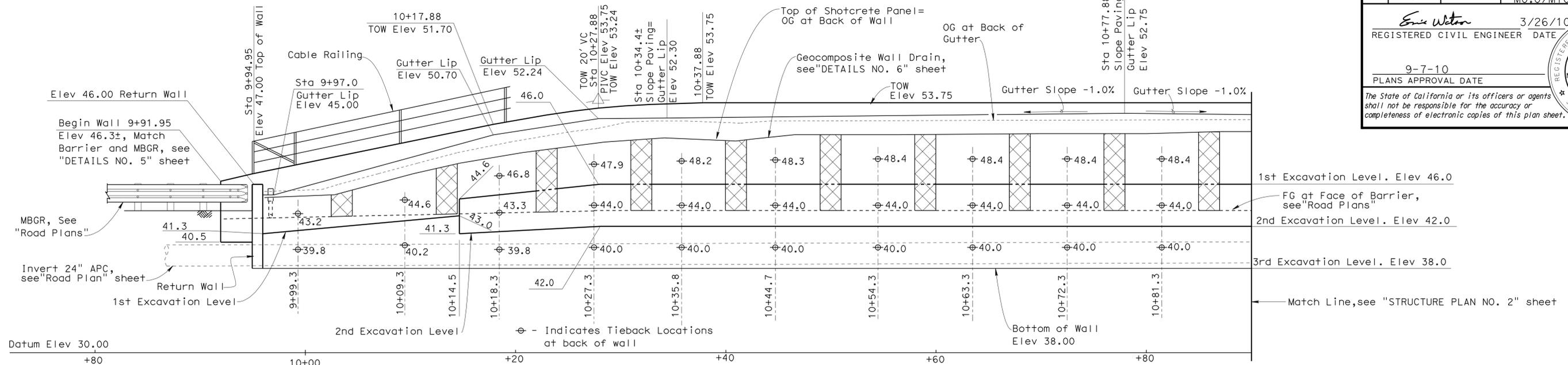
**SURVEY CONTROL**  
 PHHV2232 (Not Shown On Plan)  
 Fnd Aerial Photo Control "X"  
 586.79 Lt. @ "A2" Line Rte 80  
 Sta. 717+58.39  
 N 1995872.85  
 E 6732986.43  
 Elev. = 60.77  
 PHHV2233 (Not Shown On Plan)  
 Fnd Aerial Photo Control "X"  
 84.61Rt. @ "A2" Line Rte 80  
 Sta. 715+90.32  
 N 1995270.06  
 E 6733326.53  
 Elev. = 45.80

Bridge Location (Br: #24-0283) (Used Abutment Data)  
 ① - 105.49 Rt. @, Sta. 718+97.11, Elev.=61.72 ±  
 ② - 106.39 Rt. @, Sta. 719+74.02, Elev.=61.76 ±

Note:  
 All Utility and Drainage information is per District Utility Plan and Drainage Plan.

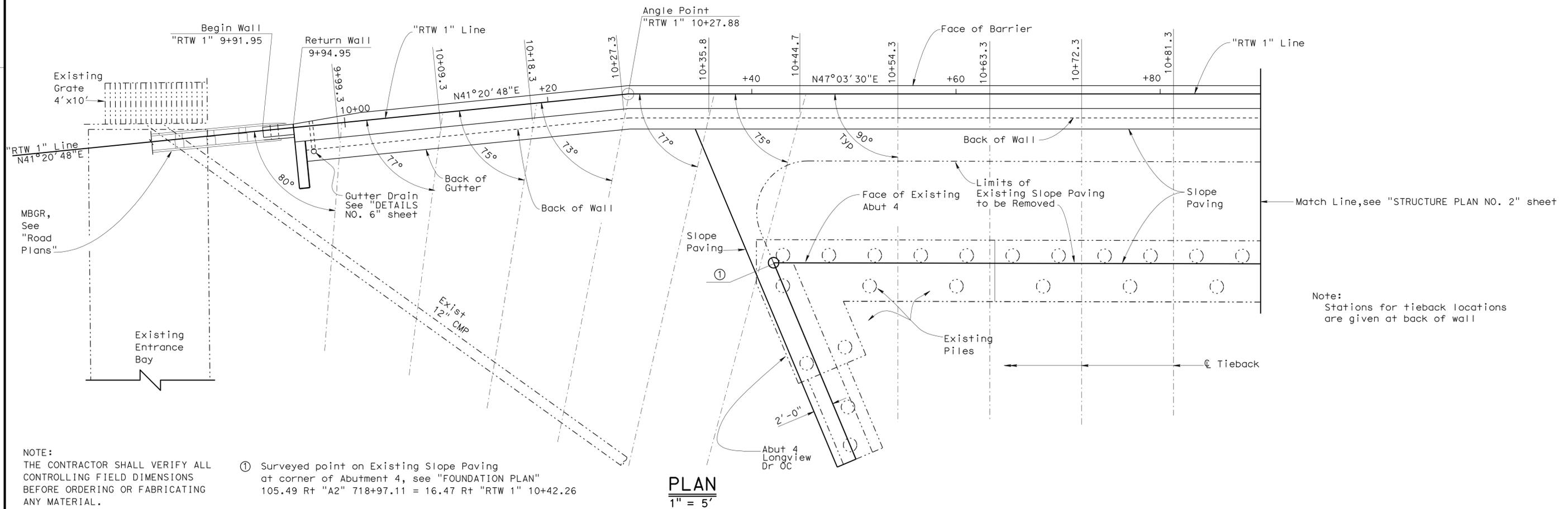
<b>PRELIMINARY INVESTIGATION SECTION</b>				DESIGN BY Mark Simonsen CHECKED Daniel Sessions	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 01</b>	BRIDGE NO. 24E0006 POST MILE 9.4	<b>RETAINING WALL 1</b> <b>FOUNDATION PLAN</b>	
SCALE VERT. DATUM NGVD29 1"=20'	PHOTOGAMMETRY AS OF: X SURVEYED BY DISTRICT/ E. LOPEZ CHECKED BY E. LOPEZ 06/2007	DETAILS BY Jie Tang CHECKED Daniel Sessions	QUANTITIES BY Yihwin Huang CHECKED Jie Tang	DISREGARD PRINTS BEARING EARLIER REVISION DATES			REVISION DATES 7/11/2007 9/28/2007 12/04/08 12/14/08 12/26/08 01/14/09 02/25/09	SHEET 3 OF 19	
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			CU 03 EA 3797U1	FILE => 24e0006-e-fp101.dgn	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yo1,Sac	80	R10.9/R11.7, M0.0/M10.4	997	1012
Eric Watson			3/26/10		
REGISTERED CIVIL ENGINEER			DATE		
9-7-10			PLANS APPROVAL DATE		
Eric Watson			No. 64273		
Exp. 6-30-11			CIVIL		
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**DEVELOPED REAR ELEVATION**

1" = 5'



NOTE:  
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① Surveyed point on Existing Slope Paving at corner of Abutment 4, see "FOUNDATION PLAN" 105.49 Rt "A2" 718+97.11 = 16.47 Rt "RTW 1" 10+42.26

**PLAN**  
1" = 5'

DESIGN	BY Mark Simonsen	CHECKED Daniel Sessions
DETAILS	BY Jinrong Zhou	CHECKED Daniel Sessions
QUANTITIES	BY Yihwin Huang	CHECKED Jie Tang

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 1

BRIDGE NO.	24E0006
POST MILE	9.4

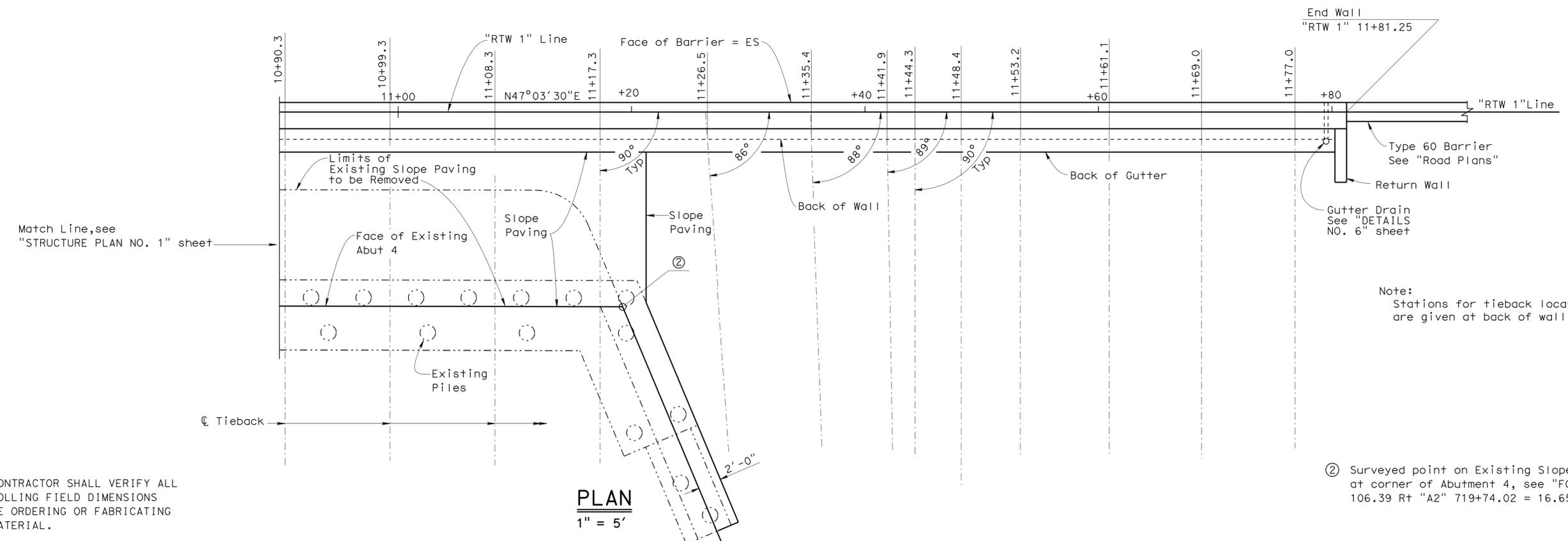
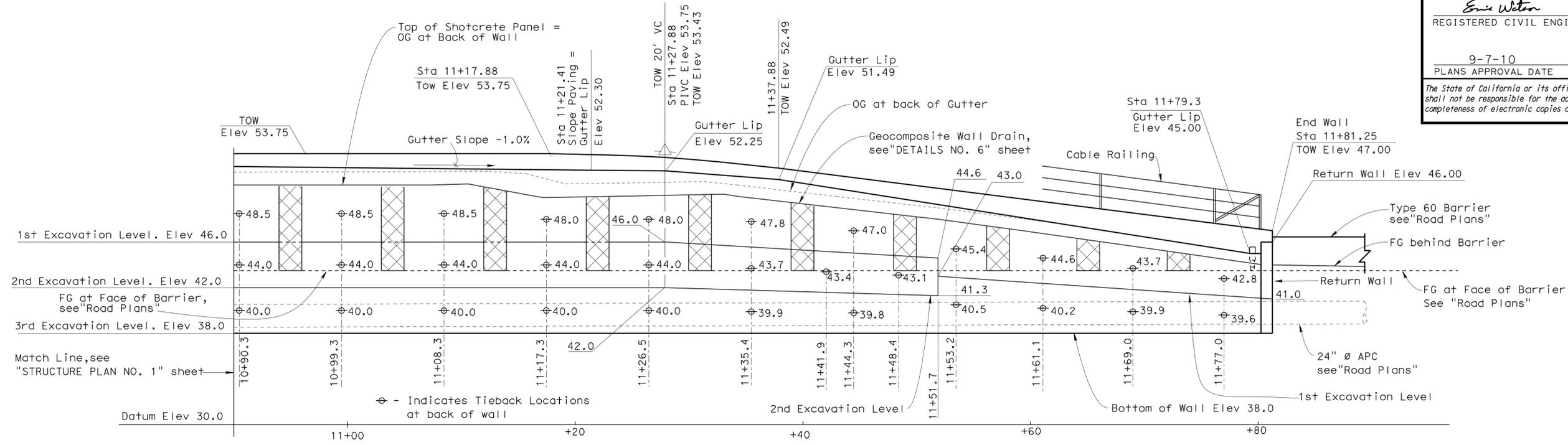
**RETAINING WALL 1**  
**STRUCTURE PLAN NO. 1**



REVISION DATES	10/06/08	10/10/08	10/28/08	10/28/08	11/02/08	11/04/08	11/18/08	02/24/09
SHEET	4							
OF	19							

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	998	1012

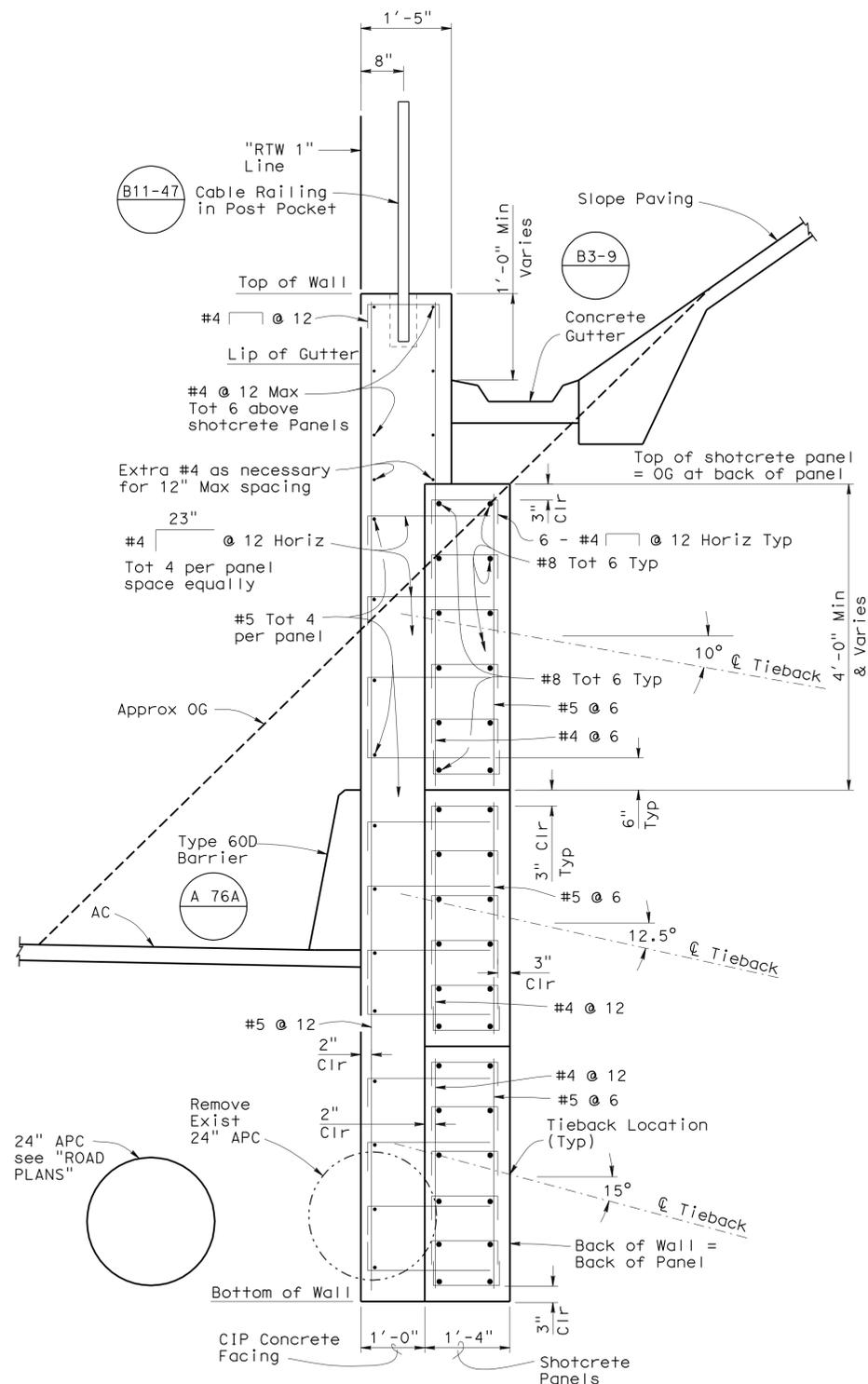
Eric Watson 3/26/10  
 REGISTERED CIVIL ENGINEER DATE  
 9-7-10  
 PLANS APPROVAL DATE  
 Eric Watson No. 64273 Exp. 6-30-11 CIVIL  
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STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Mark Simonsen	CHECKED Daniel Sessions	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	RETAINING WALL 1		
	DETAILS	BY Jinrong Zhou	CHECKED Daniel Sessions			24E0006	STRUCTURE PLAN NO. 2		
	QUANTITIES	BY Yihwin Huang	CHECKED Jie Tang			9.4			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 03 EA 3797U1	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES			SHEET 5 OF 19

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	999	1012
Eric Watson			3/26/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
Eric Watson			REGISTERED PROFESSIONAL ENGINEER		
No. 64273			Exp. 6-30-11		
CIVIL			STATE OF CALIFORNIA		
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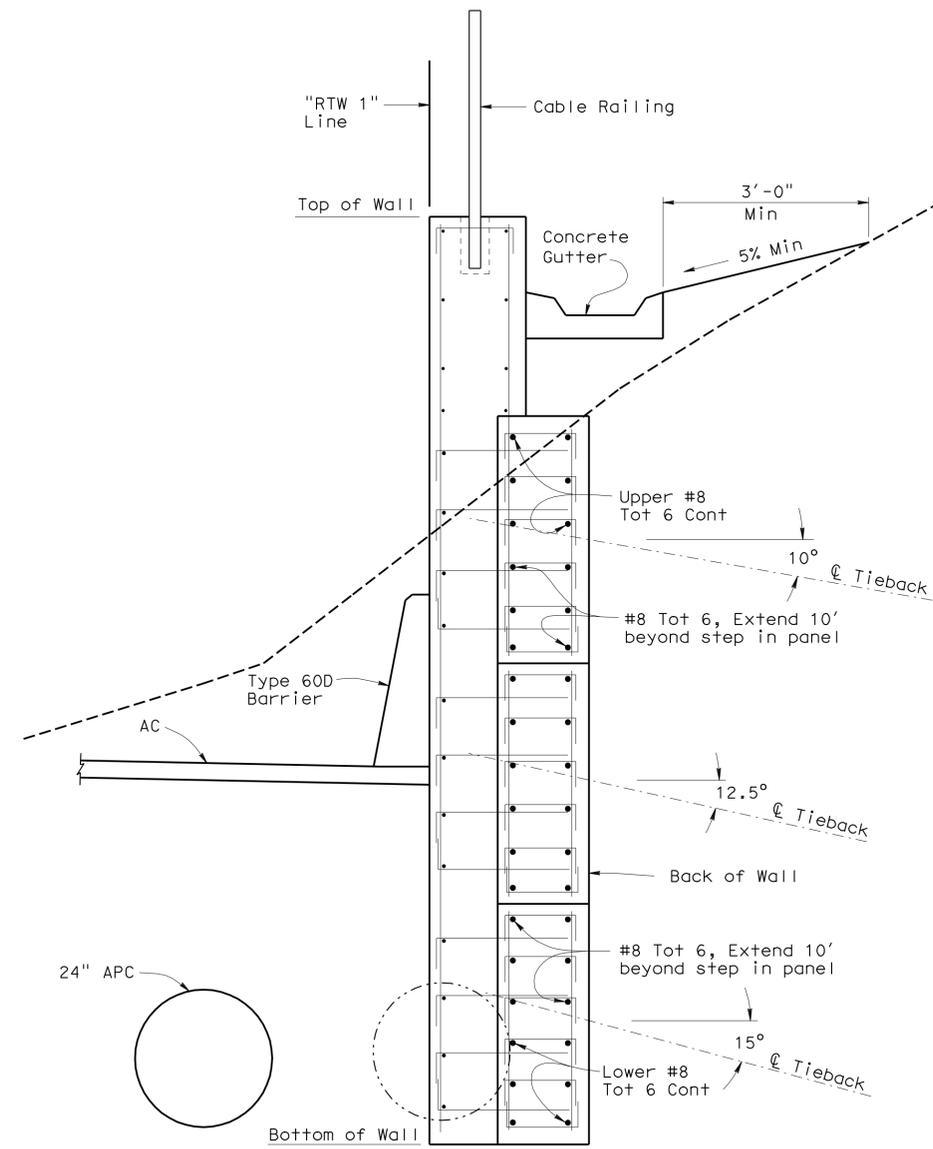


**TYPICAL SECTION**

Sta 10+34.4 - Sta 11+21.4

3/4" = 1'-0"

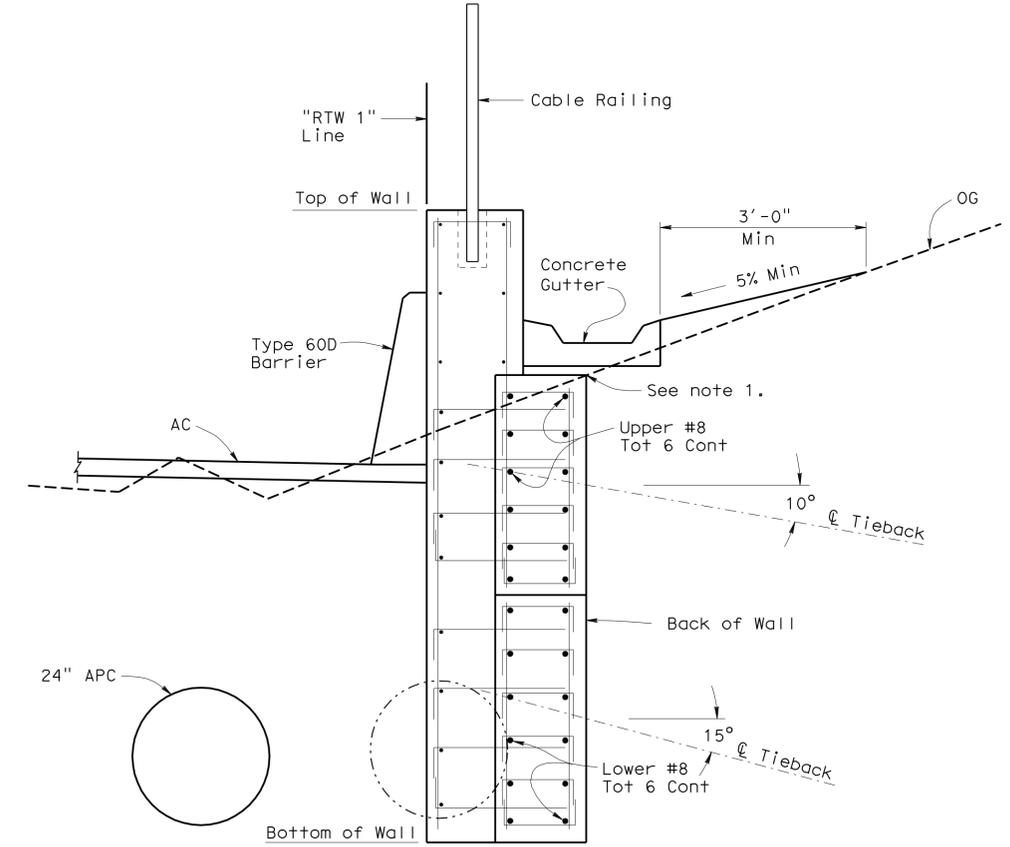
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



**TYPICAL SECTION**

Sta 10+14.5 - Sta 10+34.4  
Sta 11+21.4 - Sta 11+51.7

3/4" = 1'-0"



**TYPICAL SECTION**

Sta 9+96.0 - Sta 10+14.5  
Sta 11+51.7 - Sta 11+80.3

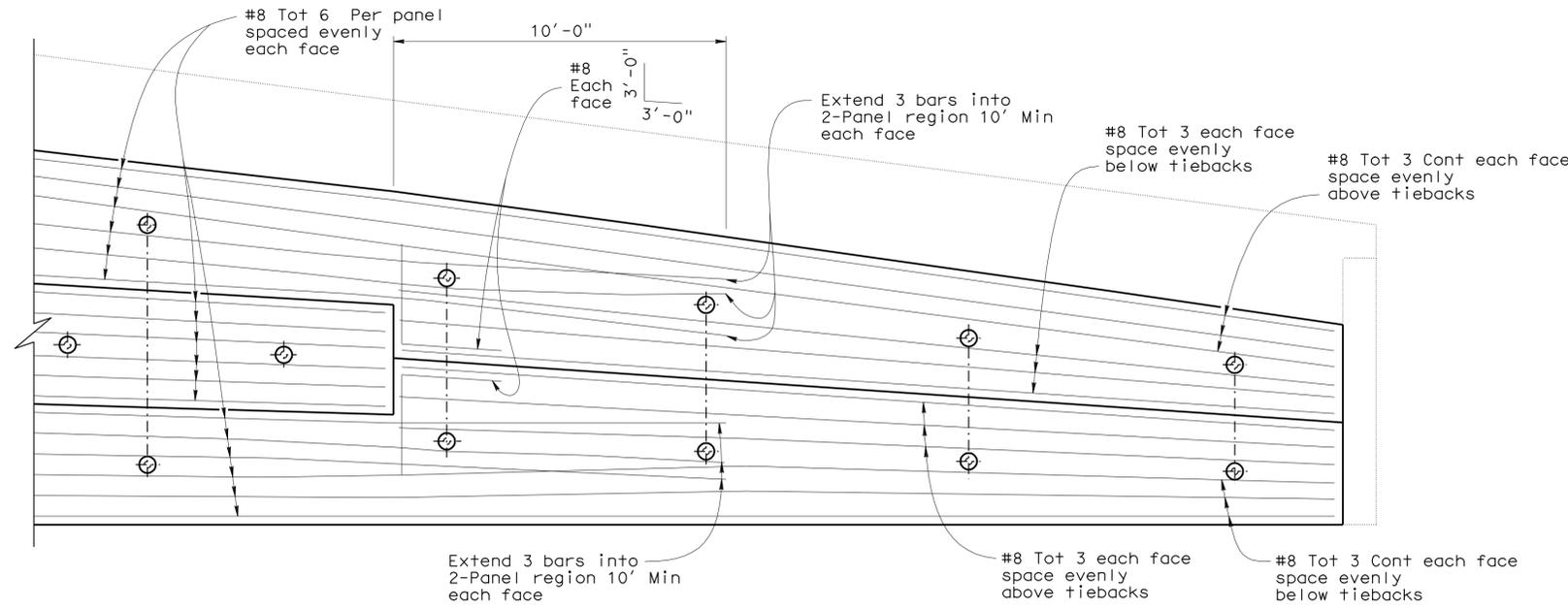
3/4" = 1'-0"

Note:  
1. Where OG at back of panel is above the bottom of the concrete gutter, keep the top of the panel at bottom of gutter elevation.

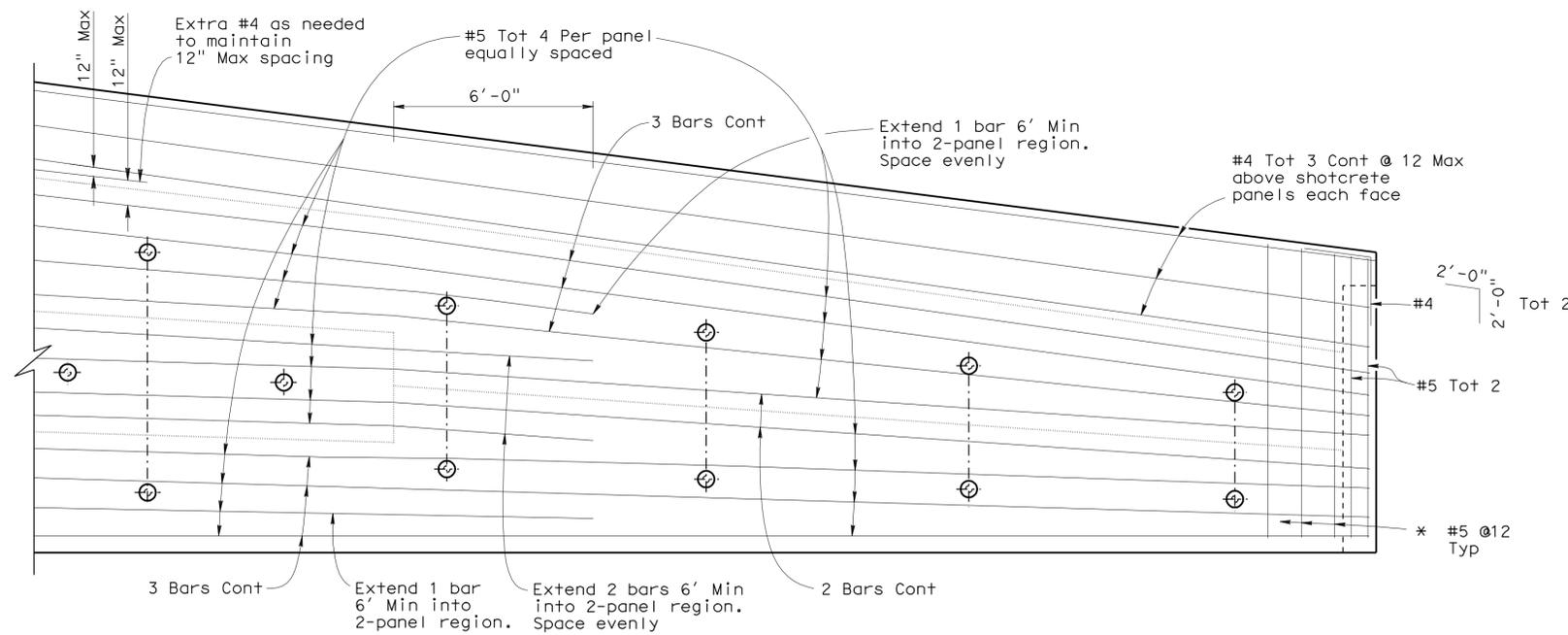
DESIGN	BY Mark Simonsen	CHECKED Daniel Sessions	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 1	BRIDGE NO.	RETAINING WALL 1							
DETAILS	BY Jie Tang	CHECKED Daniel Sessions			24E0006	TYPICAL WALL SECTIONS							
QUANTITIES	BY Yihwin Huang	CHECKED Jie Tang			POST MILE								
			CU 03	9.4	REVISION DATES					SHEET	OF		
			EA 3797U1		10/12/08	10/22/08	10/26/08	11/04/08	12/10/08	02/25/09	03/26/10	6	19

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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	Yol, Sac	80	R10.9/R11.7, MO.0/M10.4	1000	1012
Eric Watson			3/26/10	REGISTERED CIVIL ENGINEER DATE	
9-7-10			PLANS APPROVAL DATE		
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No. 64273			Exp. 6-30-11		
CIVIL			STATE OF CALIFORNIA		
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**WALL ELEVATION**  
**SHOCTCRETE PANEL REINFORCEMENT**  
 $\frac{3}{8}'' = 1'-0''$



**WALL ELEVATION**  
**CIP CONCRETE FACING REINFORCEMENT**  
 $\frac{3}{8}'' = 1'-0''$

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

DESIGN	BY Mark Simonsen	CHECKED Daniel Sessions
DETAILS	BY Jie Tang	CHECKED Daniel Sessions
QUANTITIES	BY Yihwin Huang	CHECKED Jie Tang

**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
**DESIGN BRANCH 1**

BRIDGE NO.	24E0006
POST MILE	9.4

**RETAINING WALL 1**  
**DETAILS NO. 1**



REVISION DATES	10/26/08	11/24/08	11/24/08	12/25/08	02/25/09
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